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Virtual Laboratories Everywhere

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**Recra LabNet Philadelphia
Analytical Report**

Client : TNU-HANFORD C99-015
RFW# : 9901L897
SDG/SAF #: H0333/ C99-015

W.O. #: 10985-001-001-9999-00
Date Received: 01-15-99

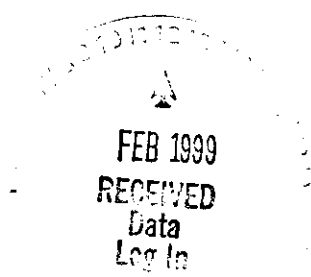
GC/MS VOLATILE

Two (2) water samples were collected on 01-13-99.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for TCL Volatile target compounds on 01-22-99.

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 temperature upon receipt has been recorded on the chain-of-custody.
2. The required analysis holding time was met
3. Non-target compounds were detected in sample B0TFV5.
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.
7. The method blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than the CRQL. The method blank also contained the target compound Chloromethane at a level less than the CRQL.



J. Michael Taylor

J. Michael Taylor

Vice President
Philadelphia Analytical Laboratory

01-08-99

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 16 pages.

12 058 2/1/99

001

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.
- N = 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).
- N = Additional qualifiers used as required are explained in the case narrative.



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.



Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 02/02/99 10:10

RFW Batch Number: 9901L897

Client: TNU-HANFORD C99-015

Work Order: 10985001001 Page: 1a

Sample Information	Cust ID:	B0TDP4	B0TDP4	B0TDP4	B0TFV5	VBLKRV	VBLKRV BS
	RFW#:	001	001 MS	001 MSD	002	99LVN010-MB1	99LVN010-MB1
	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	Toluene-d8	100 %	97 %	98 %	98 %	103 %	100 %
Recovery	Bromofluorobenzene	97 %	96 %	97 %	95 %	90 %	101 %
	1,2-Dichloroethane-d4	110 %	110 %	110 %	111 %	106 %	110 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Chloromethane		10 U	10 U	10 U	2 JB	0.4 J	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride		2 JB	2 BJ	2 BJ	4 BJ	1 J	3 JB
Acetone		10 U	10 U	10 U	4 BJ	2 J	2 JB
Carbon Disulfide		5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene		5 U	87 %	87 %	5 U	5 U	96 %
1,1-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	5 U	5 U	5 U
Chloroform		3 J	3 J	3 J	5 U	5 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone		10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride		31	25	28	5 U	5 U	5 U
Bromodichloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene		1 J	90 %	88 %	5 U	5 U	93 %
Dibromochloromethane		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Benzene		5 U	99 %	97 %	5 U	5 U	100 %
Trans-1,3-Dichloropropene		5 U	5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene		5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	5 U	5 U	5 U
Toluene		5 U	95 %	93 %	5 U	5 U	97 %

*= Outside of EPA CLP QC limits.

	Cust ID:	B0TDP4	B0TDP4	B0TDP4	B0TFV5	VBLKRV	VBLKRV BS
	RFW#:	001	001 MS	001 MSD	002	99LVN010-MB1	99LVN010-MB1
Chlorobenzene		5 U	94 %	90 %	5 U	5 U	94 %
Ethylbenzene		5 U	5 U	5 U	5 U	5 U	5 U
Styrene		5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)		5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BOTDP4

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) WATER Lab Sample ID: 9901L897-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: n012207

Level: (low/med) LOW Date Received: 01/15/99

% Moisture: not dec. _____ Date Analyzed: 01/22/99

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

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

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

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0TFV5

Lab Name: Recra, LabNet Contract: 10985001001
Lab Code: Recra Case No.: _____ SAS No.: _____ SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 9901L897-002
Sample wt/vol: 5.00 (g/mL) ML Lab File ID: n012210
Level: (low/med) LOW Date Received: 01/15/99
% Moisture: not dec. _____ Date Analyzed: 01/22/99
Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 67630	ISOPROPYL ALCOHOL	8.440	5	NJ
2.	SILANE	9.030	40	J
3. 1066406	SILANOL, TRIMETHYL-	11.372	10	NJ

Recra LabNet - Lionville Laboratory
 VOA ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD C99-015

DATE RECEIVED: 01/15/99

RFW LOT # :9901L897

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0TDP4	001	W	99LVN010	01/13/99	N/A	01/22/99
B0TDP4	001 MS	W	99LVN010	01/13/99	N/A	01/22/99
B0TDP4	001 MSD	W	99LVN010	01/13/99	N/A	01/22/99
B0TFV5	002	W	99LVN010	01/13/99	N/A	01/22/99

LAB QC:

VBLKRV	MB1	W	99LVN010	N/A	N/A	01/22/99
VBLKRV	MB1 BS	W	99LVN010	N/A	N/A	01/22/99



9901L897

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU - Hanford C99-015</u>	Refrigerator # <u>1</u>
Est. Final Proj. Sampling Date _____	#/Type Container Liquid <u>3ag</u> Solid _____
Project # <u>10985-001-001-9999-00</u>	Volume Liquid <u>40</u> Solid _____
Project Contact/Phone # _____	Preservatives <u>HCl</u>
RECRA Project Manager <u>OT</u>	ANALYSES REQUESTED →
QC <u>Spec</u> Del <u>Std</u> TAT <u>30 day</u>	
Date Rec'd <u>1/15/99</u> Date Due <u>2/14/99</u>	ORGANIC VOA BNA Pes/PCB Herb
Account # _____	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 (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only													
			MS	MSD																	
	<u>001</u>	<u>BOTDPA</u>	<u>X</u>	<u>X</u>	<u>W</u>	<u>1/13/99</u>	<u>0836</u>	<u>OTAZH</u>													
	<u>002</u>	<u>BOTFVS</u>			<u>W</u>	<u>1</u>	<u>0730</u>														

Special Instructions: Saf # C99-015
sdg # H0333

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

RECRA LabNet Use Only	
Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered _____	COC Tape was: 1) Present on Outer Package <input checked="" type="checkbox"/> or N
Airbill # <u>X</u> 2) Ambient <input checked="" type="checkbox"/> or Chilled _____	2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N
3) Received in Good Condition <input checked="" type="checkbox"/> or N	3) Present on Sample <input checked="" type="checkbox"/> or N
4) Labels Indicate Property Preserved <input checked="" type="checkbox"/> or N	4) Unbroken on Sample <input checked="" type="checkbox"/> or N
5) Received Within Holding Times <input checked="" type="checkbox"/> or N	COC Record Present Upon Sample Rec't <input checked="" type="checkbox"/> or N
	Cooler Temp. <u>4.2</u> °C

COMPOSITE WASTE

Relinquished by	Received by	Date	Time
<u>Jedee</u>	<u>Jedee</u>	<u>1/15/99</u>	<u>1500</u>

Relinquished by	Received by	Date	Time

ORIGINAL REWRITTEN

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

NOTES:
*808247150540

PNNL 897 **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** C.O.C. # **C99-015-40**

Page 1 of 1

Collector <i>FOX</i>	Contact/Requester JH KESSNER	Telephone No. MSIN FAX (509) 372-9538
SAF No. C99-015	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title 200 LIPLIAM GW JANUARY 1999	Logbook No. <i>WIM-SWL-H28 22</i>	Ice Chest No. <i>SML-160</i> Temp. <i>4°C</i>
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No. <i>423579521480</i>
Protocol CERCLA	Date Turnaround 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FAX copies of TMA & QES log-in to DL Stewart (372-1704) & JM Duncan (372-9052)
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
✓ BOTFV5		W	<i>1-13-99</i>	<i>0730</i>	3x40-mL aGs*	VOA - 8240A (TCL) ✓	HCl or H2SO4 to pH <2 Cool 4C
✓ BOTFV5		W	<i>1-13-99</i>	<i>0730</i>	1x20-mL P	Activity Scan	None

Relinquished By <i>FOX</i>	Print	Sign	Date/Time <i>1400 1/13/99</i>	Received By <i>Fed Express</i>	Print	Sign	Date/Time <i>1-13-99</i>	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By <i>Fed Ex</i>			Date/Time <i>1-14-99 11:30</i>	Received By <i>JR Cooper</i>			Date/Time <i>1-14-99 11:30</i>	
Relinquished By <i>JR Cooper</i>			Date/Time <i>1-14-99 10:30</i>	Received By <i>Fed Ex</i>			Date/Time <i>1-14-99 16:30</i>	
Relinquished By <i>Jessie</i>			Date/Time <i>1/15/99</i>	Received By <i>Jessie</i>			Date/Time <i>1/15/99 1500</i>	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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Collector RR FOX (RFS)	Contact/Requester JH KESSNER	Telephone No. MSIN FAX (509) 372-9538
SAF No. C99-015	Sampling Origin HANFORD SITE	Purchase Order/Charge Code
Project Title 200-11P1 IAM GW JANUARY 1999	Logbook No. <i>LOW. SINK - H 22</i>	Ice Chest No. SML-160 Temp. 4°C
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No. 423579521480
Protocol CERCLA	Data Turnaround 45 Days	Offsite Property No.

POSSIBLE SAMPLE HAZARDS/REMARKS
* * *

SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
FAX copies of TMA & QES log-in to DL Stewart (372-1704) & JM Duncan (372-9052).

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B0TDP4		W	<i>1-13-99</i>	<i>0836</i>	3x40-mL aGs*	VOA - 8240A (TCL) ✓	HCl or H2SO4 to pH <2 Cool 4C
B0TDP4		W	↓	↓	1x20-mL P	Activity Scan	None
B0TDP4		W	↓	↓	1x1000-mL G/P	Technetium-99	HCl to pH <2
B0TDP4		W	↓	↓	1x125-mL G/P	Total Uranium	HNO3 to pH <2

Relinquished By RR FOX (RFS)	Print	Sign <i>[Signature]</i>	Date/Time JAN 13 1999	Received By Fed Express	Print	Sign	Date/Time 1-13-99	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drums Liquid SO = Solid T = Tissue SL = Sludge WL = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fed Ex			Date/Time 1-14-99 11:30	Received By Alfonso JR. BORSO			Date/Time 1-14-99 11:30	
Relinquished By Alfonso JR. BORSO			Date/Time 1-14-99 16:30	Received By Fed Ex			Date/Time 1-14-99 16:30	
Relinquished By [Signature]			Date/Time 1/15/99	Received By [Signature]			Date/Time 1/15/99 1500	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

1/

Case Narrative

1.0 GENERAL

Bechtel Hanford Inc. Sample Delivery Group H0333 is comprised of a single liquid (water) sample designated under SAF No. C99-015 with a Project Designation of: 200-UP1 IAM GW January 1999.

The samples were received as stated on the Chain-of-Custody documents.

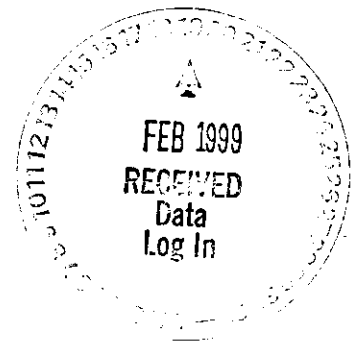
2.0 ANALYSIS NOTES

2.1 Technetium-99 Analyses

Positive Tc-99 activity was detected in the sample, however since the activity was less than the RDL and much less than the activity detected in sample B0TDP4 the activity of the blank is not a problem.

2.2 Total Uranium Analyses

The sample MDA was greater than the RDL, however, since positive uranium mass much greater than the MDA or RDL was detected in the sample the elevated MDA is not a problem.



TMA / RICHMOND

SAMPLE DELIVERY GROUP H0333

SAMPLE SUMMARY

SDG 7081
 Contact L.A. Johnson

Client Hanford
 Contract TRB-SBB-207925
 Case no SDG-H0333

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB		CHAIN OF CUSTODY	COLLECTED
				SAMPLE ID	SAF NO		
B0TDP4	HANFORD SITE	WATER		N901042-01	C99-015	C99-015-13	01/13/99 08:36
Method Blank		WATER		N901042-03	C99-015		
Lab Control Sample		WATER		N901042-02	C99-015		
Duplicate (N901042-01)	HANFORD SITE	WATER		N901042-04	C99-015		01/13/99 08:36

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CS
 Version 3.06
 Report date 02/16/99

TMA/RICHMOND
 SAMPLE DELIVERY GROUP H0333

SDG 7081
 Contact L.A. Johnson

QC SUMMARY

Client Hanford
 Contract TRB-SBB-207925
 Case no SDG-H0333

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
7081	C99-015-13	B0TDP4	WATER				01/14/99 1	N901042-01	7081-001
		Method Blank	WATER					N901042-03	7081-003
		Lab Control Sample	WATER					N901042-02	7081-002
		Duplicate (N901042-01)	WATER				01/14/99 1	N901042-04	7081-004

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 02/16/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0333

SDG 7081
 Contact L.A. Johnson

PREP BATCH SUMMARY

Client Hanford
 Contract TRB-SBB-207925
 Case no SDG-H0333

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED			QUALI-	
			BATCH	2σ %	CLIENT	MORE	RE		BLANK
Beta Counting									
TC	WATER	Technetium 99 in Water	2857-138	10.0	1		1	1	1/1
Kinetic Phosphorimetry									
U_T	WATER	Uranium, Total in Water	2857-138	9.0	1		1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 02/16/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0333

SDG 7081
 Contact L.A. Johnson

Client Hanford
 Contract TRB-SBB-207925
 Case no SDG-H0333

WORK SUMMARY

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	SUF-							
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
B0TDP4		N901042-01	7081-001	TC		02/06/99	02/17/99	DER	Technetium 99 in Water	
HANFORD SITE	WATER	01/13/99	7081-001	U_T		02/04/99	02/17/99	DER	Uranium, Total in Water	
C99-015-13	C99-015	01/14/99								
Method Blank		N901042-03	7081-003	TC		02/06/99	02/17/99	DER	Technetium 99 in Water	
	WATER		7081-003	U_T		02/04/99	02/17/99	DER	Uranium, Total in Water	
	C99-015									
Lab Control Sample		N901042-02	7081-002	TC		02/06/99	02/17/99	DER	Technetium 99 in Water	
	WATER		7081-002	U_T		02/04/99	02/17/99	DER	Uranium, Total in Water	
	C99-015									
Duplicate (N901042-01)		N901042-04	7081-004	TC		02/06/99	02/17/99	DER	Technetium 99 in Water	
HANFORD SITE	WATER	01/13/99	7081-004	U_T		02/04/99	02/17/99	DER	Uranium, Total in Water	
	C99-015	01/14/99								

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
TC	C99-015	Technetium 99 in Water	TC99TRLSC	1			1	1	1		4
U_T	C99-015	Uranium, Total in Water	UKPA	1			1	1	1		4
TOTALS				2			2	2	2		8

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CWS
 Version 3.06
 Report date 02/16/99

TMA / RICHMOND
SAMPLE DELIVERY GROUP H0333

N901042-03

Method Blank

METHOD BLANK

SDG 7081 Client/Case no Hanford SDG-H0333
Contact L.A. Johnson Case no TRB-SBB-207925
Lab sample id N901042-03 Client sample id Method Blank
Dept sample id 7081-003 Material/Matrix WATER
SAF No C99-015

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Technetium 99	14133-76-7	<u>11.7</u>	1.4	2.7	15	J	TC
Total Uranium (ug/L)	7440-61-1	0	0.003	0.006	0.10	U	U_T

200-UP1 IAM GW JANUARY 1999

QC-BLANK 30018

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 02/16/99

TMA/RICHMOND
 SAMPLE DELIVERY GROUP H0333

N901042-02

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7081</u>	Client/Case no <u>Hanford</u>	<u>SDG-H0333</u>
Contact <u>L.A. Johnson</u>	Case no <u>TRB-SBB-207925</u>	
Lab sample id <u>N901042-02</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7081-002</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>C99-015</u>	

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Technetium 99	336	8.8	2.8	15	B	TC	327	13	103	83-117	80-120
Total Uranium (ug/L)	88.0	16	0.065	0.10		U_T	82.5	3.3	107	67-133	80-120

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QC-LCS 30017

LAB CONTROL SAMPLES

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SUMMARY DATA SECTION

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Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>02/16/99</u>

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0333

DUPLICATE

N901042-04

B0TDP4

SDG <u>7081</u>	Client/Case no <u>Hanford</u>	<u>SDG-H0333</u>
Contact <u>L.A. Johnson</u>	Case no <u>TRB-SBB-207925</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>N901042-04</u>	Lab sample id <u>N901042-01</u>	Client sample id <u>B0TDP4</u>
Dept sample id <u>7081-004</u>	Dept sample id <u>7081-001</u>	Location/Matrix <u>HANFORD SITE</u> <u>WATER</u>
	Received <u>01/14/99</u>	Collected <u>01/13/99 08:36</u>
		Custody/SAF No <u>C99-015-13</u> <u>C99-015</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
Technetium 99	29000	230	<u>17</u>	15	B	TC	28900	220	15	B	0	21	
Total Uranium (ug/L)	952	180	<u>0.65</u>	0.10		U_T	952	180	<u>0.65</u>		0	44	

200-UP1 IAM GW JANUARY 1999

QC-DUP#1 30019

DUPLICATES

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Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>02/16/99</u>

TMA / RICHMOND
 SAMPLE DELIVERY GROUP H0333

N901042-01

B0TDP4

DATA SHEET

SDG 7081 Client/Case no Hanford SDG-H0333
 Contact L.A. Johnson Case no TRB-SBB-207925
 Lab sample id N901042-01 Client sample id B0TDP4
 Dept sample id 7081-001 Location/Matrix HANFORD SITE WATER
 Received 01/14/99 Collected 01/13/99 08:36
 Custody/SAF No C99-015-13 C99-015

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Technetium 99	14133-76-7	28900	220	15	15	B	TC
Total Uranium (ug/L)	7440-61-1	952	180	<u>0.65</u>	0.10		U_T

200-UP1 IAM GW JANUARY 1999

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-DS
 Version 3.06
 Report date 02/16/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0333

METHOD SUMMARY

TECHNETIUM 99 IN WATER

BETA COUNTING

Test TC Matrix WATER
 SDG 7081
 Contact L.A. Johnson

Client Hanford
 Contract TRB-SBB-207925
 Case no SDG-H0333

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	Technetium PLANCHET	99
Preparation batch 2857-138					
BOTDP4	N901042-01	7081-001		28900	
BLK (QC ID=30018)	N901042-03	7081-003		<u>11.7</u>	J
LCS (QC ID=30017)	N901042-02	7081-002		ok	
Duplicate (N901042-01)	N901042-04	7081-004		ok	
Nominal values and limits from method					
200-UP1 IAM GW JANUARY 1999			RDLs (pCi/L)	15	

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EPF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 2857-138 2σ prep error 10.0 % Reference Lab Notebook #2857 pg. 138																
BOTDP4	N901042-01			15	<u>0.0500</u>			53	101				24	02/03/99	02/06	GRB-201
BLK (QC ID=30018)	N901042-03			2.7	0.200			64	101					02/03/99	02/06	GRB-203
LCS (QC ID=30017)	N901042-02			2.8	0.200			67	101					02/03/99	02/06	GRB-202
Duplicate (N901042-01)	N901042-04			<u>17</u>	<u>0.0500</u>			45	101				24	02/03/99	02/06	GRB-204
(QC ID=30019)																
Nominal values and limits from method																
				15	0.200			20-105	50			180				

PROCEDURES REFERENCE TC99TRLSC
 EP-020 Sample Leach For Technetium-99, rev 0
 EP-540 Technetium-99 Purification, rev 0

AVERAGES ± 2 SD MDA 9.4 ± 15
 FOR 4 SAMPLES YIELD 57 ± 20

Lab id TMANC
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 02/16/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0333

METHOD SUMMARY

URANIUM, TOTAL IN WATER
KINETIC PHOSPHORIMETRY

Test U T Matrix WATER
SDG 7081
Contact L.A. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Total Uranium
Preparation batch 2857-138					
B0TDP4	N901042-01	7081-001			952
BLK (QC ID=30018)	N901042-03	7081-003			U
LCS (QC ID=30017)	N901042-02	7081-002			ok
Duplicate (N901042-01)	N901042-04	7081-004			ok
Nominal values and limits from method RDLs (ug/L) 0.10					
200-UP1 IAM GW JANUARY 1999					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA ug/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 2857-138 2σ prep error 9.0 % Reference Lab Notebook #2857 pg. 138															
B0TDP4	N901042-01			<u>0.65</u>	0.0200								22	02/04/99	KPA-001
BLK (QC ID=30018)	N901042-03			0.006	0.0200									02/04/99	KPA-001
LCS (QC ID=30017)	N901042-02			0.065	0.0200									02/04/99	KPA-001
Duplicate (N901042-01)	N901042-04			<u>0.65</u>	0.0200								22	02/04/99	KPA-001
	(QC ID=30019)														
Nominal values and limits from method 0.10 0.0200 180															

PROCEDURES	REFERENCE	UKPA
	EP-040	Environmental Water Dissolution, rev 1
	EP-044	Preparation of Total Uranium by Kinetic Phosphorimetry, rev 1
	EP-928	Total Uranium by Kinetic Phosphorimetry, rev 0

AVERAGES ± 2 SD	MDA <u>0.34</u> ± <u>0.71</u>
FOR 4 SAMPLES	YIELD _____ ± _____

TMA / RICHMOND
SAMPLE DELIVERY GROUP H0333

SDG 7081
Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRE-SBB-207925
Case no SDG-H0333

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/16/99

SDG 7081
Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Form DVD-RG
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SDG 7081
Contact L.A. Johnson

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Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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SDG 7081
Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity).

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SUMMARY DATA SECTION

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GUIDE, cont.

Client Hanford
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Case no SDG-H0333

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

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Contact L.A. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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SDG 7081
Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits

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SDG 7081
Contact L.A. Johnson

GUIDE, cont.

Client Hanford
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MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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SAMPLE DELIVERY GROUP H0333

SDG 7081
Contact L.A. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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SAMPLE DELIVERY GROUP H0333

SDG 7081
Contact L.A. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Preparation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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SAMPLE DELIVERY GROUP H0333

SDG 7081
Contact L.A. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES

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SUMMARY DATA SECTION

Page 26

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/16/99

TMA / RICHMOND
SAMPLE DELIVERY GROUP H0333

SDG 7081
Contact L.A. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0333

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

PNNL

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

C99-015-13

Page 1 of 1

Collector RR FOX (RFS)	Contact/Requester JH KESSNER	Telephone No. (509) 372-9538	MSIN FAX
SAF No. C99-015	Sampling Origin HANFORD SITE	Purchase Order/Charge Code	
Project Title 200-UP1 IAM.GW. JANUARY 1999	Logbook No. W12-512L-1422	Ice Chest No. SML-160	Temp. 4 °C
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No. 423579521480	
Protocol CERCLA	Data Turnaround 45 Days	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS	SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FAX copies of TMA & QES log-in to DL Stewart (372-1704) & JM Duncan (372-9052).
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
✓ B0TDP4		W	1-13-99	0836	3x40-mL aGs*	VOA - B240A (TCL) ✓	HCl or H2SO4 to pH <2 Cool 4C
✓ B0TDP4		W	↓	↓	1x20-mL P	Activity Scan	None
✓ B0TDP4		W	↓	↓	1x1000-mL G/P	Technetium-99	HCl to pH <2
✓ B0TDP4		W	↓	↓	1x125-mL G/P	Total Uranium	HNO3 to pH <2

Relinquished By RR FOX (RFS)	Print 	Sign 1460	Date/Time JAN 13 1999	Received By Fed Express	Print 1-13-99	Sign	Date/Time	Matrix * S = Soil DS = Drum Solid SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wine W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By Fed Ex			Date/Time 1-14-99 11:30	Received By JR CORSO JR CORSO			Date/Time 1-14-99 11:30	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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