H0386-1MA/RCRA

RECRA LabNet

a division of Recra Environmental, Inc.

Virtual Laboratories Everywhere

0051539

JUN 1999 RECEIVED Data Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-008
RFW# : 9904L707
SDG# : H0386
SAF# : B99-008

W.O. # : 10985-001-001-9999-00
Date Received: 04-16-1999

AUG 1999 RECEIVED EDMC

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 11 water samples.

2. The samples were prepared and analyzed in accordance with the methods checked on the attached glossary.

3. Sample holding times as required by the method and/or contract were met for Hardness, however pH, Biochemical Oxygen Demand and Nitrate were received past hold.

4. The cooler temperatures were recorded on the chain-of-custody.

5. The method blanks were within method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Hardness was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

for Pat E

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

5-14-99
Date

njp\i04-707

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 17 pages.

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

WET CHEMISTRY METHODS GLOSSARY FOR ANALYSIS OF WATER SAMPLES

	EPA 600	SW846	OTHER
Acidity	__305.1		
__Alkalinity __Bicarbonate __Carbonate	__310.1		
BOD	✓405.1		__5210B (b)
Ion Chromatography:			
__Bromide __Chloride __Fluoride	__300.0	__9056	
__Nitrite ✓Nitrate __Phosphate	✓300.0	__9056	
__Sulfate __Formate __Acetate __Oxalate	__300.0	__9056	
Chloride	__325.2	__9251	
Chlorine Residual	__330.5 (mod)		
Cyanide Amenable to Chlorination	__335.2	__9010A	
Cyanide (Total)	__335.2	__9010A __9012	__ILM04.0 (e)
Cyanide, Weak Acid Dissociable			__412 (a) __4500CN-I (b)
COD	__410.4 (mod)		__5220 C (b)
Color	__110.2		
Corrosivity (by Coupon)		__1110 (mod)	
Chromium VI		__7196A	__3500Cr-D (b)
Fluoride	__340.2		
Hardness, Calcium	__215.2		
Hardness, Total	✓130.2		
Iodide			__ASTM D19P202 (1)
Surfactant	__425.1		
__Nitrate-Nitrite __Nitrate __Nitrite	__353.2		
Ammonia	__350.3		
Total __Kjeldahl Nitrogen __Organic Nitrogen	__351.4		
Total __Organic __Inorganic Carbon	__415.1	__9060	
Oil and Grease	__413.1	__9070	
✓pH __pH, Paper	✓150.1	__9040A __9041A	
Petroleum Hydrocarbons, Total Recoverable	__418.1		
Phenol	__420.1 __420.2	__9065 __9066	
__Ortho Phosphate __Total Phosphate	__365.2		__4500-P B __C
Salinity			__210A (a) __2520B (b)
Settleable Solids	__160.5		
Sulfide	__376.2 __376.1	__9030A	
Reactive __Cyanide __Sulfide		__Sec 7.3	
Silica	__370.1		
Sulfite	__377.1		
Sulfate	__375.4	__9038	
Specific Conductance	__120.1	__9050	
Specific Gravity			__213E (a)
__TCLP __TCLV		__1311	
Synthetic Precipitation Leach		__1312	
Total __Dissolved __Suspended __Solids	160__.1__.2__.3		
Total Organic Halides	__450.1	__9020B	
Turbidity	__180.1		
Volatile Solids __Total __Dissolved __Suspended	__160.4		

Other:_____ Method:_____

002

RFW 21-21-034/A-08/95

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008 RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0V8J2	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	120		MG/L	6.2	25
		Hardness	231		MG/L	2.0	1.0
		pH	8.5		PH UNITS	0.01	1.0
-002	B0V8J3	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	120		MG/L	6.2	25
		Hardness	225		MG/L	2.0	1.0
		pH	8.2		PH UNITS	0.01	1.0
-003	B0V8J4	BOD 5 Day	1.0		MG/L	1.0	1.0
		Nitrate by IC	120		MG/L	6.2	25
		Hardness	217		MG/L	2.0	1.0
		pH	8.3		PH UNITS	0.01	1.0
-004	B0V8J5	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	120		MG/L	6.2	25
		Hardness	220		MG/L	2.0	1.0
		pH	8.3		PH UNITS	0.01	1.0
-005	B0V8J6	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	120		MG/L	6.2	25
		Hardness	225		MG/L	2.0	1.0
		pH	8.0		PH UNITS	0.01	1.0
-006	B0V8J7	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	110		MG/L	6.2	25
		Hardness	257		MG/L	2.0	1.0
		pH	8.0		PH UNITS	0.01	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008 RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B0V8J8	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	78		MG/L	6.2	25
		Hardness	219		MG/L	2.0	1.0
		pH	8.0		PH UNITS	0.01	1.0
-008	B0V8J9	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	440		MG/L	25	100
		Hardness	375		MG/L	4.0	1.0
		pH	7.8		PH UNITS	0.01	1.0
-009	B0V8K0	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	110		MG/L	6.2	25
		Hardness	216		MG/L	2.0	1.0
		pH	8.0		PH UNITS	0.01	1.0
-010	B0V8K1	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	64		MG/L	2.5	10
		Hardness	141		MG/L	2.0	1.0
		pH	8.0		PH UNITS	0.01	1.0
-011	B0V8K2	BOD 5 Day	1.0	u	MG/L	1.0	1.0
		Nitrate by IC	15		MG/L	0.50	2.0
		Hardness	92.7		MG/L	1.0	1.0
		pH	8.1		PH UNITS	0.01	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LIB006-MB1	BOD 5 Day	1.0	u	MG/L	1.0	1.0
BLANK10	99LIC045-MB1	Nitrate by IC	0.25	u	MG/L	0.25	1.0
BLANK10	99LHDA03-MB1	Hardness	1.0	u	MG/L	1.0	1.0
BLANK10	99LIC046-MB1	Nitrate by IC	0.25	u	MG/L	0.25	1.0

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INORGANICS ACCURACY REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008

RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-006	B0V8J7	Hardness	337	257	80.0	99.6	1.0
-007	B0V8J8	Nitrate by IC	210	78	120	103.1	25
BLANK10	99LIB006-MB1	BOD 5 Day	200	1.0 u	200	100	1.0
BLANK10	99LIC045-MB1	Nitrate by IC	4.9	0.25u	5.0	98.9	1.0
BLANK10	99LHDA03-MB1	Hardness	41.1	1.0 u	40.0	102.8	1.0
		Hardness MSD	42.7	1.0 u	40.0	106.8	1.0
BLANK10	99LIC046-MB1	Nitrate by IC	4.8	0.25u	5.0	95.5	1.0

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INORGANICS DUPLICATE SPIKE REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008 RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	99LHDA03-MB1	Hardness	102.8	106.8	3.8

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INORGANICS PRECISION REPORT 05/14/99

CLIENT: TNU-HANFORD B99-008 RECRA LOT #: 9904L707

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0V8J2	BOD 5 Day	1.0 u	1.0 u	NC	1.0
-006REP	B0V8J7	Hardness	257	257	0.077	1.0
-007REP	B0V8J8	Nitrate by IC	78	78	0.24	25
-011REP	B0V8K2	pH	8.1	8.1	0.1	1.0

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0V8J2						
BIOCHEMICAL OXYGEN D	001	W	99LIB006	04/14/99	04/21/99	04/26/99
BOD 5 DAY	001 REP	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	001	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	001	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	001	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J3						
BIOCHEMICAL OXYGEN D	002	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	002	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	002	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	002	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J4						
BIOCHEMICAL OXYGEN D	003	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	003	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	003	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	003	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J5						
BIOCHEMICAL OXYGEN D	004	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	004	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	004	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	004	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J6						
BIOCHEMICAL OXYGEN D	005	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	005	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	005	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	005	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J7						
BIOCHEMICAL OXYGEN D	006	W	99LIB006	04/14/99	04/21/99	04/26/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	006	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	006	W	99LHDA03	04/14/99	04/29/99	04/29/99
HARDNESS	006 REP	W	99LHDA03	04/14/99	04/29/99	04/29/99
HARDNESS	006 MS	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	006	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J8						
BIOCHEMICAL OXYGEN D	007	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	007	W	99LIC045	04/14/99	04/21/99	04/21/99
NITRATE BY IC	007 REP	W	99LIC045	04/14/99	04/21/99	04/21/99
NITRATE BY IC	007 MS	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	007	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	007	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8J9						
BIOCHEMICAL OXYGEN D	008	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	008	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	008	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	008	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8K0						
BIOCHEMICAL OXYGEN D	009	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	009	W	99LIC046	04/14/99	04/22/99	04/22/99
HARDNESS	009	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	009	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8K1						
BIOCHEMICAL OXYGEN D	010	W	99LIB006	04/14/99	04/21/99	04/26/99
NITRATE BY IC	010	W	99LIC046	04/14/99	04/22/99	04/22/99
HARDNESS	010	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	010	W	99LPH039	04/14/99	04/16/99	04/16/99
B0V8K2						
BIOCHEMICAL OXYGEN D	011	W	99LIB006	04/14/99	04/21/99	04/26/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	011	W	99LIC045	04/14/99	04/21/99	04/21/99
HARDNESS	011	W	99LHDA03	04/14/99	04/29/99	04/29/99
PH	011	W	99LPH039	04/14/99	04/16/99	04/16/99
PH	011 REP	W	99LPH039	04/14/99	04/16/99	04/16/99

LAB QC:

BIOCHEMICAL OXYGEN D	MB1	W	99LIB006	N/A	04/21/99	04/26/99
BOD 5 DAY	MB1 BS	W	99LIB006	N/A	04/21/99	04/26/99
NITRATE BY IC	MB1	W	99LIC045	N/A	04/21/99	04/21/99
NITRATE BY IC	MB1 BS	W	99LIC045	N/A	04/21/99	04/21/99
HARDNESS	MB1	W	99LHDA03	N/A	04/29/99	04/29/99
HARDNESS	MB1 BS	W	99LHDA03	N/A	04/29/99	04/29/99
HARDNESS	MB1 BSD	W	99LHDA03	N/A	04/29/99	04/29/99
NITRATE BY IC	MB1	W	99LIC046	N/A	04/22/99	04/22/99
NITRATE BY IC	MB1 BS	W	99LIC046	N/A	04/22/99	04/22/99

RECRA LabNet Use Only
9904L707

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

013

Client: TNU-Hanford B99-008
Est. Final Proj. Sampling Date:
Project #: 10986-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: spec Del: std TAT: 30 day
Date Rec'd: 4/16/99 Date Due: 5/16/99
Account #:

Refrigerator #		1									3			1		
#/Type Container	Liquid	3g									1p	1p	1p	1p		
	Solid															
Volume	Liquid	40									125	ltr	500	500		
	Solid															
Preservatives		HCl									-	-	-	-		
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN						

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	0624H								1PH	1BOD5	1CNO3	1HARD		
001	BØV8J2			W	4/14/99	0935	✓								✓	✓	✓	✓		
2	3					0947	✓								✓	✓	✓	✓		
3	4					0959	✓								✓	✓	✓	✓		
4	5					1013	✓								✓	✓	✓	✓		
5	6					1013	✓								✓	✓	✓	✓		
6	7					1042	✓								✓	✓	✓	✓		
7	8					1105	✓								✓	✓	✓	✓		
8	9					1241	✓								✓	✓	✓	✓		
9	BØV8K0					1230	✓								✓	✓	✓	✓		
010	BØV8K1					1403	✓								✓	✓	✓	✓		

Special Instructions:

saf# B99-008

COMPOSITE WASTE

DATE/REVISIONS:
1. Run matrix QC
2.
3.
* 4. 423579524710 - 2.3°C
5. 32 - 2.3°C
6. 21 - 2.3°C

Relinquished by	Received by	Date	Time
Fedex	Stoker	4/16/99	0930

Relinquished by	Received by	Date	Time

ORIGINAL REWRITTEN

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

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)
ph, NO3, BOD out

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

RECRA LabNet Use Only
9904L707

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

014

Client TNU

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

See pg 1

Date Rec'd Date Due

Account #

Refrigerator #																	
#/Type Container	Liquid																
	Solid																
Volume	Liquid					See pg 1											
	Solid																
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
		0624H									1PH	1BOD5	1CNO3	1HARD			
		✓									✓	✓	✓	✓			

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
011	BØV8K2			W	4/14/99	1425

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Jeeler	Joder	4/16/99	0930

Relinquished by	Received by	Date	Time

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

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

See pg 1

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 1 of 3

015

Collector R. Nielson/M. Baechler	Company Contact Keith Maki Telephone No. 373-4989	Project Coordinator TRENT, SJ	Price Code 707 Data Turnaround 45 Days
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	Sampling Location 200 West	SAF No. B99-008	
Ice Chest No. ERC96-013, ERC96-043	Field Logbook No.	Method of Shipment ~~Hand deliver~~ RIN 4/12/99 Federal Express	
Shipped To ~~TMA~~/RECRA RIN 4/15/99	Offsite Property No. A990112, A990113	Bill of Lading/Air Bill No. 42357952 4721, 42357952 4732	
		COA	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C				
	Type of Container	P	P	P	P	P	aGs*				
	No. of Container(s)	1	1	1	1	1	3				
Special Handling and/or Storage Cool 4C	Volume	20mL	125mL	500mL	500mL	1000mL	40mL				
SAMPLE ANALYSIS		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
2 B0V8J2	Water	4-14-99	0935	X	X	X	X	X	X				
B0V8J3	Water	4-14-99	0947	X	X	X	X	X	X				
B0V8J4	Water	4-14-99	0959	X	X	X	X	X	X				
B0V8J5	Water	4-14-99	1013	X	X	X	X	X	X				
3 B0V8J6	Water	4-14-99	1013	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Reece Nielson/R. Nielson	4/14/99 1545	Ref. 1A	4/14/99 1545
Ref 1A	4/15/99 1030	Reece Nielson/R. Nielson	4/15/99 1030
Reece Nielson/R Nielson	4/15/99 1130	FedEx	
Fedex			

SPECIAL INSTRUCTIONS

** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane}

4235 7952 4710

7952 4732

4235 7952 4721

2.3

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
	[signature]	4/16/99 0930	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 2 of 3

016

Collector R. Nielson/M. Bacchler	Company Contact Keith Maki	Telephone No. 373-4989	Project Coordinator TRENT, SJ
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	Sampling Location 200 West		SAF No. B99-008
Ice Chest No. Sample Van, ERC96-013	Field Logbook No.		Method of Shipment RJN ~~Hand deliver~~ 4/12/99 Federal Express
Shipped To ~~TMA~~/RECRA 4/16/99 RJN	Offsite Property No. A990112,		Bill of Lading/Air Bill No. 4235795247 10, 4235795247 21
			COA R2B2A1076Ø

Price Code

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Cool 4C

Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C				
Type of Container	P	P	P	P	P	aGs*				
No. of Container(s)	1	1	1	1	1	3				
Volume	20mL	125mL	500mL	500mL	1000mL	40mL				

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.				
B0V8J7	Water	4-14-99	1042	X	X	X	X	X	X				
B0V8J8	Water	4-14-99	1105	X	X	X	X	X	X				
B0V8J9	Water	4-14-99	1241	X	X	X	X	X	X				
B0V8K0	Water	4-14-99	1230	X	X	X	X	X	X				
B0V8K1	Water	4-14-99	1403	X	X	X	X	X	X				

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson / R. Nielson	4/14/99 1545	Ref. IA	4/14/99 1545
Ref IA	4/15/99 1030	Renee Nielson / R. Nielson	4/15/99 1030
Renee Nielson / R. Nielson	4/15/99 1130	Fedex	
Fedex			

Sign/Print Names

SPECIAL INSTRUCTIONS

** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane}

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By Fedex 4/16/99 0930	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 3 of 3

017

Collector R. Nielson/M. Baechler	**Company Contact** Keith Maki	**Telephone No.** 373-4989	**Project Coordinator** TRENT, SJ
Price Code	**Data Turnaround** 45 Days		
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	**Sampling Location** 200 West		**SAF No.** B99-008
Ice Chest No. ERC 96-043	**Field Logbook No.**		**Method of Shipment** ~~Hand deliver~~ RJN 4/12/99 Federal Express
Shipped To ~~TMA~~/RECRA 4/15/99 RJN	**Offsite Property No.** A990113		**Bill of Lading/Air Bill No.** 423579524732
			COA

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage Cool 4C

Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
Type of Container	P	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	1	3					
Volume	20mL	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS	Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
3 B0V8K2	Water	4-14-99	1425	X	X	X	X	X	X		

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson / R Nielson	4/14/99 1515	Ref. IA	
Ref IA	4/15/99 1030	Renee Nielson / R Nielson	4/15/99 1030
Renee Nielson / Renee Nielson	4/15/99 1130	Fed Ex	
Fedex			

SPECIAL INSTRUCTIONS

** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By Fedex 4/16/99 0930	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

JUN 1999
RECEIVED
Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-008
RFW# : 9904L707
SDG/SAF #: H0386/B99-008

W.O. #: 10985-001-001-9999-00
Date Received: 04-16-99

GC/MS VOLATILE

Eleven (11) water samples were collected on 04-14-99.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for Client Specified Volatile target compounds on 04-21,23-99.

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 temperatures upon receipt have been recorded on the chain-of-custody.

2. The required holding time for analysis was met.

3. All samples with the exception of samples B0V8J2, B0V8J3 and B0V8J4 required 2 to 25-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. The blank spike recovery was within EPA QC limits.

7. The method blanks contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x the CRQL.

8. The pH of sample B0V8J4 exceeded 2.0, indicating that it may not have been properly preserved. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

06-03-99
Date

som\group\data\ voa\tnu04707.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 14 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.

mmz\10-94\gloss.voa

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.

mmz\10-94\gloss.voa

Recra LabNet Philadelphia **Sample Discrepancy Report (SDR)** SDR #: 99V7045

Initiator: Mike Koepel RFW Batch: 9904L707 Parameter: 0624X
Date: 4/21/99 Samples: 003 Matrix: Water
Client: TNU-Hanford Method: SW846/MCAWW/CLP/ Prep Batch: _____

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 X 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)

Test resulted in a ph of 7 for sample 003. All other samples are ph 2 and the COC and bottle say that 003 should also be preserved (ph 2)

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Note in narrative.

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

4. Project Manager Instructions...signature/date: Arlette G. Johnson
✓ 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: Beth Rubino 5/17/99 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
X	X Initiator	__	__ Metals: Doughty
__	X Lab Manager: C. Stefanosky	__	__ Inorganic: Perrone
X	X Project Mgr: Arlette Johnson	__	__ GC/LC: Rycklak/Schnell
__	X Section Mgr: Siery/Wesson/Daniels	__	__ MS: LeMin/Taylor/Kasdras
__	X QA (file): Racioppi	__	__ Log-in: Toder
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Schnell/Doughty/Kauffman	__	__ Other: _____

L-WI-006/E-08/98

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 05/13/99 16:10

RFW Batch Number: **9904L707** Client: **TNU-HANFORD B99-008** Work Order: 10985001001 Page: 1a

	Cust ID:	B0V8J2		B0V8J2		B0V8J2		B0V8J3		B0V8J4		B0V8J5	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	89	%	103	%	104	%	92	%	92	%	94	%
	Toluene-d8	100	%	100	%	104	%	98	%	100	%	99	%
	Bromofluorobenzene	99	%	98	%	103	%	100	%	102	%	102	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		3	JB	3	JB	3	JB	2	JB	2	JB	3	JB
Acetone		5	JB	3	JB	2	JB	2	JB	2	JB	3	JB
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
Chloroform		5	U	5	U	5	U	5	U	5	U	20	
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	1800	E
Trichloroethene		5	U	90	%	90	%	5	U	5	U	5	J
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
Trichlorofluoromethane		5	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 05/13/99 16:10

RFW Batch Number: **9904L707** Client: **TNU-HANFORD B99-008** Work Order: 10985001001 Page: 2a

	Cust ID:	B0V8J5		B0V8J6		B0V8J6		B0V8J7		B0V8J7		B0V8J8	
Sample Information	RFW#:	004 DL		005		005 DL		006		006 DL		007	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	25.0		1.00		25.0		1.00		25.0		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	107	%	96	%	109	%	97	%	111	%	98	%
	Toluene-d8	100	%	101	%	101	%	98	%	100	%	99	%
	Bromofluorobenzene	100	%	101	%	102	%	101	%	102	%	100	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		88	JBD	3	JB	93	JBD	3	JB	27	JBD	1	JB
Acetone		480	BD	2	JB	410	BD	2	JB	50	JBD	3	JB
2-Butanone		250	U	10	U	250	U	10	U	250	U	10	U
Chloroform		26	JD	20		26	JD	28		37	JD	21	
Carbon Tetrachloride		2500	D	1800	E	2400	D	2200	E	4000	D	1900	E
Trichloroethene		120	U	5	J	120	U	5	J	120	U	8	
Tetrachloroethene		120	U	5	U	120	U	5	U	120	U	1	J
Trichlorofluoromethane		120	U	5	U	120	U	5	U	120	U	5	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 05/13/99 16:10

RFW Batch Number: **9904L707** Client: **TNU-HANFORD B99-008** Work Order: 10985001001 Page: 3a

	Cust ID:	B0V8J8		B0V8J9		B0V8J9		B0V8K0		B0V8K0		B0V8K1	
Sample Information	RFW#:	007 DL		008		008 DL		009		009 DL		010	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	25.0		1.00		25.0		1.00		25.0		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	105	%	99	%	108	%	102	%	108	%	102	%
	Toluene-d8	100	%	99	%	100	%	99	%	100	%	99	%
	Bromofluorobenzene	100	%	100	%	100	%	99	%	100	%	98	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		31	JBD	1	JB	32	JBD	1	JB	31	JBD	3	JB
Acetone		46	JBD	3	JB	30	JBD	3	JB	37	JBD	5	JB
2-Butanone		250	U	10	U	250	U	10	U	250	U	10	U
Chloroform		38	JD	30		78	JD	19		60	JD	18	
Carbon Tetrachloride		2700	D	2000	E	2900	D	1700	E	2100	D	1000	E
Trichloroethene		120	U	3	J	120	U	5	J	120	U	4	J
Tetrachloroethene		120	U	1	J	120	U	1	J	120	U	5	U
Trichlorofluoromethane		120	U	5	U	120	U	5	U	120	U	5	U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles By GC/MS, Special List

Report Date: 05/13/99 16:10

RFW Batch Number: **9904L707** Client: **TNU-HANFORD B99-008** Work Order: 10985001001 Page: 4a

	Cust ID:	B0V8K1		B0V8K2		B0V8K2		VBLKZW		VBLKZW BS		VBLKAB	
Sample Information	RFW#:	010 DL		011		011 DL		99LVN125-MB1		99LVN125-MB1		99LVN127-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	10.0		1.00		2.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	1,2-Dichloroethane-d4	106	%	104	%	109	%	93	%	91	%	109	%
	Toluene-d8	99	%	102	%	101	%	98	%	100	%	101	%
	Bromofluorobenzene	100	%	99	%	99	%	100	%	101	%	109	%
			fl		fl		fl		fl		fl		fl
Methylene Chloride		10	JBD	1	JB	2	JBD	6		5	B	2	J
Acetone		17	JBD	4	JB	4	JBD	8	J	7	JB	4	J
2-Butanone		100	U	10	U	20	U	10	U	10	U	10	U
Chloroform		38	JD	17		21	D	5	U	5	U	5	U
Carbon Tetrachloride		1100	D	230	E	230	D	5	U	5	U	5	U
Trichloroethene		50	U	5	U	10	U	5	U	93	%	5	U
Tetrachloroethene		50	U	5	U	10	U	5	U	5	U	5	U
Trichlorofluoromethane		50	U	5	U	10	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

80

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-008

DATE RECEIVED: 04/16/99 RFW LOT # :9904L707

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0V8J2	001	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J2	001 MS	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J2	001 MSD	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J3	002	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J4	003	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J5	004	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J5	004 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J6	005	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J6	005 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J7	006	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J7	006 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J8	007	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J8	007 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8J9	008	W	99LVN125	04/14/99	N/A	04/21/99
B0V8J9	008 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8K0	009	W	99LVN125	04/14/99	N/A	04/21/99
B0V8K0	009 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8K1	010	W	99LVN125	04/14/99	N/A	04/21/99
B0V8K1	010 D1	W	99LVN127	04/14/99	N/A	04/23/99
B0V8K2	011	W	99LVN125	04/14/99	N/A	04/21/99
B0V8K2	011 D1	W	99LVN127	04/14/99	N/A	04/23/99

LAB QC:

VBLKZW	MB1	W	99LVN125	N/A	N/A	04/21/99
VBLKZW	MB1 BS	W	99LVN125	N/A	N/A	04/21/99
VBLKAB	MB1	W	99LVN127	N/A	N/A	04/23/99

RECRA LabNet Use Only

9904L707

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS (8) 9cms VOA

Client: TNU-Hanford B99-008
Est. Final Proj. Sampling Date:
Project #: 10986-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: spec Del: std TAT: 30 days
Date Rec'd: 4/16/99 Date Due: 5/16/99
Account #:

Refrigerator #		1											3			1			
#/Type Container	Liquid	3g											1p	1p	1p	1p			
	Solid																		
Volume	Liquid	40											125	HT	500	500			
	Solid																		
Preservatives		HCl											-	-	-	-			
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN									
RECRA LabNet Use Only		8240	8270																

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	VOA 8240	BNA 8270	Pest/PCB	Herb	Metal	CN				
001	BØV8J2			W	4/14/99	0935	✓						✓	✓	✓	✓
2	3					0947	✓						✓	✓	✓	✓
3	4					0959	✓						✓	✓	✓	✓
4	5					1013	✓						✓	✓	✓	✓
5	6					1013	✓						✓	✓	✓	✓
6	7					1042	✓						✓	✓	✓	✓
7	8					1105	✓						✓	✓	✓	✓
8	9					1241	✓						✓	✓	✓	✓
9	BØV8K0					1230	✓						✓	✓	✓	✓
010	BØV8K1					1403	✓						✓	✓	✓	✓

Special Instructions:

saf# B99-008

COMPOSITE WASTE

DATE/REVISIONS:
1. Run matrix QC
2.
3.
4. * 4235795247 10 - 2.3°C
5. 32 - 2.3°C
6. 21 - 2.3°C

Relinquished by	Received by	Date	Time
Jeckey	Jorder	4/16/99	0930

Relinquished by	Received by	Date	Time

ORIGINAL REWRITTEN

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:

ph, NO3, BOD out

RECRA LabNet Use Only
9904L707

Custody Transfer Record/Lab Work Request

RECRA LabNet

11

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC _____ Del _____ TAT _____

See pg 1

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						
		RECRA LabNet Use Only																
		5/4/99 ~~[illegible]~~ 5600AK											1PH	1BOD5	1CN03	1HARD		
		✓											✓	✓	✓	✓		

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
011	B0V8K2			W	4/14/99	1425

Special Instructions:

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
Feeley	Joder	4/16/99	0930

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

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

See pg 1

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 1 of 3

Collector: R. Nielson/M. Baechler	Company Contact: Keith Maki — Telephone No.: 373-4989	Project Coordinator: TRENT, SJ	Price Code: 707 — Data Turnaround: 45 Days
Project Designation: 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	Sampling Location: 200 West	SAF No.: B99-008	
Ice Chest No.: ERC96-013, ERC96-043	Field Logbook No.	Method of Shipment: ~~Hand deliver~~ RIN 4/12/99 Federal Express	
Shipped To: ~~TMA~~/RECRA RIN 4/15/99	Offsite Property No.: A990112, A990113	Bill of Lading/Air Bill No.: 42357952 4721, 42357952 4732	
		COA	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C				
	Type of Container	P	P	P	P	P	aGs*				
	No. of Container(s)	1	1	1	1	1	3				
Special Handling and/or Storage: Cool 4C	Volume	20mL	125mL	500mL	500mL	1000mL	40mL				
SAMPLE ANALYSIS		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions				

Sample No.	Matrix *	Sample Date	Sample Time										
2 B0V8J2	Water	4-14-99	0935	X	X	X	X	X	X				
B0V8J3	Water	4-14-99	0947	X	X	X	X	X	X				
B0V8J4	Water	4-14-99	0959	X	X	X	X	X	X				
B0V8J5	Water	4-14-99	1013	X	X	X	X	X	X				
3 B0V8J6	Water	4-14-99	1013	X	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Reece Nielson/R. Nielson	4/14/99 1545	Ref. 1A	4/14/99 1545
Ref 1A	4/15/99 1030	Reece Nielson/R. Nielson	4/15/99 1030
Reece Nielson/R. Nielson	4/15/99 1130	FedEx	
Fedex			

SPECIAL INSTRUCTIONS

** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

4235 7952 4710

7952 4732 } 2.3

4235 7952 4721

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
	[signature]	4/16/99 0930	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 2 of 3 13

Collector R. Nielson/M. Baechler	**Company Contact** Keith Maki	**Telephone No.** 373-4989	**Project Coordinator** TRENT, SJ
Price Code	**Data Turnaround** 45 Days		
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	**Sampling Location** 200 West		**SAF No.** B99-008
Ice Chest No. Sample Van, ERC96-013	**Field Logbook No.**		**Method of Shipment** RJN ~~Hand deliver~~ 4/12/99 Federal Express
Shipped To ~~TMA~~/RECRA 4/16/99 RJN	**Offsite Property No.** A990112,		**Bill of Lading/Air Bill No.** 4235952471 0, 4235952472 1
			COA R2020107600

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
Cool 4C

Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C				
Type of Container	P	P	P	P	P	aGs*				
No. of Container(s)	1	1	1	1	1	3				
Volume	20mL	125mL	500mL	500mL	1000mL	40mL				
SAMPLE ANALYSIS	Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B0V8J7	Water	4-14-99	1042	X	X	X	X	X	X				
B0V8J8	Water	4-14-99	1105	X	X	X	X	X	X				
B0V8J9	Water	4-14-99	1241	X	X	X	X	X	X				
B0V8K0	Water	4-14-99	1230	X	X	X	X	X	X				
B0V8K1	Water	4-14-99	1403	X	X	X	X	X	X				

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson / R. Nielson	4/14/99 1545	Ref. IA	4/14/99 1545
Ref IA	4/15/99 1030	Renee Nielson / R. Nielson	4/15/99 1030
Renee Nielson / R. Nielson	4/15/99 1130	Fedex	
Fedex			

SPECIAL INSTRUCTIONS
** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) (2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane)

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By: Fedex 4/16/99 0930	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-008-05	Page 3 of 3

14

Collector R. Nielson/M. Baechler	Company Contact Keith Maki Telephone No. 373-4989	Project Coordinator TRENT, SJ	Price Code Data Turnaround 45 Days
Project Designation 200-ZP-1 Process Sampling and Analysis - Bi-Weekly/Quar	Sampling Location 200 West	SAF No. B99-008	
Ice Chest No. ERC 96-043	Field Logbook No.	Method of Shipment ~~Hand deliver~~ RJN 4/12/99 Federal Express	
Shipped To ~~TMA/~~RECRA 4/15/99 RJN	Offsite Property No. A990113	Bill of Lading/Air Bill No. 423579524732	
		COA	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None	None	Cool 4C	HNO3 to pH <2	Cool 4C	HCl to pH <2 Cool 4C					
	Type of Container	P	P	P	P	P	aGs*					
	No. of Container(s)	1	1	1	1	1	3					
Special Handling and/or Storage Cool 4C	Volume	20mL	125mL	500mL	500mL	1000mL	40mL					
SAMPLE ANALYSIS		Activity Scan	pH (Water) - 9040	IC Anions - 300.0 (Nitrate)	Hardness - 130.2	BOD - 405.1	See item (1) in Special Instructions.					

Sample No.	Matrix *	Sample Date	Sample Time										
3 B0V8K2	Water	4-14-99	1425	X	X	X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Renee Nielson / R Nielson 4/14/99 1545	Date/Time	Received By: Ref. 1A	Date/Time
Relinquished By: Ref 1A 4/15/99 1030	Date/Time	Received By: Renee Nielson / R Nielson 4/15/99 1030	Date/Time
Relinquished By: Renee Nielson / Renee Nielson 4/15/99 1130	Date/Time	Received By: Fed Ex	Date/Time
Relinquished By: Fed Ex	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

** Sample analysis for nitrate by IC 300.0 and BOD by 405.1 are for information only. ERC acknowledges that the holding time may not be met.

(1) VOA - 8240A (SW-846) {2-Butanone, Acetone, Carbon tetrachloride, Chloroform, Methylenechloride, Tetrachloroethene, Trichloroethene, Trichloromonofluoromethane}

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By: Joder 4/16/99 0930	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time