

Environmental
Restoration
Contractor

ERC Team

Interoffice Memorandum



029882

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Job No. 22192

Written Response Required? NO
Closes CCN: N/A
OU: 200-UP-1
TSD: N/A
ERA: N/A
Subject Code: 8630

45099

TO: C. D. Wittreich, H9-12

DATE: April 16, 1996

COPIES: See Below

FROM: Duane Jacques
Analytical Services/Field Services
H9-10/372-9400

SUBJECT: **200-UP-1 IRM IMPLEMENTATION SAMPLING, MONTHLY GROUNDWATER RESULTS, MARCH 1996, REV 0**

REFERENCES:

1. BHI, 1995a, *Field Screening (On-Site Measurements) Quality Assurance Plan*, BHI-EE-08, Bechtel Hanford, Inc., Richland, Washington.
2. BHI, 1995b, *Field Screening Procedures*, BHI-EE-05, Bechtel Hanford, Inc., Richland, Washington.
3. BHI, 1995, *200-UP-1 Field Screening Support Logbook*, EL-1277, Bechtel Hanford, Inc., Richland, Washington.

This data package contains field screening results for groundwater samples analyzed to support the 200-UP-1 IRM Implementation Sampling program. The Quality Assurance level for this work corresponds to QA-2 as specified in the reference 1 (BHI 1995a). The samples were managed under SAF B96-059.

Attachment 1 contains Volatile Organic Compound (VOC), total uranium, and technetium-99 results for groundwater samples collected to support the referenced project. The VOC results were generated using a Photovac 10S Plus portable gas chromatograph operated in accordance with Field Screening Procedure (FSP) 1.1, *Aqueous Headspace Analysis of Volatile Organic Compounds in Water* (BHI 1995b). Information concerning operation of the gas chromatograph is contained in the instrument logbook EL-1269.

The total uranium results were generated using a ChemChek KPA-11a Kinetic Phosphorescence Analyzer operated in accordance with FSP 1.22, *Kinetic Phosphorescence Analysis of Total Uranium in Water* (BHI 1995b). Information concerning use of the ChemChek KPA-11a as well as preparation of VOC calibration standards and samples is contained in the referenced field logbook EL-1277, pages 84 through 89.

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The technetium-99 analyses were conducted at the 222-S Laboratory. The results are included in this data package for information only. Questions concerning the analyses and results should be directed to the laboratory.

Please contact me if you have any questions on this information.



Duane Jacques, Scientist

QA Review by: Paul E. Wierksen

IDJ: idj

Attachments:

- Attachment 1. 200-UP-1 IRM Implementation Sampling, Monthly Groundwater Results, March 1996
- Attachment 2. Sample Chain of Custody Sheets
- Attachment 3. Headspace Gas Chromatography Checklist(s)

Copies:

- C. W. Denslow, H9-02, w/attachment 1 only
- A. Hopkins, H9-11, w/attachment 1 only
- J. A. Lerch, B1-35, w/a
- D. A. Myers, H9-11, w/attachment 1 only
- R. O. Mahood, H9-11, w/attachment 1 only
- W. S. Thompson, N1-28, w/attachment 1 only
- BHI Document Control, H4-79, w/a

200-UP-1 IRM Implementation Sampling
Monthly Groundwater Results, March 1996
SAF B96-059

Sample Location	HEIS Number	Sample Date	Analysis Date (VOA)	Chloroform (µg/L)	Carbon TetraCl (µg/L)	TCE (µg/L)	Uranium (µg/L)	Technetium-99 (pCi/L)
299-W19-3	BOH8Q3	3/27/96	3/29/96	NA	NA	NA	NA	< 76
299-W19-3	BOH8Q4	3/27/96	3/28/96	6.4	306	< 2.0	925	NA
299-W19-20	BOH8Q5	3/27/96	3/29/96	NA	NA	NA	NA	7980
299-W19-20	BOH8Q6	3/27/96	3/28/96	5.8	130	6.0	1320	NA
299-W19-23	BOH8Q7	3/28/96	3/29/96	NA	NA	NA	NA	24300
299-W19-23	BOH8Q8	3/28/96	4/4/96	6.1	190	3.5	672	NA
299-W19-24	BOH8Q9	3/29/96	3/30/96	NA	NA	NA	NA	12800
299-W19-24	BOH8R0	3/29/96	4/4/96	< 4.0	120	5.7	2520	NA
299-W19-28	BOH8R1	3/28/96	3/29/96	NA	NA	NA	NA	5600
299-W19-28	BOH8R2	3/28/96	4/4/96	< 4.0	7.0	< 2.0	816	NA
299-W19-29	BOH8R3	3/28/96	3/29/96	NA	NA	NA	NA	493
299-W19-29	BOH8R4	3/28/96	4/4/96	< 4.0	6.7	< 2.0	111	NA
299-W19-30	BOH8R5	3/27/96	3/29/96	NA	NA	NA	NA	21800
299-W19-30	BOH8R6	3/27/96	3/28/96	< 4.0	77	< 2.0	708	NA
299-W19-30	BOH8S7	3/27/96	3/29/96	NA	NA	NA	NA	21500
299-W19-30	BOH8S8	3/27/96	3/28/96	< 4.0	81	< 2.0	686	NA
299-W19-34A	BOH8R7	3/28/96	3/29/96	NA	NA	NA	NA	472
299-W19-34A	BOH8R8	3/28/96	4/4/96	< 4.0	54	4.7	1.0	NA
299-W19-35	BOH8R9	3/27/96	3/29/96	NA	NA	NA	NA	538
299-W19-35	BOH8S0	3/27/96	3/28/96	< 4.0	150	9.5	80	NA
299-W19-37	BOH8S1	3/29/96	3/30/96	NA	NA	NA	NA	8390
299-W19-37	BOH8S2	3/29/96	4/4/96	< 4.0	78	3.0	3220	NA
299-W19-38	BOH8S3	4/8/96	4/12/96	NA	NA	NA	NA	218
299-W19-38	BOH8S4	4/8/96	4/8/96	36	10	< 2.0	52	NA
299-W19-40	BOH8S5	3/29/96	3/30/96	NA	NA	NA	NA	873
299-W19-40	BOH8S6	3/29/96	4/4/96	< 4.0	25	< 2.0	190	NA
Field Blank @ 299-W19-30	BOH8S9	3/27/96	3/29/96	NA	NA	NA	NA	1760
Field Blank @ 299-W19-30	BOH8T0	3/27/96	3/28/96	< 4.0	< 2.0	< 2.0	< 0.50	NA
Trip Blank	BOH8T1	3/27/96	3/28/96	< 4.0	< 2.0	< 2.0	NA	NA
Trip Blank	BOH8T2	3/28/96	4/4/96	< 4.0	< 2.0	< 2.0	NA	NA
Trip Blank	BOH8T3	3/29/96	4/4/96	< 4.0	< 2.0	< 2.0	NA	NA
Trip Blank	BOH8T4	4/8/96	4/8/96	< 4.0	< 2.0	< 2.0	NA	NA

NA - Not Analyzed

u - Value less than practical quantitation limit

Analyst:

Duane Jacques
 I. D. Jacques

VOA Instrument: Photovac 10S Plus GC, Serial # BJDG203
 Method: 5 mL/min HP Air, 11.7 eV lamp, 250 uL injection
 Logbook: Photovac Instrument Log, EL-1269, pgs 33 - 35

Uranium Instrument: ChemChek KPA-11a, Serial # 9445050065
 Method: Kinetic Phosphorescence
 Logbook: 200-UP-1 Project Log, EL-1277, pgs 87 - 88

Bechtel Hanford, Inc. **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Data Turnaround
 Priority
 Normal

Collector <i>A. Rizzo / M. Mehlhorn</i>	Company Contact C. D. Wittreich	Telephone (509) 372-9315
Project Designation 200-UP-1 IRM Implementation Sampling - 2nd Quarter 1996, Mar	Sampling Location 200 West	SAF No. B96-059
Ice Chest No.	Field Logbook No. <i>EFL-1135</i>	Method of Shipment Hand Delivered
Shipped To Duane Jacques	Offsite Property No. NA	Bill of Lading/Air Bill No. NA

Possible Sample Hazards/Remarks	Preservation	Cool 4°C	HCl																
	Type of Container	P/G	Gs																
	No. of Container(s)	1	1																
Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	20mL	40mL																
SAMPLE ANALYSIS				Total Uranium	VOA - TCL														

Sample No.	Matrix*	Date Sampled	Time Sampled																
BOH8RO	W	3-29-96	0930	X	X														
BOH8SZ	W	3-29-96	1015	X	X														
BOH8T3	W	3-29-96	0730		X														
BOH8SG	W	3-29-96	1055	X	X														

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS	Matrix*
Relinquished By <i>M. Mehlhorn</i>	Date/Time <i>3-29-96 1400</i>	Received By <i>K. Trapp</i>	Date/Time <i>3/29/96 1400</i>
Relinquished By <i>K. Trapp</i>	Date/Time <i>4/4/96 0900</i>	Received By <i>D. Jacques</i>	Date/Time <i>4-4-96</i>
Relinquished By <i>D. Jacques</i>	Date/Time <i>4-4-96</i>	Received By <i>Duane Jacques</i>	Date/Time <i>4/4/96 0850</i>
Relinquished By	Date/Time	Received By	Date/Time

Hold all samples at 4701-C until project is completed. Then deliver to Duane Jacques.

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

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

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Data Turnaround
 Priority
 Normal

Collector <i>A. Rizzo</i>	Company Contact C. D. Wittreich	Telephone (509) 372-9315
Project Designation 200-UP-1 IRM Implementation Sampling - 2nd Quarter 1996, Mar	Sampling Location 200 West	SAF No. B96-059
Ice Chest No.	Field Logbook No. <i>ER-1135</i>	Method of Shipment Hand Delivered
Shipped To Duane Jacques	Offsite Property No. NA	Bill of Lading/Air Bill No. NA

Possible Sample Hazards/Remarks	Preservation	Cool 4°C	HCl																
	Type of Container	P/G	Ge																
	No. of Container(s)	1	1																
	Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	20mL	40mL															

SAMPLE ANALYSIS

Total Uranium
VOA - TCL

Sample No.	Matrix*	Date Sampled	Time Sampled																
BOH8S4	W	4.8.96	0745	X	X														
BOH874	W	4.8.96	0530		X														

CHAIN OF POSSESSION	Sign/Print Names		
	Relinquished By <i>AGR</i>	Date/Time 4.8.96 0745	Received By <i>Duane Jacques</i>
	Relinquished By <i>AGR (ER)</i>	Date/Time	Received By <i>Duane Jacques</i>
	Relinquished By	Date/Time	Received By

SPECIAL INSTRUCTIONS
 Hold all samples at 4701-C until project is completed. Then deliver to Duane Jacques.

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

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

Bechtel Hanford, Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Data Turnaround <input type="checkbox"/> Priority <input checked="" type="checkbox"/> Normal
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Collector <i>A. Rizzo / M. Mehlhorn</i>	Company Contact C. D. Wittreich	Telephone (509) 372-9315
Project Designation 200-UP-1 IRM Implementation Sampling - 2nd Quarter 1996, Mar	Sampling Location 200 West	SAF No. B96-059
Ice Chest No.	Field Logbook No. <i>EFL-1135</i>	Method of Shipment Hand Delivered
Shipped To Duane Jacques	Offsite Property No. NA	Bill of Lading/Air Bill No. NA

Possible Sample Hazards/Remarks	Preservation	Cool 4°C	HCl							
	Type of Container	P/G	Gs							
	No. of Container(s)	1	1							
	Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	20mL	40mL						
SAMPLE ANALYSIS				Total Uranium	VOA - TCL					

Sample No.	Matrix*	Date Sampled	Time Sampled							
✓ BOH8R2	W	3-28-96	0950	X	X					
✓ BOH8T2	W	3-28-96	0230		X					
✓ BOH8R4	W	3-28-96	1022	X	X					
✓ BOH8R8	W	3-28-96	1144	X	X					
✓ BOH8Q8	W	3-28-96	1310	X	X					

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS Hold all samples at 4701-C until project is completed. Then deliver to Duane Jacques.	Matrix*
Relinquished By <i>M. Mehlhorn</i>	Date/Time 3-29-96 1400	Received By <i>K. Traub / K. Traub</i>	Date/Time 3-29-96 1400
Relinquished By <i>K. Traub</i>	Date/Time 4-4-96 0900	Received By <i>D. Jacques</i>	Date/Time 4-4-96 0800
Relinquished By <i>D. Jacques</i>	Date/Time 4-4-96 0850	Received By <i>D. Jacques</i>	Date/Time 4-4-96 0850
Relinquished By	Date/Time	Received By	Date/Time

- S - Soil
- SE - Sediment
- SO - Solid
- SL - Sludge
- W - Water
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- A - Air
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- DL - Drum Liquids
- T - Tissue
- WI - Wipe
- L - Liquid
- V - Vegetation
- X - Other

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

HEADSPACE GAS CHROMATOGRAPHY CHECKLIST

1.	Date:	4/17/96
2.	a. Minimum 3 point calibration curve:	Yes; but calibration based on single standard
	b. Date 3 point minimum calibration curve was prepared:	10/25/95
3.	<u>Calibration Check Standard</u>	
	a. Check standard for each analyte:	Yes
	b. Date of analysis:	3/28/96
	c. Date of check standard:	3/28/96
	<u>Calculation Check (One Standard)</u>	
	d. Show calculation:	<p>chloroform</p> $0.70 \mu\text{L} \times 8700 \text{ mg/mL} =$ $\frac{609}{30 \text{ mL H}_2\text{O}} = 203 \text{ mg/L}$
	e. Agrees with analyst:	Yes
3.	a. Is a sample dilution required?	No; cal check is near sample cond
	b. If yes, check calculation.	NA
4.	If data has been converted from ppm to ppb or vice versa, check conversion.	NA
5.	<u>Analyte Identification</u>	
	a. Confirmed by MS:	not done
	b. Confirmed by second column:	not done
6.	Average temperature of laboratory during analysis:	73° F
7.	a. Reviewer's name:	PAUL E DUERKSEN
	b. Reviewer's signature:	Paul E

HEADSPACE GAS CHROMATOGRAPHY CHECKLIST

1.	Date:	4/17/96
2.	a. Minimum 3 point calibration curve:	Yes; but calibration based on single standard
	b. Date 3 point minimum calibration curve was prepared:	10/25/95
3.	<u>Calibration Check Standard</u>	
	a. Check standard for each analyte:	Yes
	b. Date of analysis:	4/4/96
	c. Date of check standard:	4/4/96
	<u>Calculation Check (One Standard)</u>	
	d. Show calculation:	carbon tet $7.5 \text{ mL} \times 780 \text{ Mg/mL} =$ $\frac{5850}{30 \text{ mL H}_2\text{O}} = 195 \text{ Mg/L}$
	e. Agrees with analyst:	Yes
3.	a. Is a sample dilution required?	No; cal check is near sample conc
	b. If yes, check calculation.	NA
4.	If data has been converted from ppm to ppb or vice versa, check conversion.	NA
5.	<u>Analyte Identification</u>	
	a. Confirmed by MS:	not done
	b. Confirmed by second column:	not done
6.	Average temperature of laboratory during analysis:	72°F
7.	a. Reviewer's name:	PAUL E DUERKSEN
	b. Reviewer's signature:	Paul E

HEADSPACE GAS CHROMATOGRAPHY CHECKLIST

1.	Date:	4/17/96
2.	a. Minimum 3 point calibration curve:	Yes; but calibration based on single standard
	b. Date 3 point minimum calibration curve was prepared:	10/25/95
3.	<u>Calibration Check Standard</u>	
	a. Check standard for each analyte:	Yes
	b. Date of analysis:	4/8/96
	c. Date of check standard:	4/8/96
	<u>Calculation Check (One Standard)</u>	
	d. Show calculation:	<p>TCE</p> $0.55 \mu\text{L} \times 1400 \text{ mg/mL} =$ $\frac{770}{30 \text{ mLH}_2\text{O}} = 26 \text{ mg/L}$
	e. Agrees with analyst:	Yes
3.	a. Is a sample dilution required?	No; cal check is near sample conc
	b. If yes, check calculation.	NA
4.	If data has been converted from ppm to ppb or vice versa, check conversion.	NA
5.	<u>Analyte Identification</u>	
	a. Confirmed by MS:	not done
	b. Confirmed by second column:	not done
6.	Average temperature of laboratory during analysis:	70 °F
7.	a. Reviewer's name:	PAUL E DUERKSEN
	b. Reviewer's signature:	Paul E