

H0574-TMA/REIRA

0072578

Thermo Retec  
W.O. No. N9-10-111-7242

Bechtel Hanford Inc.  
SDG H0574 (Revision 01)

Case Narrative

Page 1 of 1

## 1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H0574 is composed of three liquid (water) samples designated under SAF No. C00-002 with a Project Designation of: 200 UP1IAM GW Monitoring, October 1999.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Thermo Retec Sample Receipt Checklist. The results were transmitted to BHI via facsimile on December 18, 1999. The corrected data due to changes made in sample aliquots was transmitted to BHI via facsimile on February 22, 2000.

## 2.0 ANALYSIS NOTES

### 2.1 Technetium-99 Analyses

No problems were encountered during the analyses. The original data was calculated with an incorrect aliquot of 50 ml per sample instead of 10 ml per sample. Technetium-99 greater than the RDL was detected in all samples.

**RECEIVED**  
APR 11 2000

**EDMC**



TMA/RICHMOND

SAMPLE DELIVERY GROUP H0574

SAMPLE SUMMARY

SDG 7242  
 Contact Melissa C. Marrison

Client Hanford  
 Contract TRB-SBB-207925  
 Case no SDG H0574

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB		CHAIN OF CUSTODY	COLLECTED
				SAMPLE ID	SAF NO		
BOWKR6	HANFORD SITE	WATER		N910111-02	C00-002	C00-002-12	10/11/99 09:30
BOWKT3	HANFORD SITE	WATER		N910111-03	C00-002	C00-002-19	10/11/99 08:39
BOWLMI	HANFORD SITE	WATER		N910111-01	C00-002	C00-002-28	10/11/99 08:39
Method Blank		WATER		N910111-05	C00-002		
Lab Control Sample		WATER		N910111-04	C00-002		
Duplicate (N910111-01)	HANFORD SITE	WATER		N910111-06	C00-002		10/11/99 08:39

SAMPLE SUMMARY

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SUMMARY DATA SECTION

Page 3

Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-CS  
 Version 3.06  
 Report date 02/22/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0574

SDG 7242  
 Contact Melissa C. Mannion

Client Hanford  
 Contract TRB-SBB-207925  
 Case no SDG H0574

QC SUMMARY

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7242	C00-002-12	B0WKR6	WATER				10/15/99	4	N910111-02	7242-002
	C00-002-19	B0WKT3	WATER				10/15/99	4	N910111-03	7242-003
	C00-002-28	B0WLM1	WATER				10/15/99	4	N910111-01	7242-001
		Method Blank	WATER						N910111-05	7242-005
		Lab Control Sample	WATER						N910111-04	7242-004
		Duplicate (N910111-01)	WATER				10/15/99	4	N910111-06	7242-006

Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 02/22/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0574

SDG 7242  
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford  
Contract TRB-SBB-207925  
Case no SDG H0574

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI-
			BATCH	2σ %	CLIENT	MORE	RE	BLANK	
Beta Counting									
TC	WATER	Technetium 99 in Water	6904-118	10.0	3		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 02/22/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0574

SDG 7242  
Contact Melissa C. Mannion

Client Hanford  
Contract TRB-SBB-207925  
Case no SDG H0574

WORK SUMMARY

CLIENT SAMPLE ID	LAB SAMPLE ID	LOCATION	MATRIX	COLLECTED	SUP-	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
CUSTODY	SAF No	RECEIVED	PLANCHET								
B0WKR6	N910111-02	7242-002		TC		12/10/99	02/22/00	MCM	Technetium 99 in Water		
HANFORD SITE		10/11/99	WATER								
C00-002-12	C00-002	10/15/99									
B0WKT3	N910111-03	7242-003		TC		12/13/99	02/22/00	MCM	Technetium 99 in Water		
HANFORD SITE		10/11/99	WATER								
C00-002-19	C00-002	10/15/99									
B0WLM1	N910111-01	7242-001		TC		12/13/99	02/22/00	MCM	Technetium 99 in Water		
HANFORD SITE		10/11/99	WATER								
C00-002-28	C00-002	10/15/99									
Method Blank	N910111-05	7242-005		TC		12/13/99	02/22/00	MCM	Technetium 99 in Water		
			WATER								
	C00-002										
Lab Control Sample	N910111-04	7242-004		TC		12/13/99	02/22/00	MCM	Technetium 99 in Water		
			WATER								
	C00-002										
Duplicate (N910111-01)	N910111-06	7242-006		TC		12/13/99	02/22/00	MCM	Technetium 99 in Water		
HANFORD SITE		10/11/99	WATER								
	C00-002	10/15/99									

COUNTS OF TESTS BY SAMPLE TYPE											
TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
TC	C00-002	Technetium 99 in Water	TC99TRLSC	3			1	1	1		6
TOTALS				3			1	1	1		6

Lab id TMANC  
Protocol Hanford  
Version Ver 1.0  
Form DVD-CWS  
Version 3.06  
Report date 02/22/00





**TMA/RICHMOND**  
SAMPLE DELIVERY GROUP H0574

N910111-06

BOWLMI

**DUPLICATE**

SDG <u>7242</u>		Client/Case no <u>Hanford</u>	SDG <u>H0574</u>
Contact <u>Melissa C. Mannion</u>		Case no <u>TRB-SBB-207925</u>	
DUPLICATE	ORIGINAL		
Lab sample id <u>N910111-06</u>	Lab sample id <u>N910111-01</u>	Client sample id <u>BOWLMI</u>	
Dept sample id <u>7242-006</u>	Dept sample id <u>7242-001</u>	Location/Matrix <u>HANFORD SITE</u>	<u>WATER</u>
	Received <u>10/15/99</u>	Collected <u>10/11/99 08:39</u>	
		Custody/SAF No <u>C00-002-28</u>	<u>C00-002</u>

ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	PROT
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS		TEST	pCi/L	(COUNT)	pCi/L	FIERS	%
Technetium 99	1480	110	<u>89</u>	15		TC	1540	130	<u>100</u>	4	27	

20CUF1IAM GW MONITORING OCTOBER 1999

QC-DUP#1 32537

DUPLICATES

Page 1

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-DUP</u>
Version <u>3.06</u>
Report date <u>02/22/00</u>

TMA / RICHMOND  
SAMPLE DELIVERY GROUP H0574

N910111-02

BOWKR6

DATA SHEET

SDG <u>7242</u>	Client/Case no <u>Hanford</u>	SDG <u>H0574</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRB-SBB-207925</u>	
Lab sample id <u>N910111-02</u>	Client sample id <u>BOWKR6</u>	
Dept sample id <u>7242-002</u>	Location/Matrix <u>HANFORD SITE</u>	<u>WATER</u>
Received <u>10/15/99</u>	Collected <u>10/11/99 09:30</u>	
	Custody/SAF No <u>C00-002-12</u>	<u>C00-002</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Technetium 99	14133-76-7	13300	250	<u>44</u>	15		TC

200UP1IAM GW MONITORING OCTOBER 1999

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/00</u>

TMA / RICHMOND  
SAMPLE DELIVERY GROUP H0574

N910111-03

BOWKT3

DATA SHEET

SDG <u>7242</u>	Client/Case no <u>Hanford</u>	SDG <u>H0574</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRB-SFB-207925</u>	
Lab sample id <u>N910111-03</u>	Client sample id <u>BOWKT3</u>	
Dept sample id <u>7242-003</u>	Location/Matrix <u>HANFORD SITE</u>	<u>WATER</u>
Received <u>10/15/99</u>	Collected <u>10/11/99 08:39</u>	
	Custody/SAF No <u>C00-002-19</u>	<u>C00-002</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Technetium 99	14133-76-7	1420	98	<u>.85</u>	15		TC

200UP1IAM GW MONITORING OCTOBER 1999

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/00</u>

TMA / RICHMOND  
SAMPLE DELIVERY GROUP H0574

N910111-01

BOWLM1

DATA SHEET

SDG <u>7242</u>	Client/Case no <u>Hanford</u>	SDG <u>H0574</u>
Contact <u>Melissa C. Mannion</u>	Contract <u>TRB-SBB-207925</u>	
Lab sample id <u>N910111-01</u>	Client sample id <u>BOWLM1</u>	
Dept sample id <u>7242-001</u>	Location/Matrix <u>HANFORD SITE</u>	<u>WATER</u>
Received <u>10/15/99</u>	Collected <u>10/11/99 08:39</u>	
	Custody/SAF No <u>C00-002-28</u>	<u>C00-002</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Technetium 99	14133-76-7	1540	130	<u>100</u>	15		TC

200UP11AM GW MONITORING OCTOBER 1999

Lab id <u>TMANC</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/22/00</u>

TMA/RICHMOND  
 SAMPLE DELIVERY GROUP H0574

METHOD SUMMARY  
 TECHNETIUM 99 IN WATER  
 BETA COUNTING

Test TC Matrix WATER  
 SDG 7242  
 Contact Melissa C. Mannion

Client Hanford  
 Contract TRB-SBB-207925  
 Contract SDG H0574

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUP-FIX	PLANCHET	Technetium 99
Preparation batch 6904-118					
BOWKR6	N910111-02	7242-002			13300
BOWKT3	N910111-03	7242-003			1420
BOWLM1	N910111-01	7242-001			1540
BLK (QC ID=32536)	N910111-05	7242-005			U
LCS (QC ID=32535)	N910111-04	7242-004			ok
Duplicate (N910111-01)	N910111-06	7242-006			ok

Nominal values and limits from method RDLs (pCi/L) 15  
 2000P11AM GW MONITORING OCTOBER 1999

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUP-FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 6904-118 2σ prep error 10.0 % Reference Lab Notebook 6904 pg. 118															
BOWKR6	N910111-02			<u>44</u>	0.0100			78		101			60	12/08/99	12/10 GRB-224
BOWKT3	N910111-03			<u>85</u>	0.0100			68		51			63	12/08/99	12/13 GRB-225
BOWLM1	N910111-01			<u>100</u>	0.0100			50		51			63	12/08/99	12/13 GRB-228
BLK (QC ID=32536)	N910111-05			<u>63</u>	0.0100			54		103				12/08/99	12/13 GRB-230
LCS (QC ID=32535)	N910111-04			<u>180</u>	0.0100			56		<u>17</u>				12/08/99	12/13 GRB-221
Duplicate (N910111-01) (QC ID=32537)	N910111-06			<u>99</u>	0.0100			59		51			63	12/08/99	12/13 GRB-227

Nominal values and limits from method 15 0.0100 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 94 ± 94  
 FOR 6 SAMPLES YIELD 61 ± 21

Lab id TMANC  
 Protocol Hanford  
 Version Ver 1.0  
 Form DVD-CMS  
 Version 3.06  
 Report date 02/22/00



Collector <b>R.T SICKLE</b>	Contact/Requester JL KESSNER	Telephone No. (509) 375-4688	MSIN	FAX
SAF No. C00-002	Sampling Origin HANFORD SITE	Purchase Order/Charge Code		
Project Title 200UPHAM GW MONITORING, OCTOBER 1999	Logbook No. <i>Wm - SML H 29, PAGE 73</i>	Ice Chest No. <i>5021-87</i>	Temp. <i>cool 4°C</i>	
Shipped To (Lab) TMA/RECRA	Method of Shipment GOVT VEHICLE	Bill of Lading/Air Bill No. <i>4235 7953 0495</i>		
Protocol CERCLA	Data Turnaround 45 Days	Offsite Property No.		

<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** **	<b>SPECIAL INSTRUCTIONS</b> Hold Time      Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FAX copies of TMA log-in to DL Stewart (372-1704) & JH Kessner (372-9487)
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Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
✓ B0WKR6		W	<i>10-11-99</i>	<i>0930</i>	1x20-mL P	Activity Scan	None
✓ B0WKR6		W	↓	↓	1x1000-mL G/P	Techritium-99	HCl to pH <2

Relinquished By <b>R.T SICKLE</b> <i>[Signature]</i>	Print	Date/Time <i>10-14-99 1400</i>	Received By <b>Fed Ex</b>	Print	Date/Time <i>10/14/99</i>	<b>Matrix *</b> 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 <b>Fed Ex</b>		Date/Time <i>10/15/99 10:00</i>	Received By <b>TNU McGoldenberg</b>		Date/Time <i>10/15/99 10:00</i>	
Relinquished By		Date/Time	Received By		Date/Time	
Relinquished By		Date/Time	Received By		Date/Time	

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

PNNL SAMPLE RECEIPT

Client: Buehler/Hanford Inc Date/Time received 10-15-99 10:00  
CoC No. C00-002-12, 19, 28  
Container I.D. No. SME-446 Requested TAT (Days) 45 P.O. Received Yes [ ] No []

INSPECTION

- 1. Custody seals on shipping container intact? Yes [] No [ ] N/A [ ]
- 2. Custody seals on shipping container dated & signed? Yes [] No [ ] N/A [ ]
- 3. Custody seals on sample containers intact? Yes [] No [ ] N/A [ ]
- 4. Custody seals on sample containers dated & signed? Yes [] No [ ] N/A [ ]
- 5. Cooler Temperature: \_\_\_\_\_ Packing material is: Wet [ ] Dry []
- 6. Number of samples in shipping container: 6
- 7. Number of containers per sample: \_\_\_\_\_ (Or see CoC ✓)
- 8. Paperwork agrees with samples? Yes [] No [ ]
- 9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels []
- 10. Samples are: In good condition [] Leaking [ ] Broken Container [ ] Missing [ ]
- 11. Describe any anomalies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
- 14. Received by M. Goldenberg Date: 10-15-99 Time: 10:00

LOGIN

TNU W.O. No. \_\_\_\_\_ Group No. \_\_\_\_\_ Client W.O. No. \_\_\_\_\_

PROGRAM MANAGER

Sample holding times exceeded? Yes [ ] No [ ]

Client Notified: Name \_\_\_\_\_ Date/time \_\_\_\_\_