

DATA DELIVERABLE COVER SHEET

Data Deliverable Cover Sheet

Date: Wednesday, February 03, 1999

FS0211

Deliverable type (check one): Preliminary Test Results
 Final Data Deliverable

Sample authorization form number: C99-018

Attachments (check all that apply or n/a): Narrative Summary
 Test Results
 Chains of Custody

Total number of pages (including cover sheet): 8 pages

Comments:

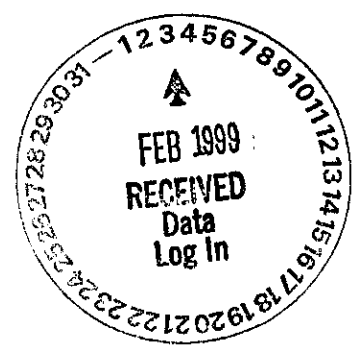
(Note: If Preliminary results were provided verbally, document information provided below including instrument used and results as communicated to the project.)

RECEIVED
NOV 24 2003

EDMC

CD Kramer
Analyst Signature

2/3/99
Date



Distribution: Sample Management – Doris Ayres B1-35
Project (specify) None. Sample results distributed electronically

Requires distribution to listed project personnel by Sample Management.

On-Site Measurement of Cr +6

100-HR-3 Groundwater

SAF: C99-018

Procedure: BHI-EE-05, FSP 1.17

Logbook: EL-1390-2 Page 37

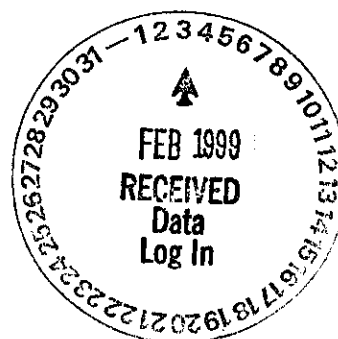
Date: 2/1/99

| Location | Heis Number | SAF | Date Collected | Time Collected | Sampler (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Cr +6 (mg/L) |
|-----------|-------------|---------|----------------|----------------|--------------------|--------------|---------------|---------------|--------------------|--------------|
| 199-H4-63 | B0TM20 | C99-018 | 2/1/99 | 10:09 | AGR | Water | 2/1/99 | 12:35 | CDK | 0.043 |
| 199-H4-64 | B0TM21 | C99-018 | 2/1/99 | 9:31 | AGR | Water | 2/1/99 | 12:40 | CDK | 0.040 |
| 199-H4-64 | B0TM22 | C99-018 | 2/1/99 | 9:31 | AGR | Water | 2/1/99 | 12:45 | CDK | 0.037 |

Analyst: C.D. Kramer

Date: 2/3/99

C:\Kramers_documents\Hexavalent Cr[Hwe0205.xls]Sheet1



Field Screening Chain of Custody/Sample Documentation

Project: 100-HR3-IAM

Date: 2/1/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | Ref |
|----------|----------------|-------------|-----------|---------------|----------|--------------------|-------|
| Blank | | Water | — | 12:25 | Cr+6 | | 0.003 |
| 0.10mg/L | | Std | 60ml aG | 12:30 | ↓ | 113% | 0.113 |
| BOTM20 | 10:09 | Groundwater | 40ml aG | 12:35 | | 0.043 | |
| BOTM21 | 9:31 | ↓ | ↓ | 12:40 | | 0.040 | |
| BOTM22 | 9:31 | ↓ | ↓ | 12:45 | | 0.037 | |
| | | | | | | | |
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| | | | | | | | |

Notes: Arrived @ EP-1 lab 11:40, Departed @ 13:00 Check wt 193.61
No 950 - Using list Fridays 951 equivalent program, Copied 951 to 950.
Made fresh std 29.70g (H₂O) + 300x 10mg/L Cr+6 std.
Detection Limit = 0.005

Samples Collected By: _____ Received By: CKramer Analyzed By: CKramer
 Date/Time: 2/1/99

GROUNDWATER SAMPLE REPORT

| | | | | | | | | |
|--------------------------------------|----------------------|--------------------|-------------------------------------|--------------------|--------------------------|---|-------------|--|
| Project: ERD / SR90/TC99 100HR3(1) | | | | | Date: FEB 01 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | | QC Type: SPLIT | | | Calculations: $105/6 = 17.5$ 16 MIN. PURGE | | |
| Well Number: 199-H4-63 | | | A#: R 2776 | | | | | |
| Total Purge Volume (gal): 192 | | | Purge Flow Rate (gal/min): 6 | | | | | |
| Pump Type: ELECTRIC | Time on: 0950 | Water: 0950 | Purge: 1008 | Samp.: 1009 | Off: 1022 | | | |

SAMPLES COLLECTED

B0TP58 300 Analytical Services COC No.: X99-015-3
 1;10L;G/P Technetium-99 (HCl to pH <2)
 1;10L;G/P Strontium-89,90 -- Sr-90 (HNO3 to pH <2)
B0TP59 Quanterra Incorporated COC No.: X99-015-4
 6;1000mL;G/P Technetium-99 (HCl to pH <2)
 3;1000mL;G/P Strontium-89,90 -- Sr-90 (HNO3 to pH <2)
 1;20mL;P Activity Scan (None)

B0TM20

Total No. Bottles: 9 Containment Code: Collector: **AG RIZZO**

| FIELD MEASUREMENTS | | | | | | | | | |
|-------------------------------------|-------------|-------------|--------------------------------|-------------|-------------|--|--|--|--|
| Water Level (TOC): 43.01 TOI | | | Drawdown (TOC): NO DATA | | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Prev. pH: N/A | | | Prev. DTW: N/A | | | E-Tape No.: DOT-2 | | | |
| Time | 0953 | 1000 | 1004 | 1008 | 1022 | 2-1-99 RPT | | | |
| pH | 7.26 | 7.82 | 7.93 | 7.90 | 7.81 | | | | |
| Temp. (°C) | 19.0 | 19.0 | 19.1 | 19.1 | 19.0 | | | | |
| Cond. (µs/cm) | 301 | 299 | 298 | 298 | 300 | | | | |
| Turb. (NTU) | 8.05 | .46 | .50 | .54 | 1.24 | | | | |
| D. O. (mg/L) | | | | | | | | | |
| | | | | | | | | | |

FIELD OBSERVATIONS

Weather: **OVERCAST 30-35°F**
 Field Comments: _____

POST CHECK COND. = 445 **STD = 445 µs**
 Pre Check: **7.03 AT 20.8°C** Post Check: **6.96 AT 20.7°C**
STD = 7.02 AT 20°C **STD = 7.02 AT 20°C**
 Comments: **Empore Rad Disks Special Study/Collect 20 liters/Store 14 liters at 5 Bay Facility**

Well capped and locked: Yes No Logbook/Pg#: **WATER SML H21, PAGE 55**
 Samples Surveyed for Gamma Radiation by RPTs: Yes No
 Data Recorded by: **RR FOX (RFS)** Date: **FEB 01 1999**
 Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | |
|--------------------------------------|----------------------|-------------------------------------|--------------------|--|------------------|
| Project: CERCLA / 100HR3IAM(1) | | Date: FEB 01 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: <u>DUP</u> | | Calculations: $75/6 = 12.5$ 13 MIN PURGE | |
| Well Number: 199-H4-64 | | A#: <u>B2777</u> | | | |
| Total Purge Volume (gal): <u>114</u> | | Purge Flow Rate (gal/min): <u>6</u> | | | |
| Pump Type: <u>ELECTRIC</u> | Time on: <u>0917</u> | Water: <u>0917</u> | Purge: <u>0930</u> | Samp.: <u>0931</u> | Off: <u>0936</u> |

SAMPLES COLLECTED

| | |
|--|---------------------|
| B0TM21 (Filtered) Mobile Field Laboratory | COC No.: C99-018-34 |
| <u>326600</u> 1:40mL;G Chromium - Hex (None) | |
| B0TM22 (Filtered) Mobile Field Laboratory | COC No.: C99-018-35 |
| <u>326600</u> 1:40mL;G Chromium - Hex (None) | |

Total No. Bottles: 2 Containment Code: Collector: AG RIZZO

| FIELD MEASUREMENTS | | | | | | | | | |
|-------------------------------------|-------------|-------------|--------------------------------|-------------|-----------------------|--|--|--|--|
| Water Level (TOC): <u>34.42 TOP</u> | | | Drawdown (TOC): <u>NO DATA</u> | | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Prev. pH: <u>N/A</u> | | | Prev. DTW: <u>N/A</u> | | | E-Tape No.: <u>DET-2</u> | | | |
| Time | <u>0921</u> | <u>0926</u> | <u>0930</u> | <u>0936</u> | 2-1-99 ENT | | | | |
| pH | <u>7.39</u> | <u>7.40</u> | <u>7.46</u> | <u>7.69</u> | | | | | |
| Temp. (°C) | <u>17.1</u> | <u>16.1</u> | <u>15.6</u> | <u>17.1</u> | | | | | |
| Cond. (µs/cm) | <u>370</u> | <u>366</u> | <u>366</u> | <u>374</u> | | | | | |
| Turb. (NTU) | <u>7.66</u> | <u>3.97</u> | <u>3.18</u> | <u>2.09</u> | | | | | |
| D. O. (mg/L) | | | | | | | | | |
| | | | | | | | | | |

| FIELD OBSERVATIONS | |
|---|-----------------------------------|
| Weather: <u>CLEAR 25-30 °F</u> | |
| Field Comments: _____ | |
| _____ | |
| _____ | |
| Pre Check: <u>2.00 @ 10.00 AT 25°C</u> | Post Check: <u>7.03 AT 20.8°C</u> |
| <u>STD = 7.00 AT 25°C</u> | <u>STD = 7.02 AT 20°C</u> |
| Comments: <u>Contact prior to sampling B.Bone (531-0695) E.Henderson (531-0679)</u> | |

| | |
|---|---|
| Well capped and locked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Logbook/Pg#: <u>WH-S112 H 21, PAGE 55</u> |
| Samples Surveyed for Gamma Radiation by RPTs: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | FEB 01 1999 |
| Data Recorded by: <u>RR FOX (RFS)</u> | Date: _____ |
| Data Checked by: _____ | Date: _____ |

Memorandum

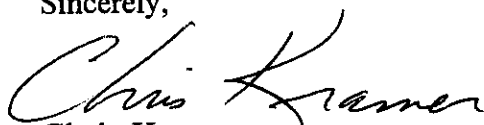
To: Doris Ayres, Sample Management
From: Chris Kramer, Analytical Field Services
Date: 02/26/99
Re: Field Screening Results related to SAF C99-018

This package comprises field analytical sample results for immediate distribution to concerned parties. Please perform distribution. A Microsoft Office binder file has been prepared and electronically sent to you. It contains this memo, a brief sample narrative, and copies of each result table included in this package. You may choose to use the file for notification and data management.

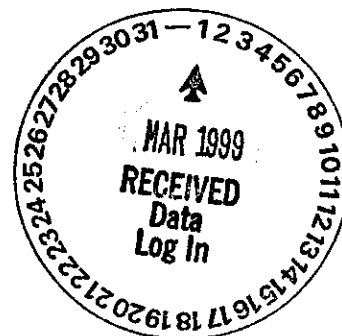
The associated Chain-of-Custody documentation and any supplementary information provided by samplers is included in the physical package delivery.

Supporting information concerning these analyses is recorded in logbook EL-1390-2. Anyone with questions regarding the field screening is welcome to contact me.

Sincerely,



Chris Kramer,
Analytical Field Services



DISTRIBUTE IMMEDIATELY

Data Deliverable Cover Sheet

Date: Monday, March 01, 1999

Deliverable type (check one): Preliminary Test Results
 Final Data Deliverable

Sample authorization form number: C99-018

Attachments (check all that apply or n/a): Narrative Summary
 Test Results
 Chains of Custody

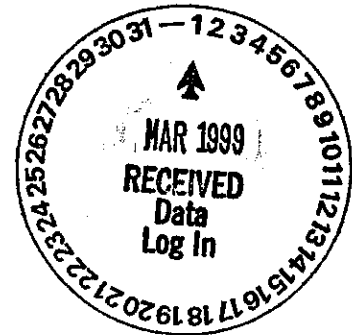
Total number of pages (including cover sheet): 32 pages

Comments:

(Note: If Preliminary results were provided verbally, document information provided below including instrument used and results as communicated to the project.)

CDK name
Analyst Signature

3/1/99
Date



Distribution: Sample Management – Doris Ayres B1-35
Please make distribution to customer(s).

Requires distribution to listed project personnel by Sample Management.

Sample Narrative

For SAF / Analytical Date: C99-018 / 2-(11, 12, 16)-99

Prepared by: Chris Kramer, Analytical Field Services

Date: February 26, 1999



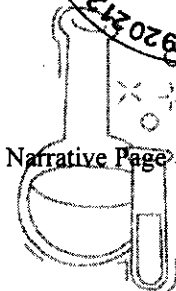
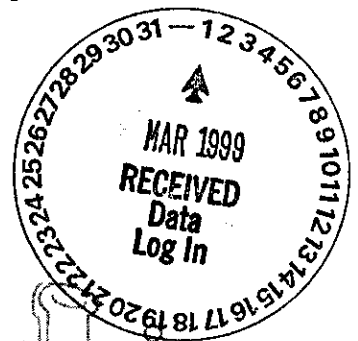
Two groundwater samples were collected and submitted for analysis using SAF number C99-018 on 2/11, and an additional sixteen samples were collected and submitted for analysis on 2/12/99. All but five samples were submitted for analysis of hexavalent chromium. Remaining samples were submitted for sulfate analysis.

Hexavalent chromium analyses were performed on the same day samples were collected. Samples were analyzed for hexavalent chromium using Accuvac® vials and a HACH spectrophotometer, S/N 980600009425. Procedure BHI-EE-05, FSP 1.17 describes the method.

Sulfate samples were analyzed using different Accuvac® reagent vials and the same HACH spectrophotometer, (S/N 980600009425). The instrument manufacture's method was used—HACH SulfaVer 4, Method 8051. The Chain-of-Custody(s) incorrectly specify "IC Anions - 300.0 {Sulfate}." Samples were refrigerated until they could be analyzed. A new method calibration curve was constructed before analysis of the five sulfate samples on 2/16/99.

Additional information may be found in logbook EL-1390-2, *Miscellaneous Field Sampling*, including laboratory quality control results related to these activities. Routine laboratory blanks and standards were run in conjunction with these samples. Results were acceptable.

All waste was disposed onsite, or labeled and given to HR3 Pump & Treat Operations personnel for disposal.



On-Site Measurement of Sulfate

100-HR-3 Groundwater

SAF: C99-018

Procedure: HACH SulfaVer 4, Method 8051

Logbook: EL-1390-2 Page 47-48

Date: 2/16/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Sulfate (mg/L) | Comments |
|-----------|-------------|---------|----------------|----------------|---------------------|--------------|---------------|---------------|--------------------|----------------|------------------|
| 199-D4-1 | BOTM28 | C99-018 | 2/12/99 | 10:04 | AGR | Water | 2/16/99 | 16:11 | CDK | 550 | 10X dil reads 55 |
| 199-D4-13 | BOTM30 | C99-018 | 2/12/99 | 8:43 | AGR | Water | 2/16/99 | 16:12 | CDK | 170 | 10X dil reads 17 |
| 199-D4-14 | BOTM32 | C99-018 | 2/12/99 | 10:37 | AGR | Water | 2/16/99 | 16:13 | CDK | 74 | |
| 199-D4-15 | BOTM34 | C99-018 | 2/12/99 | 9:13 | AGR | Water | 2/16/99 | 16:14 | CDK | 150 | 10X dil reads 15 |
| 199-D4-13 | BOTM82 | C99-018 | 2/12/99 | 7:30 | AGR | Water | 2/16/99 | 16:15 | CDK | <5 | undetected |

Analyst: C.D. Kramer

Date: 2/26/99

C:\Kramers_documents\Sulfate\[021699 C99-018.xls]Sheet1

BOTM82 Field Trip Blank

*ELIAMS
SULFATE
- 2/26/99*

On-Site Measurement of Cr +6

100-HR-3 Groundwater

SAF: C99-018

Procedure: BHI-EE-05, FSP 1.17

Logbook: EL-1390-2 Page 40

Date: 2/11/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Cr +6 (mg/L) |
|----------|-------------|---------|----------------|----------------|---------------------|--------------|---------------|---------------|--------------------|--------------|
| 199-H4-4 | B0TM17 | C99-018 | 2/11/99 | 9:06 | AGR | Water | 2/11/99 | 12:35 | CDK | 0.009 |
| 199-H4-5 | B0TM19 | C99-018 | 2/11/99 | 9:50 | AGR | Water | 2/11/99 | 12:45 | CDK | 0.105 |

Analyst: C.D. Kramer

Date: 2/26/99

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On-Site Measurement of Cr +6

100-HR-3 Groundwater

SAF: C99-018

Procedure: BHI-EE-05, FSP 1.17

Logbook: EL-1390-2 Page 41, 46

Date: 2/12/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Cr +6 (mg/L) |
|-----------|-------------|---------|----------------|----------------|---------------------|--------------|---------------|---------------|--------------------|--------------|
| 199-D4-1 | B0TM27 | C99-018 | 2/12/99 | 10:04 | AGR | Water | 2/12/99 | 19:05 | CDK | <0.005 |
| 199-D4-13 | B0TM29 | C99-018 | 2/12/99 | 8:43 | AGR | Water | 2/12/99 | 19:07 | CDK | 0.488 |
| 199-D4-14 | B0TM31 | C99-018 | 2/12/99 | 10:37 | AGR | Water | 2/12/99 | 19:09 | CDK | 0.470 |
| 199-D4-15 | B0TM33 | C99-018 | 2/12/99 | 9:13 | AGR | Water | 2/12/99 | 19:15 | CDK | 2.14 |
| 199-D5-13 | B0TM36 | C99-018 | 2/12/99 | 11:52 | DRB | Water | 2/12/99 | 18:41 | CDK | 0.416 |
| 199-D5-13 | B0TM37 | C99-018 | 2/12/99 | 11:52 | DRB | Water | 2/12/99 | 18:42 | CDK | 0.414 |
| 199-D5-14 | B0TM38 | C99-018 | 2/12/99 | 9:55 | DRB | Water | 2/12/99 | 18:45 | CDK | 0.832 |
| 199-D5-15 | B0TM39 | C99-018 | 2/12/99 | 10:52 | DRB | Water | 2/12/99 | 18:50 | CDK | 0.033 |
| 199-D5-16 | B0TM40 | C99-018 | 2/12/99 | 9:10 | DRB | Water | 2/12/99 | 18:52 | CDK | 0.332 |
| 199-D5-20 | B0TM41 | C99-018 | 2/12/99 | 11:12 | AGR | Water | 2/12/99 | 19:11 | CDK | 0.032 |
| 199-D4-13 | B0TM81 | C99-018 | 2/12/99 | 7:30 | AGR | Water | 2/12/99 | 19:12 | CDK | <0.005 |

Analyst: C.D. Kramer

Date: 2/26/99

C:\Kramers_documents\Hexavalent Cr[021299 C99-018.xls]Sheet1

B0TM81 Field Trip Blank

Field Screening Chain-of-Custody/Sample Documentation

Project: 100-HR3-IAM Groundwater Monitoring Feb. 1999

Date: 2/11/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | mg/L Cr ⁶⁺ -Ref |
|-----------|----------------|-------------|-----------|---------------|------------------|--------------------|-------------------------------|
| Blank | | Reagents | - | 11:40 | Cr ⁶⁺ | .004 | < 0.005 |
| 0.10 mg/L | | Std | 60 mL AB | 11:43 | ↓ | 106% Rec. | 0.106 |
| BOTM17 | 9:06 | GW | 40 mL AB | 11:48 | | .009 | 0.009 |
| BOTM19 | 9:50 | GW | " | 11:54 | | .105 | 0.105 |
| | | | | | | | |
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Notes: Opened new std ampule Lot# N5272 - No expiration date Check Wt 193.60 g
Add ampule to existing standard container.
Arrived onsite 11:15 / Departed ~ 12:30

Samples Collected By: A.G. Rizzo Received By: C. Kramer Analyzed By: C. Kramer
 Date/Time: 2/11/99

Field Screening Chain of Custody/Sample Documentation

Project: 100-HR3-IAM GW Monitoring Feb 1999

Date: 2/12/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | Ref |
|--------|----------------|-------------|-----------|---------------|-------------------|-------------------------------|--------|
| BOTM36 | 11:52 | GW | 40ml aG | 18:41 | C _r +6 | | 0.416 |
| BOTM37 | 11:52 | ↓ | ↓ | 18:42 | ↓ | | 0.414 |
| BOTM38 | 9:55 | ↓ | ↓ | 18:45 | ↓ | | 0.832 |
| BOTM39 | 10:52 | ↓ | ↓ | 18:50 | ↓ | | 0.033 |
| BOTM40 | 9:10 | ↓ | ↓ | 18:52 | ↓ | | 0.332 |
| Blank | - | DI Water | - | 18:37 | 18:37 | 0.002 | <0.005 |
| Std | 7:10 | 0.10mg/L | 60ml aG | 18:39 | 18:39 | | 0.108 |
| BOTM27 | 10:04 | GW | 40ml aG | 19:05 | 19:05 | 0.004 | <0.005 |
| BOTM29 | 8:43 | ↓ | ↓ | 19:07 | ↓ | | 0.488 |
| BOTM31 | 10:37 | ↓ | ↓ | 19:09 | ↓ | | 0.470 |
| BOTM33 | 9:13 | ↓ | ↓ | 19:15 | ↓ | *Over range direct - Dil. 10x | 0.214 |
| BOTM81 | 0730 | ↓ | ↓ | 19:12 | ↓ | 0.000 | <0.005 |
| BOTM41 | 11:12 | ↓ | ↓ | 19:11 | ↓ | | 0.032 |

Diluted Reading

Notes: New batch of Accuvues

* Diluted 2 ml sample in 18 ml water
 Left HR 3 at 19:50

Samples Collected By: _____

Received By: M. Baechler
C. Kramer
 Date/Time: 2/12/99

Analyzed By: C. Kramer

Field Screening Chain of Custody/Sample Documentation

Project: 100-HR3-IAM

Date: 2/16/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | SO ₄ mg/L Ref |
|----------|----------------|---------------|-----------|--------------------|-----------------|--------------------|--------------------------|
| Blank | - | Reagents Only | 120ml aG | 4:08 ^{PM} | SO ₄ | | 1mg/L |
| 20.0mg/L | - | STD | 60ml aG | 4:10 | ↓ | 110% Rec | 22 |
| BOTM28 | | GW | ↓ | 4:11 | ↓ | 10X dil reads 55 | *550 |
| BOTM30 | | ↓ | ↓ | 4:12 | ↓ | " 17 | *170 |
| BOTM32 | | ↓ | ↓ | 4:13 | ↓ | | 74 |
| BOTM34 | | ↓ | ↓ | 4:14 | ↓ | " 15 | *150 |
| BOTM82 | | ↓ | ↓ | 4:15 | ↓ | | 1 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Notes: Lot M8183 of Re. Vials
Arrived 12:55 / LV 14:25

*Calc. fr. diluted aliquot

Samples Collected By: _____

Received By: _____

Analyzed By: [Signature]

Date/Time: 2/16/99

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|---|----------------------|-------------------------------------|--------------------|------------------------------|------------------|-------------|--|
| Project: CERCLA / 100HR3IAM(1) SURV/DOH/ERD | | | | Date: FEB 11 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: <u>SPLT</u> | | Calculations: | | | |
| Well Number: 199-H4-4 | | A#: <u>4630</u> | | $13 / = 0.5$ 7 min. purge | | | |
| Total Purge Volume (gal): <u>66</u> | | Purge Flow Rate (gal/min): <u>2</u> | | | | | |
| Pump Type: <u>HYDRO-STAR</u> | Time on: <u>0850</u> | Water: <u>0850</u> | Purge: <u>0857</u> | Samp.: <u>0906</u> | Off: <u>0923</u> | | |

SAMPLES COLLECTED

- 266080 BOTM17 (Filtered) Mobile Field Laboratory COC No.: C99-018-26
- 1:40mL;G Chromium - Hex (None)
- 2-11-99 BOTM18 (Filtered) Quanterra St. Louis COC No.: C99-018-28
- 1:20mL;P Activity Scan (None)
- 1:500mL;G/P Chromium Hex - 7198 (Cool 4C)
- 1350020

Total No. Bottles: 3 Containment Code: Collector: AG RIZZO

FIELD MEASUREMENTS

| | | | | | |
|--------------------------------------|-------------|-------------------------------|-------------|--|--------------------------|
| Water Level (TOC): <u>36.70 pump</u> | | Drawdown (TOC): <u>146.79</u> | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: <u>N/A</u> <u>PLATE</u> | | Prev. DTW: <u>N/A</u> | | E-Tape No.: <u>99-1</u> | |
| Time | <u>0854</u> | <u>0900</u> | <u>0905</u> | <u>0923</u> | 2-11-99 PLATE |
| pH | <u>7.11</u> | <u>7.14</u> | <u>7.21</u> | <u>7.24</u> | |
| Temp. (°C) | <u>15.6</u> | <u>15.6</u> | <u>15.7</u> | <u>15.4</u> | |
| Cond. (µs/cm) | <u>348</u> | <u>349</u> | <u>348</u> | <u>347</u> | |
| Turb. (NTU) | <u>3.00</u> | <u>3.02</u> | <u>2.01</u> | <u>1.95</u> | |
| D. O. (mg/L) | | | | | |
| FILTERED SAMPLE = <u>1.37</u> NTU | | | | | |

FIELD OBSERVATIONS

Weather: CLEAR/ST 20-25°F
 Field Comments: _____

Pre Check: 7.00 AT 25°C STD = 7.00 AT 25°C
 Post Check: 6.97 AT 24.3°C STD = 7.00 AT 25°C

Comments: Contact prior to sampling B. Bone (531-0695) E. Henderson (531-0679)

Well capped and locked: Yes No Logbook/Pg#: WIN-SINK H21, PAGE 65

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: RR FOX (RFS) Date: FEB 11 1999

Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|-------------------------------------|----------------------|-------------------------------------|--------------------|---|------------------|-------------|--|
| Project: CERCLA / 100HR3IAM(1) | | | | Date: FEB 11 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: $8/2 = 4 \text{ min. purge}$ | | | |
| Well Number: 199-H4-5 | | A#: 4636 | | | | | |
| Total Purge Volume (gal): 28 | | Purge Flow Rate (gal/min): 2 | | | | | |
| Pump Type: HYDRO-STAR | Time on: 0939 | Water: 0939 | Purge: 0943 | Samp.: 0950 | Off: 0953 | | |

SAMPLES COLLECTED

BOTM19 (Filtered) Mobile Field Laboratory COC No.: C99-018-30
 1:40mL;G Chromium - Hex (None)

826 6080

Total No. Bottles: 1 Containment Code: Collector: **AG RIZZO**

FIELD MEASUREMENTS

| | | | | | |
|--------------------------------------|-------------|--------------------------------|-------------|--|--|
| Water Level (TOC): 39.40 pump | | Drawdown (TOC): NO DATA | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: N/A | | Prev. DTW: N/A | | E-Tape No.: 44-1 | |
| Time | 0943 | 0946 | 0949 | 0953 | |
| pH | 2.98 | 8.00 | 8.01 | 8.05 | |
| Temp. (°C) | 17.4 | 17.5 | 17.5 | 17.2 | |
| Cond. (µs/cm) | 997 | 995 | 990 | 984 | |
| Turb. (NTU) | 1.95 | 3.16 | 2.73 | 3.68 | |
| D. O. (mg/L) | | | | | |
| FILTERED SAMPLE = .28 NTU | | | | | |
| 60045700 | | | | | |

FIELD OBSERVATIONS

Weather: **OVERCAST 20-25°F**
 Field Comments: _____

Post Check Cond. = 444 STD = 445 µS
 Pre Check: **6.97 AT 24.3°C STD = 7.00 AT 25°C**
 Post Check: **7.09 AT 20.3°C STD = 7.07 AT 20°C**

Comments: **Contact prior to sampling B. Bene (531-0695) E. Henderson (531-0679) Dormer Blankenship 373-5456**

| | |
|---|--|
| Well capped and locked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Logbook/Pg#: Wm-SHL H 21, PAGE 65 |
| Samples Surveyed for Gamma Radiation by RPTs: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | FEB 11 1999 |
| Data Recorded by: RR FOX (RFS) | Date: _____ |
| Data Checked by: _____ | Date: _____ |

GROUNDWATER SAMPLE REPORT

SUBMIT

| | | | | | | | |
|-------------------------------------|---------------|-------------|------------------------------|-------------------|-----------|---|--|
| Project: CERCLA / 100HR3IAM(2) SURV | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | | QC Type: | | | Calculations: $50 / 2 = 25 \text{ min}$ PURGE | |
| Well Number: 199-D4-1 | | | A#: B2834 | | | | |
| Total Purge Volume (gal): 66 | | | Purge Flow Rate (gal/min): 2 | | | | |
| Pump Type: HYDRO-STAR | Time on: 0938 | Water: 0938 | Purge: 1003 | Samp.: 1004 | Off: 1011 | | |

SAMPLES COLLECTED

- B0TM27 (Filtered) Mobile Field Laboratory COC No.: C99-018-3
- *Jan 40* 1:00mL;G Chromium - Hex (None) *5266080*
- *1-25-99* B0TM28 Mobile Field Laboratory COC No.: C99-018-3
- *2237040* 1:125mL;P IC Anions - 300.0 (Sulfate) (Cool 4C)

Total No. Bottles: 2 Containment Code: *261* Collector: AG RIZZO

FIELD MEASUREMENTS

| | | | | | |
|--------------------------------------|-------------|------------------------------|-------------|--|-------------|
| Water Level (TOC): <i>83.50 pump</i> | | Drawdown (TOC): <i>83.80</i> | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: <i>N/A</i> | | Prev. DTW: <i>N/A</i> | | E-Tape No.: <i>99-1</i> | |
| Time | <i>0942</i> | <i>0950</i> | <i>0958</i> | <i>1003</i> | <i>1011</i> |
| pH | <i>7.11</i> | <i>7.95</i> | <i>8.12</i> | <i>8.16</i> | <i>8.18</i> |
| Temp. (°C) | <i>15.8</i> | <i>15.9</i> | <i>15.9</i> | <i>15.8</i> | <i>15.7</i> |
| Cond. (µs/cm) | <i>3150</i> | <i>2930</i> | <i>2850</i> | <i>2810</i> | <i>2720</i> |
| Turb. (NTU) | <i>5.30</i> | <i>4.81</i> | <i>2.43</i> | <i>1.92</i> | <i>3.62</i> |
| D. O. (mg/L) | | | | | |
| FILTERED SAMPLE = <i>170 NTU</i> | | | | | |
| <i>1-0045700</i> | | | | | |

FIELD OBSERVATIONS

Weather: *OVERCAST SLIGHT SUN 25-30°F*

Field Comments: _____

Pre Check: *7.09 AT 20.5°C* Post Check: *7.04 AT 19.6°C*

STD = 7.02 AT 20°C *STD = 7.02 AT 25°C*

Comments: _____

Well capped and locked: Yes No Logbook/Pg#: *W001-SWIL H 21, PAGE 67*

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: *RR FOX (RFS)* Date: _____

Data Checked by: _____ Date: _____

FEB 12 1999

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------------|----------------------|-------------------------------------|--------------------|--------------------------|------------------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | DATE: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: FTB | | Calculations: | | | |
| Well Number: 199-D4-13 / FTB | | A#: | | 58 / 7 = 6.28 | | | |
| Total Purge Volume (gal): 147 | | Purge Flow Rate (gal/min): 7 | | 9 min. purge | | | |
| Pump Type: ELECTRIC | Time on: 0825 | Water: 0825 | Purge: 0834 | Samp.: 0843 | Off: 0846 | | |

SAMPLES COLLECTED

W 40
 15-99
 1370-10

| | |
|--|--------------------|
| B0TM29 (Filtered) Mobile Field Laboratory | COC No.: C99-018-4 |
| 40 1,00mL;G Chromium - Hex (None) 6266080 | |
| B0TM30 Mobile Field Laboratory | COC No.: C99-018-4 |
| 1;125mL;P IC Anions - 300.0 (Sulfate) (Cool 4C) | |

Total No. Bottles: 2 Containment Code: **601** Collector: **AG RIZZO**

FIELD MEASUREMENTS

| | | | | | | | |
|---------------------------------------|-------------|-----------------------|-------------|-------------|-------------|--|--|
| Water Level (TOC): 1.96 RP TEE | | Drawdown (TOC): | | | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: N/A | | Prev. DTW: N/A | | | | E-Tape No.: 99-1 | |
| Time | 0828 | 0834 | 0840 | 0842 | 0846 | 2-12 59 RIZZO | |
| pH | 7.02 | 7.41 | 7.72 | 7.74 | 7.81 | | |
| Temp. (°C) | 16.4 | 16.6 | 16.6 | 16.6 | 16.3 | | |
| Cond. (µs/cm) | 1420 | 1418 | 1407 | 1405 | 1401 | | |
| Turb. (NTU) | 27.0 | 6.31 | 5.40 | 4.71 | 3.67 | | |
| D. O. (mg/L) | | | | | | | |
| FILTERED SAMPLE = 1.36 NTU | | | | | | | |

FIELD OBSERVATIONS

Weather: **OVERCAST 20-25°F**

Field Comments:

| | |
|--|-----------------------------------|
| Pre Check: 7.00 @ 10:00 AT 25°C | Post Check: 7.08 AT 19.4°C |
| STD = 7.10 AT 25°C | STD = 7.02 AT 20°C |

Comments:

Well capped and locked: Yes No Logbook/Pg#: **WIN-SUM H 21, PAGE 67**

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: **RR FOX (RFS)** _____
Print and sign name

Date: _____

Data Checked by: _____
Print and sign name

Date: _____

FEB 12 1999

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|---------------|------------------------------|-------------|----------------------------------|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: | | | |
| Well Number: 199-D4-14 | | A#: | | $80 / 7 = 11.42$ 12 min PURGE | | | |
| Total Purge Volume (gal): 119 | | Purge Flow Rate (gal/min): 7 | | | | | |
| Pump Type: ELECTRIC | Time on: 1024 | Water: 1024 | Purge: 1036 | Samp.: 1037 | Off: 1041 | | |

SAMPLES COLLECTED

BOTM31 (Filtered) Mobile Field Laboratory COC No.: C99-018-5
 40 1:60mL;G Chromium - Hex (None) 826608
 BOTM32 Mobile Field Laboratory COC No.: C99-018-5
 1-25-99
 12370-10 1:125mL;P IC Anions - 300.0 (Sulfate) (Cool 4C)

Total No. Bottles: 2 Containment Code: 767 Collector: AG RIZZO

FIELD MEASUREMENTS

| | | | | | |
|-----------------------------|------|-----------------|------|--|-------------|
| Water Level (TOC): 0.0 pump | | Drawdown (TOC): | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: N/A | | Prev. DTW: N/A | | E-Tape No.: 99-1 | |
| Time | 1026 | 1030 | 1036 | 1041 | 2.12-14 LUT |
| pH | 7.45 | 7.77 | 7.81 | 7.76 | |
| Temp. (°C) | 15.7 | 15.9 | 15.9 | 16.0 | |
| Cond. (µs/cm) | 681 | 682 | 680 | 679 | |
| Turb. (NTU) | 98.8 | 4.29 | 2.41 | 2.02 | |
| D. O. (mg/L) | | | | | |
| FILTERED SAMPLE = 1.25 NTU | | | | | |

FIELD OBSERVATIONS

Weather: OVERCAST 25 - 30°F

Field Comments: _____

POST CHECK COND = 444 STD = 445 µs
 Pre Check: 7.04 AT 19.6°C Post Check: 6.99 AT 20°C
 STD = 7.02 AT 20°C STD = 7.02 AT 20°C

Comments: _____

Well capped and locked: Yes No Logbook/Pg# : WWR-SML H 21, PAGE 67
 Samples Surveyed for Gamma Radiation by RPTs: Yes No
 Data Recorded by: RR FOX (RFS) Date: FEB 12 1999
 Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|---------------|------------------------------|-------------|----------------------------------|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1998 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: | | | |
| Well Number: 199-D4-15 | | A#: | | $87 / 7 = 12.42$ 13 min purgE | | | |
| Total Purge Volume (gal): 126 | | Purge Flow Rate (gal/min): 7 | | | | | |
| Pump Type: ELECTRIC | Time on: 0859 | Water: 0859 | Purge: 0912 | Samp.: 0913 | Off: 0916 | | |

SAMPLES COLLECTED

BOTM33 (Filtered) Mobile Field Laboratory COC No.: C99-018-6
 Chromium - Hex (None) 8266086
 BOTM34 Mobile Field Laboratory COC No.: C99-018-6
 IC Anions - 300.0 (Sulfate) (Cool 4C)
 40 1:100mL;G
 1-25-99
 7237040 1:125mL;P

Total No. Bottles: 2 Containment Code: 1012 Collector: AG RIZZO

FIELD MEASUREMENTS

| | | | | | | | | | |
|------------------------------|------|-------------------------|------|----------------|--|------------------------------|--|--|--|
| Water Level (TOC): 26.79 TSP | | Drawdown (TOC): NO DATA | | Oil Sheen | | Yes <input type="checkbox"/> | | No <input checked="" type="checkbox"/> | |
| Prev. pH: N/A | | TEC | | Prev. DTW: N/A | | E-Tape No.: 99-1 | | | |
| Time | 0902 | 0408 | 0912 | 0916 | | | | | |
| pH | 7.14 | 7.77 | 7.81 | 7.87 | | | | | |
| Temp. (°C) | 16.4 | 16.6 | 16.6 | 16.7 | | | | | |
| Cond. (µs/cm) | 1394 | 1384 | 1382 | 1377 | | | | | |
| Turb. (NTU) | 28.5 | 9.39 | 2.44 | 1.30 | | | | | |
| D. O. (mg/L) | | | | | | | | | |
| FILTERED SAMPLE = 1.18 | | NTU | | | | | | | |
| 6-DOM5700 | | | | | | | | | |

FIELD OBSERVATIONS

Weather: Sunny, (11) 20-25° F
 Field Comments: _____

 POST CHECK COND = 444 STD = 445 u/c
 Pre Check: 7.08 AT 19.4° C Post Check: 7.09 AT 20.5° C
 STD = 7.02 AT 20° C STD = 7.02 AT 20° C
 Comments: _____

Well capped and locked: Yes No Logbook/Pg#: WIN-SML H 21, PAGE 67
 Samples Surveyed for Gamma Radiation by RPTs: Yes No
 Data Recorded by: RR FOX (RFS) Date: FEB 12 1998
 Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|--|------------------------------|-------------|-------------------|-------------|-------------|-------------|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: DWP | | Calculations: | | | |
| Well Number: 199-D5-13 | | A#: 4570 | | 58 / 1 = 58 min | | | |
| Total Purge Volume (gal): 65 | | Purge Flow Rate (gal/min): 1 | | 43 / 2 = 21.5 min | | | |
| Pump Type: HYDRO | | Time on: 1115 | Water: 1115 | Purge: 1152 | Samp.: 1152 | Off: 1155 | 1213 / 1151 |

SAMPLES COLLECTED

| | | |
|-------------------|-------------------------|--------------------|
| B0TM36 (Filtered) | Mobile Field Laboratory | COC No.: C99-018-8 |
| 1;40mL;G | Chromium - Hex (None) | 7147010 |
| B0TM37 (Filtered) | Mobile Field Laboratory | COC No.: C99-018-9 |
| 1;40mL;G | Chromium - Hex (None) | 7147010 |

Total No. Bottles: 2 Containment Code: 726 Collector: D.R. BREWINGTON (RFS)

FIELD MEASUREMENTS

| | | | | | | | | |
|-------------------------------|------|-----------------------|-------|-------------------|------|------------------------------|--|--|
| Water Level (TOC): 86.48 P.17 | | Drawdown (TOC): 86.44 | | Oil Sheen | | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: # 394 | | | | |
| Time | 1118 | 1121 | 1130 | 1140 | 1149 | 1151 | 1155 | |
| pH | 7.99 | 8.04 | 8.06 | 8.08 | 8.09 | 8.07 | 8.09 | |
| Temp. (°C) | 17.5 | 17.6 | 17.2 | 17.3 | 17.2 | 17.2 | 17.2 | |
| Cond. (µs/cm) | 1005 | 1008 | 1002 | 1006 | 1004 | 1010 | 1013 | |
| Turb. (NTU) | 6.24 | 11.7 | 3.08 | 2.69 | 1.61 | 1.67 | 1.50 | |
| D. O. (mg/L) | | | | | | | | |
| Filter Turb. | GD | 045700 | → .28 | | | | | |

FIELD OBSERVATIONS

Weather: OVERCAST COOL

Field Comments: AT 030 TURBIDITY WAS BELOW 5 NTU INCREASE FLOW TO 2 GPM

COND 432 STD 465 COND 433 STD 445

| | |
|------------------------------|-------------------------------|
| Pre Check: PH 7.05 AT 21.8°C | Post Check: PH 7.03 AT 22.4°C |
| STD 7.02 AT 20°C | STD 7.02 AT 20°C |

Comments: HIGH TURBIDITY; PUMP AT 1/3 GPM

Well capped and locked: Yes No Logbook/Pg#: W.M. S.M.L. 1422 / 24

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: RT SICKLE (RFS) *RS* Date: FEB 12 1999

Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|---------------|------------------------------|-------------|---|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: 80/3 = 26.66 0455 | | | |
| Well Number: 199-D5-14 | | A#: 4571 | | | | | |
| Total Purge Volume (gal): 87 | | Purge Flow Rate (gal/min): 3 | | | | | |
| Pump Type: <u>Hydro</u> | Time on: 0427 | Water: 0428 | Purge: 0455 | Samp.: 0455 | Off: 0457 | | |

SAMPLES COLLECTED

BOTM38 (Filtered) Mobile Field Laboratory COC No.: C99-018-10
 1;40mL;G Chromium - Hex (None) 7147010

Total No. Bottles: 1 Containment Code: 863 Collector: D R BREWINGTON (RFS)

FIELD MEASUREMENTS

| | | | | | | | | | |
|--------------------------------------|-------------------|------------------------------|------|--|------|-----------------|--|--|--|
| Water Level (TOC): <u>86.75 P.P.</u> | | Drawdown (TOC): <u>87.33</u> | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: <u>399</u> | | | | | |
| Time | 0431 | 0443 | 0451 | 0453 | 0455 | 0457 | | | |
| pH | 7.74 | 7.80 | 7.79 | 7.80 | 7.80 | 7.80 | | | |
| Temp. (°C) | 20.1 | 20.3 | 20.5 | 20.5 | 20.5 | 20.5 | | | |
| Cond. (µs/cm) | 1103 | 1106 | 1103 | 1103 | 1100 | 1104 | | | |
| Turb. (NTU) | .76 | .91 | | | 1.29 | 2.42 | | | |
| D. O. (mg/L) | | | | | | | | | |
| <u>Filter</u> | <u>9D 0 45700</u> | —————→ | | | | <u>.75</u> | | | |

FIELD OBSERVATIONS

Weather: cloudy cloudy
 Field Comments: _____

| | | | |
|---|---|--|---|
| Pre Check: <u>cond 439</u> <u>57d 445</u> | | Post Check: <u>cond 437</u> <u>57d 445</u> | |
| <u>7.01</u> <u>HT</u> <u>22.0 °C</u> | <u>57d</u> <u>7.00</u> <u>HT</u> <u>25 °C</u> | <u>7.00</u> <u>HT</u> <u>24.4 °C</u> | <u>57d</u> <u>7.00</u> <u>HT</u> <u>25 °C</u> |

Comments: _____

Well capped and locked: Yes No Logbook/Pg#: 617-SM1-1422 / 23

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: RT SICKLE (RFS) 5/14 Date: _____

Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|---------------|--------------------------------|-------------|--------------------------|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: | | | |
| Well Number: 199-D5-15 | | A#: 1572 | | $87 / 2.5 = 34.8$ | | | |
| Total Purge Volume (gal): 93 | | Purge Flow Rate (gal/min): 2.5 | | | | | |
| Pump Type: <u>Hydro</u> | Time on: 1016 | Water: 1017 | Purge: 1052 | Samp.: 1052 | Off: 1054 | 1052 | |

SAMPLES COLLECTED

BOTM39 (Filtered) Mobile Field Laboratory COC No.: C99-018-12
 1:40mL:G Chromium - Hex (None) 7147010

Total No. Bottles: 1 Containment Code: 154 Collector: J.R. BREWINGTON (RFS)

FIELD MEASUREMENTS

| | | | | | | | | | |
|-------------------------------------|-----------|--------------------------------|------|--|------|------|------------|--|--|
| Water Level (TOC): <u>86.04 7.2</u> | | Drawdown (TOC): <u>NO DATA</u> | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: | | | | | |
| Time | 1020 | 1030 | 1045 | 1048 | 1050 | 1052 | 1054 | | |
| pH | 8.00 | 8.01 | 7.98 | 7.98 | 7.98 | 7.98 | 7.98 | | |
| Temp. (°C) | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | 19.1 | | |
| Cond. (µs/cm) | 416 | 467 | 514 | 530 | 537 | 540 | 550 | | |
| Turb. (NTU) | 1.09 | .95 | | | | 1.04 | .77 | | |
| D. O. (mg/L) | | | | | | | | | |
| <u>Filterable Residue</u> | <u>GD</u> | <u>0.45700</u> | → | | | | <u>.36</u> | | |

FIELD OBSERVATIONS

Weather: Overcast CALM

Field Comments: _____

| | | | |
|---|--|----------------------------|--|
| <u>Cond 477 STD 445</u> | | <u>Cond 472 STD 445</u> | |
| Pre Check: <u>pH 7.00 AT 24.4 °C</u> | Post Check: <u>pH 7.05 AT 21.8 °C</u> | | |
| <u>STD 7.00 AT 25 °C</u> | <u>STD 7.02 AT 20 °C</u> | | |

Comments: _____

Well capped and locked: Yes No Logbook/Pg#: WMSM1-1122 / 23

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: AT SICKLE (RFS) _____
Print and sign name

FEB 12 1999

Data Checked by: _____
Print and sign name

Date

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--------------------------------|---------------|--------------------------------|-------------|------------------------------|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: FA | | Calculations: 23/1.2 = 19.15 | | | |
| Well Number: 199-D5-16 | | A#: 4573 | | | | | |
| Total Purge Volume (gal): 26 | | Purge Flow Rate (gal/min): 1.2 | | | | | |
| Pump Type: 12V/1.2g | Time on: 0854 | Water: 0856 | Purge: 0910 | Samp.: 0910 | Off: 0911 | 6402 0910 | |

SAMPLES COLLECTED

BOTM40 (Filtered) Mobile Field Laboratory COC No.: C99-018-14
 1:40mL;G Chromium - Hex (None) 71470.0

Total No. Bottles: 1 Containment Code: 95 Collector: D. R. BREWINGTON (RFS)

FIELD MEASUREMENTS

| | | | | | | | |
|------------------------------|------|-------------------------|------|------|------|--|--------------------|
| Water Level (TOC): 57.77 TOC | | Drawdown (TOC): NO DATA | | | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |
| Prev. pH: | | Prev. DTW: | | | | E-Tape No.: #344 | |
| Time | 0853 | 0856 | 0900 | 0905 | 0910 | 0911 | NO DATA |
| pH | 7.57 | 7.71 | 7.79 | 7.79 | 7.80 | 7.80 | |
| Temp. (°C) | 22.1 | 21.9 | 22.0 | 22.0 | 22.0 | 21.9 | |
| Cond. (µs/cm) | 1274 | 1262 | 1251 | 1244 | 1242 | 1236 | |
| Turb. (NTU) | 2.55 | | 2.13 | | 1.80 | 1.75 | |
| D. O. (mg/L) | | | | | | | |
| T. Hex 70.06 | GD | 045700 | | | | → .46 | |

FIELD OBSERVATIONS

Weather: WINDY CALM
 Field Comments: _____

| | |
|--|--|
| Pre Check: <u>PH 7.00 NT 70.0°C</u> <u>SID 7.02 NT 70.0°C</u> | Post Check: <u>COND 434 SID 445</u> <u>PH 7.01 NT 22.5°C</u> <u>7.00 NT 75°C</u> |
|--|--|

Comments: _____

Well capped and locked: Yes No Logbook/Pg#: WIN. SIM. H22 / 23
 Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: BT SICKLE (RFS) Date: FEB 12 1999
Print and sign name Date

Data Checked by: _____ Date: _____
Print and sign name Date

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|-------------------------------------|----------------------|-------------------------------------|--------------------|--|------------------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 12 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: | | Calculations: $28/2 = 14 \text{ MIN}$ <i>purge</i> | | | |
| Well Number: 199-D5-20 | | A#: 4577 | | | | | |
| Total Purge Volume (gal): 38 | | Purge Flow Rate (gal/min): 2 | | | | | |
| Pump Type: HYDRO-STAIR | Time on: 1056 | Water: 1057 | Purge: 1111 | Samp.: 1112 | Off: 1116 | | |

SAMPLES COLLECTED

BOTM41 (Filtered) Mobile Field Laboratory

COC No.: C99-018-16

36600 1:40mL;G Chromium - Hex (None)

Total No. Bottles: 1

 Containment Code: **723**

 Collector: **AG RIZZO**

FIELD MEASUREMENTS

| | | | | | | | | | |
|--|-------------|------------------------------|-------------|-------------------------|------------------------------|------------------------------|--|--|--|
| Water Level (TOC): 62.35 <i>amp</i> | | Drawdown (TOC): 63.12 | | Oil Sheen | | Yes <input type="checkbox"/> | | No <input checked="" type="checkbox"/> | |
| Prev. pH: N/A <i>PIATE</i> | | Prev. DTW: NA | | E-Tape No.: 99-1 | | | | | |
| Time | 1100 | 1105 | 1111 | 1116 | 2-12-99 PIATE | | | | |
| pH | 7.41 | 7.94 | 8.02 | 8.04 | | | | | |
| Temp. (°C) | 16.7 | 16.8 | 16.9 | 16.6 | | | | | |
| Cond. (µs/cm) | 803 | 786 | 785 | 792 | | | | | |
| Turb. (NTU) | 8.55 | 2.41 | 2.17 | 1.96 | | | | | |
| D. O. (mg/L) | | | | | | | | | |
| FILTERED SAMPLE = 1.21 <i>NTU</i> | | | | | | | | | |
| GD 045760 | | | | | | | | | |

FIELD OBSERVATIONS

 Weather: **SUNNY 30-35°F**

Field Comments: _____

| | |
|---|--|
| Pre Check: 6.99 AT 20°C STD = 7.02 AT 20°C | Post Check: 7.06 AT 20.5°C STD = 7.07 AT 20°C |
|---|--|

Comments: _____

| | |
|---|--|
| Well capped and locked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Logbook/Pg#: WIN-SIML H 21, PAGE 68 |
| Samples Surveyed for Gamma Radiation by RPTs: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | FEB 12 1999 |
| Data Recorded by: RA FOX (RFS) | Date: _____ |
| Data Checked by: _____ | Date: _____ |

Memorandum

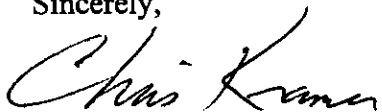
To: Doris Ayres, Sample Management
From: Chris Kramer, Analytical Field Services
Date: 3/2/99
Re: Field Screening Results related to SAF C99-018

This package comprises field analytical sample results for immediate distribution to concerned parties. Please perform distribution. A Microsoft Office binder file has been prepared and electronically sent to you. It contains this memo, a brief sample narrative, and copies of each result table included in this package. You may choose to use the file for notification and data management.

The associated Chain-of-Custody documentation and any supplementary information provided by samplers is included in the physical package delivery.

Supporting information concerning these analyses is recorded in logbook EL-1390-2. Anyone with questions regarding the field screening is welcome to contact me.

Sincerely,



Chris Kramer,
Analytical Field Services

DISTRIBUTE IMMEDIATELY

Data Deliverable Cover Sheet

Date: Tuesday, March 02, 1999

Deliverable type (check one): Preliminary Test Results
 Final Data Deliverable

Sample authorization form number: C99-018

Attachments (check all that apply or n/a): Narrative Summary
 Test Results
 Chains of Custody

Total number of pages (including cover sheet): 16 pages

Comments:

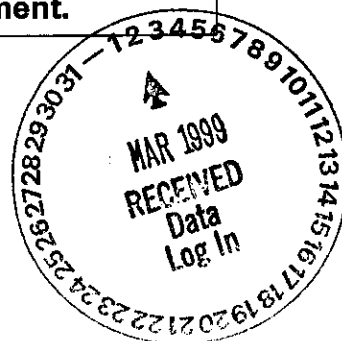
(Note: If Preliminary results were provided verbally, document information provided below including instrument used and results as communicated to the project.)

CD Kramer
Analyst Signature

3/2/99
Date

Distribution: Sample Management – Doris Ayres B1-35
Please make distribution to customer(s).

Requires distribution to listed project personnel by Sample Management.



Sample Narrative

For SAF / Analytical Date: C99-018 / 2-26-99

Prepared by: Chris Kramer, Analytical Field Services

Date: March 1, 1999



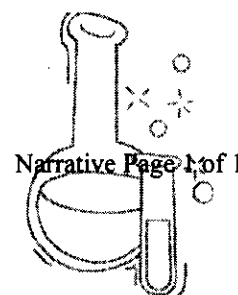
Eight HR3 groundwater monitoring samples were collected using SAF number C99-018 on 2-26-99. Samples were received from Waste Management personnel at WSCF, and transported to the mobile lab, HO-68N-1985, located in the 200W area, (ZP-1), for analysis on the day of sample collection. [Samples were received and analyzed in conjunction with groundwater samples from another project, (100-KR-4 / SAF C99-019).]

Samples were accompanied by Chain-of-Custody documentation. Supplemental sample information was also provided by five xeroxed Groundwater Sample Reports. These reports indicate samples B0TM83 and B0TM84 are a matrix spike and matrix spike duplicate having no associated well location. All forms are included in the physical data package delivered to Sample Management.

Samples were analyzed for hexavalent chromium using Accuvac® vials (lot M8233) and a HACH spectrophotometer, S/N 980600009425. Procedure BHI-EE-05, FSP 1.17 describes the method. Analysis was routine.

Additional information may be found in logbook EL-1390-2, *Miscellaneous Field Sampling*, including laboratory quality control results related to the day's activities. Original field screening notes (Sample Documentation) are included in the physical data package delivered to Sample Management.

All non-hazardous waste was disposed onsite. Regulated liquid waste was labeled and returned to the HR3 Pump & Treat project on Monday, March 1.



On-Site Measurement of Cr +6

100-HR-3 Groundwater

SAF: C99-018

Procedure: BHI-EE-05, FSP 1.17

Logbook: EL-1390-2 Page 52

Date: 2/26/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Cr +6 (mg/L) |
|-----------|-------------|---------|----------------|----------------|---------------------|--------------|---------------|---------------|--------------------|--------------|
| 199-D8-68 | B0TM14 | C99-018 | 2/26/99 | 9:27 | RTS | Water | 2/26/99 | 15:28 | CDK | 0.049 |
| 199-D8-69 | B0TM15 | C99-018 | 2/26/99 | 9:53 | RTS | Water | 2/26/99 | 15:29 | CDK | 0.083 |
| 199-D8-70 | B0TM16 | C99-018 | 2/26/99 | 10:15 | RTS | Water | 2/26/99 | 15:30 | CDK | 0.123 |
| 199-D8-55 | B0TM42 | C99-018 | 2/26/99 | 8:42 | RTS | Water | 2/26/99 | 15:31 | CDK | 0.021 |
| 199-D8-70 | B0TM79 | C99-018 | 2/26/99 | 10:22 | RTS | Water | 2/26/99 | 15:32 | CDK | 0.130 |
| 199-D8-70 | B0TM80 | C99-018 | 2/26/99 | 10:30 | RTS | Water | 2/26/99 | 15:33 | CDK | 0.133 |
| | B0TM83 | C99-018 | 2/26/99 | 10:15 | RTS | Water | 2/26/99 | 15:34 | CDK | 0.021 |
| | B0TM84 | C99-018 | 2/26/99 | 10:15 | RTS | Water | 2/26/99 | 15:37 | CDK | 0.023 |

Analyst: C.D. Kramer

Date: 3/2/99

C:\Kramers_documents\Hexavalent Cr[022699 C99-018.xls]Sheet1

B0TM83 Matrix Spike

B0TM84 Matrix Spike Dup

Field Screening Chain of Custody/Sample Documentation

Project: 100-AR3-ZAM, 100-KR4-ZAM

Date: 2/26/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | mg/L Ref |
|---------|----------------|-------------|-----------|---------------|-------------------|--------------------|-------------|
| Blank | | | | 14:58 | C _r +6 | 0.002 | |
| 0.105td | | | | 15:06 | | | 0.108 |
| BOTM43 | | | | 15:00 | | | 0.108 |
| 1 44 | | | | 15:01 | | | 0.031 |
| 45 | | | | 15:02 | | | 0.064 |
| 46 | | | | 15:03 | | | 0.065 |
| 47 | | | | 15:04 | | | 0.117 |
| 48 | | | | 15:04 | | | 0.065 |
| BOTM85 | | | | 15:05 | | | 0.031 |
| 86 | | | | 15:05 | | | 0.032 |
| 87 | | | | 15:06 | | ✓ | 0.032 |

Notes: Ac 1420/4v 1555 Zeroed w/ zero vial CK wt 193.61

Returned 4 samples @ 1550 3/1
1445

Samples Collected By: _____ Received By: _____ Analyzed By: Channer
 Date/Time: _____

Field Screening Chain of Custody/Sample Documentation

Project: 100-HR3-IAM, 100-KR4-IAM

Date: 2/26/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | mg/L Ref | |
|--------|----------------|-------------|-----------|---------------|----------|--------------------|----------|--|
| BOTM14 | | | | 15:28 | Crtb | | 0.049 | |
| 15 | | | | 15:29 | | | 0.083 | |
| 16 | | | | 15:30 | | | 0.123 | |
| BOTM42 | | | | 15:31 | | | 0.021 | |
| 79 | | | | 15:32 | | | 0.130 | |
| 80 | | | | 15:33 | | | 0.133 | |
| 83 | | | | 15:34 | | | 0.021 | |
| 84 | | | | 15:37 | | v | 0.023 | |
| | | | | | | | | |
| | | | | | | | | |

Notes: Check Blk + Std before and after - similar values.
Used Accuvac lot M8233 for all today.

Samples Collected By: _____ Received By: _____ Analyzed By: C. Kramer
 Date/Time: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|-------------------------------------|----------------------|----------------------------|--------------------|--------------------------|------------------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: FEB 26 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: <i>104</i> | | Calculations: | | | |
| Well Number: 199-D8-55 | | A#: <i>A 4584</i> | | <i>25 / 2 = 12.5</i> | | | |
| Total Purge Volume (gal): <i>26</i> | | Purge Flow Rate (gal/min): | | | | | |
| Pump Type: <i>Hydro</i> | Time on: <i>0833</i> | Water: <i>0833</i> | Purge: <i>0846</i> | Samp.: <i>0846</i> | Off: <i>0847</i> | <i>0846</i> | |

SAMPLES COLLECTED

BOTM42 (Filtered) Mobile Field Laboratory COC No.: C99-018-18
 1;40mL;G Chromium - Hex (None) *8206080*

Total No. Bottles: 1 Containment Code: Collector: *H. N. Nyswiler*

| FIELD MEASUREMENTS | | | | | | | | | |
|--------------------------------------|--------------|-------------|--------------------------------|-------------|-------------|--|--|--|--|
| Water Level (TOC): <i>55.23 P.P.</i> | | | Drawdown (TOC): <i>NO DATA</i> | | | Oil Sheen Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| Prev. pH: | | | Prev. DTW: | | | E-Tape No.: <i>391</i> | | | |
| Time | <i>0838</i> | <i>0840</i> | <i>0844</i> | <i>0846</i> | <i>0847</i> | <i>720</i> | | | |
| pH | <i>8.35</i> | <i>8.43</i> | <i>8.45</i> | <i>8.47</i> | <i>8.47</i> | | | | |
| Temp. (°C) | <i>20.5</i> | <i>20.5</i> | <i>20.5</i> | <i>20.6</i> | <i>20.5</i> | | | | |
| Cond. (µs/cm) | <i>225</i> | <i>223</i> | <i>224</i> | <i>225</i> | <i>225</i> | | | | |
| Turb. (NTU) | <i>3.72</i> | <i>2.64</i> | | <i>.97</i> | <i>.45</i> | | | | |
| D. O. (mg/L) | | | | | | | | | |
| <i>P. H. 203</i> <i>7.026</i> | <i>67045</i> | <i>700</i> | <i>→ .02</i> | | | | | | |

| FIELD OBSERVATIONS | | | | | | | | | |
|------------------------------------|--|--|--|--|------------------------------------|--|--|--|--|
| Weather: <i>Clear 62/41</i> | | | | | | | | | |
| Field Comments: _____ | | | | | | | | | |
| _____ | | | | | | | | | |
| Pre Check: <i>COND 445 SID 445</i> | | | | | Post Check: <i>COND 441 SW 445</i> | | | | |
| <i>PH 7.00 AT 7.0</i> | | | | | <i>PH 7.02 AT 15.7</i> | | | | |
| <i>SID 8.11</i> | | | | | <i>SID 7.05 AT 15.0</i> | | | | |
| Comments: <i>Inside BHI RBA</i> | | | | | | | | | |

| | |
|---|---------------------------------------|
| Well capped and locked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Logbook/Pg#: <i>100HR3IAM-142 / 2</i> |
| Samples Surveyed for Gamma Radiation by RPTs: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | FEB 26 1999 |
| Data Recorded by: <i>AT SICKLE (RFS)</i> | Date: _____ |
| Data Checked by: _____ | Date: _____ |

GROUNDWATER SAMPLE REPORT

No. 1000

| | | | | | | | |
|--------------------------------|---------------|-------------|----------------------------|-------------|------|---|--|
| Project: CERCLA / 100HR3IAM(1) | | | | Feb 26 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | | QC Type: | | | Calculations: $55/8 \text{ gpm} = 6.87$ 0.277 | |
| Well Number: 199-D8-68 | | | A#: 132772 | | | | |
| Total Purge Volume (gal): 80 | | | Purge Flow Rate (gal/min): | | | | |
| Pump Type: SLOTT | Time on: 0920 | Water: 0920 | Purge: 0927 | Samp.: 0927 | Off: | | |

SAMPLES COLLECTED

BOTM14 (Filtered) Mobile Field Laboratory COC No.: C99-018-20
 1;40mL;G Chromium - Hex (None) 8766080

Total No. Bottles: 1

Containment Code:

Collector: He H. Hyswot

FIELD MEASUREMENTS

| | | | | | |
|------------------------------|------------|-------------------------|------|---|--|
| Water Level (TOC): 58.96 P.P | | Drawdown (TOC): NO DATA | | Oil Sheen <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: 4321 | |
| Time | 0923 | 0925 | 0927 | 0930 | |
| pH | 8.69 | 8.60 | 8.57 | 8.54 | |
| Temp. (°C) | 15.7 | 15.8 | 15.8 | 15.8 | |
| Cond. (µs/cm) | 215 | 213 | 212 | 212 | |
| Turb. (NTU) | 5.77 | 4.53 | 1.53 | .78 | |
| D. O. (mg/L) | | | | | |
| T. Turb. | 0.004576 → | | | .18 | |

FIELD OBSERVATIONS

Weather: CLEAR CALM

Field Comments: _____

| | |
|---|---|
| Pre Check: COND 441 SID 445 PH 7.02 AT 15.7°C 5.71 7.65 AT 15°C | Post Check: COND 450 SID 445 PH 7.07 AT 12.2 7.65 AT 15°C |
|---|---|

Comments: Contact prior to sampling B.Bone (531-0695) E.Henderson (531-0679)/Transducer

Well capped and locked: Yes No

Logbook/Pg#: WIN-5192 1127 / 712

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: AT SICKLE (170) [Signature]

FEB 26 1999

Data Checked by: _____

Date _____
Date _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|-------------------------------------|----------------------|--------------------|-------------------------------------|--------------------------|------------------|---|--|
| Project: CERCLA / 100HR3IAM(1) | | | | Date: FEB 26 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | | QC Type: | | | Calculations: $61/8 = 7.62$ 0.253 | |
| Well Number: 199-D8-69 | | | A#: <u>B2773</u> | | | | |
| Total Purge Volume (gal): <u>50</u> | | | Purge Flow Rate (gal/min): <u>8</u> | | | | |
| Pump Type: <u>Elect</u> | Time on: <u>0443</u> | Water: <u>0445</u> | Purge: <u>0453</u> | Samp.: <u>0453</u> | Off: <u>0455</u> | | |

SAMPLES COLLECTED

BOTM15 (Filtered) Mobile Field Laboratory COC No.: C99-018-22
 1:40mL;G Chromium - Hex (None) 8266080

Total No. Bottles: 1 Containment Code: Collector: Hollingsworth

FIELD MEASUREMENTS

| | | | | | | |
|--------------------------------------|-------------|-----------------|--------------|-------------------------|------------------------------|--|
| Water Level (TOC): <u>94.40 P.P.</u> | | Drawdown (TOC): | | Oil Sheen | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: <u>#79A</u> | | |
| Time | <u>0446</u> | <u>0448</u> | <u>0453</u> | <u>0455</u> | | |
| pH | <u>7.87</u> | <u>7.88</u> | <u>7.88</u> | <u>7.87</u> | | |
| Temp. (°C) | <u>18.5</u> | <u>18.5</u> | <u>18.6</u> | <u>18.5</u> | | |
| Cond. (µs/cm) | <u>330</u> | <u>331</u> | <u>326</u> | <u>326</u> | | |
| Turb. (NTU) | <u>1.87</u> | | <u>3.24</u> | <u>.56</u> | | |
| D. O. (mg/L) | | | | | | |
| <u>filter</u> | <u>7.06</u> | <u>6.00</u> | <u>4.520</u> | <u>.17</u> | | |

FIELD OBSERVATIONS

Weather: Clear calm
 Field Comments: _____

| | | | |
|------------|--------------------------|-------------|--------------------------|
| Pre Check: | <u>cond 450 sid 445</u> | Post Check: | <u>cond 446 sid 445</u> |
| | <u>pH 7.07 AT 12.2°C</u> | | <u>pH 7.02 AT 15.5°C</u> |
| | <u>sid 2.05 AT 15°C</u> | | <u>sid 2.05 AT 15°C</u> |

Comments: Contact prior to sampling B.Bone (531-0695) E.Henderson (531-0679)/Transducer

Well capped and locked: Yes No Logbook/Pg#: W.M.S.M.I. 1122 / 32

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: AT SICKLE (HFS) Date: FEB 26 1999

Data Checked by: _____ Date: _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|-------------------------------------|----------|---------------------------------------|--------|----------------------------|------|-------------|--|
| Project: CERCLA / 100HR3IAM(1) | | | | Date: FEB 26 1999 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: <i>NIT</i> | | Calculations: <i>KAB'S</i> | | | |
| Well Number: 199-D8-70 | | A#: <i>B2774</i> | | | | | |
| Total Purge Volume (gal): <i>NO</i> | | Purge Flow Rate (gal/min): <i>NIT</i> | | | | | |
| Pump Type: <i>KAB'S</i> | Time on: | Water: | Purge: | Samp.: | Off: | | |

SAMPLES COLLECTED

| | | | |
|-------------------|-------------------------|----------------|---------------------|
| BOTM16 (Filtered) | Mobile Field Laboratory | | COC No.: C99-018-24 |
| 1;40mL;G | Chromium - Hex (None) | <i>8266050</i> | <i>52'</i> |
| BOTM79 (Filtered) | Mobile Field Laboratory | ↓ | <i>54'</i> |
| 1;40mL;G | Chromium - Hex (None) | | <i>62'</i> |
| BOTM80 (Filtered) | Mobile Field Laboratory | | |
| 1;40mL;G | Chromium - Hex (None) | | |

Total No. Bottles: 3

Containment Code:

Collector: *HOLLINGSWORTH*

FIELD MEASUREMENTS

| | | | | | | | | | |
|-------------------------------------|-------------|-------------|-----------------|------------------|--|-------------------------|--|------------------------------|--|
| Water Level (TOC): <i>49.48 766</i> | | | Drawdown (TOC): | | | Oil Sheen | | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Prev. pH: | | | Prev. DTW: | | | E-Tape No.: <i>#399</i> | | | |
| Time | <i>1015</i> | <i>1022</i> | <i>1030</i> | TABLE | | | | | |
| pH | <i>7.87</i> | <i>7.95</i> | <i>7.98</i> | | | | | | |
| Temp. (°C) | <i>19.6</i> | <i>20.2</i> | <i>21.1</i> | | | | | | |
| Cond. (µs/cm) | <i>411</i> | <i>397</i> | <i>391</i> | | | | | | |
| Turb. (NTU) | <i>.46</i> | <i>.57</i> | <i>1.16</i> | | | | | | |
| D. O. (mg/L) | | | | | | | | | |
| <i>Filter</i> | <i>.14</i> | <i>.18</i> | <i>.13</i> | | | | | | |

FIELD OBSERVATIONS

Weather: *CLDRA CALM*

Field Comments:

| | |
|--------------------------|--------------------------|
| <i>COND 446 STD 445</i> | <i>COND 441 STD 445</i> |
| <i>PH 7.02 AT 15.5°C</i> | <i>PH 7.00 AT 15.8°C</i> |
| <i>STD 7.05 AT 15°C</i> | <i>STD 7.05 AT 15°C</i> |

Comments: *Contact B. Bone E. Henderson/Transducer/Kabis - 3 intervals (below TOC): 1st - If DTW <50 ft sample at 50/f >50 sample at 52/ 2nd - 54 ft/3rd - 62 ft*

Well capped and locked: Yes No

Logbook/Pg#: *W.M.S.M.I.-H 22 / 12*

Samples Surveyed for Gamma Radiation by RPTs: Yes No

FEB 26 1999

Data Recorded by: *AT SICKLE (RES)* _____

Date _____

Data Checked by: _____

Date _____

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|--|--|----------|----------------------------|---------------|--------|-------------------------|--|
| Project: 100-HR3-IAM (1 & 2) GW MONITORING, FEB. 1999 | | | | Date: 2-26-99 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | | QC Type: | | | Calculations: pH | |
| Well Number: MS/MSD | | | A#: pH | | | | |
| Total Purge Volume (gal): | | | Purge Flow Rate (gal/min): | | | | |
| Pump Type: pH | | Time on: | Water: | Purge: | Samp.: | | |

SAMPLES COLLECTED

| | | | |
|-------------------|-------------------------|---------|---------------------|
| BOTM83 (Filtered) | Mobile Field Laboratory | | COC No.: C99-018-37 |
| 1;40mL;G | Chromium - Hex (None) | 8266080 | |
| BOTM84 (Filtered) | Mobile Field Laboratory | | COC No.: C99-018-38 |
| 1;40mL;G | Chromium - Hex (None) | 8266080 | |

Total No. Bottles: 2

Containment Code: pH

Collector: SICKLE

FIELD MEASUREMENTS

| | | | | | | | | | |
|--------------------|--|-----------------|--|-------------|--|------------------------------|--|-----------------------------|--|
| Water Level (TOC): | | Drawdown (TOC): | | Oil Sheen | | Yes <input type="checkbox"/> | | No <input type="checkbox"/> | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: | | | | | |
| Time | | | | | | | | | |
| pH | | | | | | | | | |
| Temp. (°C) | | | | | | | | | |
| Cond. (µs/cm) | | | | | | | | | |
| Turb. (NTU) | | | | | | | | | |
| D. O. (mg/L) | | | | | | | | | |

FIELD OBSERVATIONS

Weather: pH

Field Comments:

Pre Check: _____ Post Check: _____

Comments:

Well capped and locked: Yes No Logbook/Pg#: WIM-SML-H22 / 32

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: SICKLE *[Signature]* Date: 2-26-99

Data Checked by: _____ Date: _____

Data Deliverable Cover Sheet

Date: Monday, March 15, 1999

Deliverable type (check one): Preliminary Test Results
 Final Data Deliverable

Sample authorization form number: C99-018

Attachments (check all that apply or n/a): Narrative Summary
 Test Results
 Chains of Custody

Total number of pages (including cover sheet): 8 pages

Comments:

(Note: If Preliminary results were provided verbally, document information provided below including instrument used and results as communicated to the project.)

CD Kramer
Analyst Signature

3/15/99
Date



Distribution: Sample Management – Doris Ayres B1-35
Please make distribution to customer(s).

Requires distribution to listed project personnel by Sample Management.

Memorandum

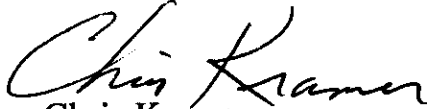
To: Doris Ayres, Sample Management
From: Chris Kramer, Analytical Field Services
Date: 3/15/99
Re: Field Screening Results related to SAF C99-018

This package comprises field analytical sample results for immediate distribution to concerned parties. Please perform distribution. A Microsoft Office binder file has been prepared and electronically sent to you and Jeanette Duncan. It contains this memo, a brief sample narrative, and copies of each result table included in this package. You may choose to use the file for notification and data management.

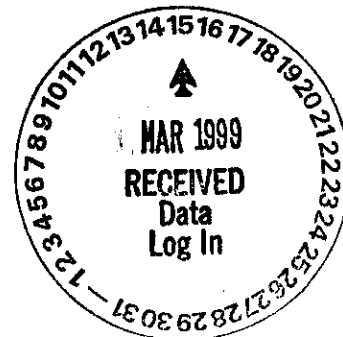
The associated Chain-of-Custody documentation and any supplementary information provided by samplers is included in the physical package delivery.

Supporting information concerning these analyses is recorded in logbook EL-1390-2. Anyone with questions regarding the field screening is welcome to contact me.

Sincerely,



Chris Kramer,
Analytical Field Services



DISTRIBUTE IMMEDIATELY

On-Site Measurement of Sulfate

100-HR-3 Groundwater

SAF: C99-018

Procedure: HACH SulfaVer 4, Method 8051

Logbook: EL-1390-2 Page 53

Date: 3/10/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Sulfate (mg/L) | Comments |
|----------|-------------|---------|----------------|----------------|---------------------|--------------|---------------|---------------|--------------------|----------------|----------|
| 199-D3-2 | B0TM24 | C99-018 | 3/10/99 | 8:56 | AGR | Water | 3/10/99 | 14:24 | CDK | 69 | |

Analyst: C.D. Kramer

Date: 3/15/99

C:\Kramers_documents\Sulfate[031099 C99-018.xls]Sheet1

On-Site Measurement of Cr +6

100-HR-3 Groundwater

SAF: C99-018

Procedure: BHI-EE-05, FSP 1.17

Logbook: EL-1390-2 Page 53

Date: 3/10/99

| Location | HEIS Number | SAF | Date Collected | Time Collected | Samplers (Initials) | Sample Media | Date Analyzed | Time Analyzed | Analyst (Initials) | Cr +6 (mg/L) |
|----------|----------------|---------|-------------------|-------------------|------------------------|-----------------|------------------|------------------|-----------------------|-----------------|
| 199-D3-2 | B0TM23 | C99-018 | 3/10/99 | 8:56 | AGR | Water | 3/10/99 | 15:05 | CDK | 0.023 |

Analyst: C.D. Kramer

Date: 3/15/99

C:\Kramers_documents\Hexavalent Cr\031099 C99-018.xls]Sheet1

Hexavalent Chromium/ Sulfate Daily Activity Log

Project: 100-HR-3 IAM / SAF C99-018

Date: 3/10/99

CDK
3/15

| | |
|-------|---|
| 10:42 | Returned to lab at D Area Hot Spot drilling site from 200W, HO 68N-1985 mobile laboratory. Two HR3 samples collected by AG Rizzo were delivered to Doug Bowers at the field lab set up to support D Area Hot Spot drilling. One sample calls for hexavalent chromium; the other calls for sulfate analysis. Sulfate analysis request not expected. Must return to 200W for additional supplies. |
| 12:45 | Prepared 20 mg/L sulfate standard at 200W, HO 68N-1985 by adding 500 uL of 1000 mg/L HACH sulfate standard, lot # N7108, to 24.5 g of deionized water. Check weight reads 193.61 g. |
| 13:30 | Returned to 100 Area lab with sulfate standard and reagents. Set up to analyze sulfate samples using a HACH DR 2010 spectrophotometer, Method 952. Used large pipet to make a 3X volumetric dilution of sample, (mixed 2 parts water/ 1 part sample, 15.7 g water / 23.7 g total weight with sample—See 14:45) |
| 14:22 | Began reading analyzed sulfate samples. |
| 14:45 | Set up for chromium analysis. Prepared standard volumetrically, 29.7 ml of water and 300 uL of 10mg/L chromium std, lot# N5272. (Used same PocketPro scale as at 13:30, serial no. 32530238, to note masses. Water=29.6 g. Total w/ std= 29.9 g . Challenged scale accuracy with a single 100 g brass check weight. Result= only 99.5 g. Additional testing needed on this scale.) |
| 14:56 | Used ChromaVer reagent lot M8233 to run hexavalent chromium samples. |
| 15:03 | Began reading analyzed hexavalent chromium samples. |

SULFATE RESULTS

| Sample # | Well # | Concentration (mg/L SO ₄) | Date Sampled | Time Sampled | Comment |
|---------------|----------|---------------------------------------|--------------|--------------|--|
| Reagent Blank | - | 0 | - | - | Undetected, 10mg/L is lower reporting limit <i>CK 3/15</i> |
| 20 mg/L std. | - | 20 | - | - | 100% Rec. |
| B0TM24 | 199-D3-2 | 69 | 3/10/99 | 8:56 | 3X dilution reads 23 |

HEXAVALENT CHROMIUM RESULTS

| Sample # | Well # | Concentration (mg/L) | Date Sampled | Time Sampled |
|----------------|----------|----------------------|--------------|--------------|
| Reagent Blank | - | 0.002 (<0.005) | - | - |
| 0.10 mg/L std. | - | 0.102 | - | - |
| B0TM23 | 199-D3-2 | 0.023 | 3/10/99 | 8:56 |

1530 Cleaned up, readied waste for delivery to HR3 pump and treat, and resumed sampling support for ongoing Hot Spot drilling.

Continued on Page NA

Read and Understood By

CDK
Signed

3/15/99
Date

Signed

Date

Field Screening Chain of Custody/Sample Documentation

Project: 100-HR-3 GW Monitoring

Date: 3/10/99

| Sample | Time Collected | Description | Container | Time Analyzed | Analysis | Results / Comments | mg/L SO_4^{-2} Ref |
|---------|----------------|---------------------|-----------|---------------|------------------|---|-------------------------|
| Blank | NA | DI H ₂ O | - | 14:22 | SO ₄ | | 0 |
| 20mg/L | NA | Std | 60ml aG | 14:23 | ↓ | | 20 |
| BotM24 | 8:56 | | | 14:24 | ↓ | 3X dilution (2 parts H ₂ O / 1 sample) | 23 diluted |
| | | | | | | | mg/L Cr ⁺⁶ ↓ |
| Blank | NA | DI H ₂ O | - | 15:03 | Cr ⁺⁶ | | 0.002 |
| 0.1mg/L | NA | Std | 60ml aG | 15:04 | ↓ | 102% Rec. | 0.102 |
| BotM23 | 8:56 | | 40ml aG | 15:05 | ↓ | | 0.023 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Notes: Check Wt 193.61 g Made 20 mg/L ^{SO₄⁻²} std by diluting 1000 mg/L Lot # N7108. Used 500 μl std and 24.5 g DI water. Made-up @ 200W, ZP-1 at 12:45p. Transported std + reagents to lab at 100P Hot Spot drilling for analysis of sulfate. 15.7g H₂O + 23.7g sample / Cr⁺⁶ std 29.7g H₂O / 300x 10mg/L = 29.9 PacketPro 32530238 100g test = 99.5g
29.6g ChromaVer 3 Reagent Lot M8233

Samples Collected By: AG Rizzo

Received By: D. Bowers

Analyzed By: CKramer

Date/Time: 3/10/99 10:15

GROUNDWATER SAMPLE REPORT

| | | | | | | | |
|---------------------------------------|---------------|------------------------------|-------------|--------------------------------------|-----------|-------------|--|
| Project: CERCLA / 100HR3IAM(2) | | | | Date: 3-10-99 | | Page 1 of 1 | |
| Sampling FY Quarter: 1999/2 | | QC Type: SPLIT | | Calculations: 109/6 19 | | | |
| Well Number: 199-D3-2 | | A#: N/A | | | | | |
| Total Purge Volume (gal): 210 | | Purge Flow Rate (gal/min): 6 | | | | | |
| Pump Type: SUBMERSIBLE HYDROSTATIC | Time on: 0819 | Water: 0820 | Purge: 0839 | Samp.: 0856 | Off: 0901 | | |

SAMPLES COLLECTED

25-99

- B0TM23 (Filtered) Mobile Field Laboratory COC No.: C99-018-1
- 40 1;60mL;G Chromium - Hex (None) 7147610
- B0TM24 Mobile Field Laboratory COC No.: C99-018-1
- 1;125mL;P IC Anions - 300.0 (Sulfate) (Cool 4C) 7237640
- B0TM25 (Filtered) Quanterra St. Louis R-10 3-10-99 COC No.: C99-018-2
- 1;500mL;G/P Chromium Hex - 7196 (Cool 4C) 8286070
- B0TM26 Quanterra St. Louis COC No.: C99-018-2
- 1;20mL;P Activity Scan (None) N/A
- 1;500mL;P IC Anions - 300.0 (Sulfate) (Cool 4C) 8286070

Total No. Bottles: 5

Containment Code: 402

Collector: AG RIZZO

FIELD MEASUREMENTS

| | | | | | | | | | |
|------------------------------|------|-----------------------|----------------------|------------------|------|------------------------------|------|--|--|
| Water Level (TOC): 82.16 TOC | | Drawdown (TOC): 82.11 | | Oil Sheen | | Yes <input type="checkbox"/> | | No <input checked="" type="checkbox"/> | |
| Prev. pH: | | Prev. DTW: | | E-Tape No.: 99-1 | | | | | |
| Time | 0825 | 0830 | 0835 | 0840 | 0845 | 0850 | 0855 | 0900 | |
| pH | 5.16 | 6.24 | 7.74 | 7.87 | 7.90 | 7.89 | 7.91 | 7.95 | |
| Temp. (°C) | 12.6 | 16.5 | 16.5 | 16.5 | 16.6 | 16.5 | 16.5 | 16.5 | |
| Cond. (µs/cm) | 336 | 340 | 327 | 327 | 326 | 323 | 323 | 327 | |
| Turb. (NTU) | | 67.7 | 7.74 | 8.7 | 9.5 | 10.5 | 5.0 | | |
| D. O. (mg/L) | | | 14.5 _{3.16} | | | | | | |
| FILTERED TURB (GD045700) | | | | | | | 0.4 | | |

FIELD OBSERVATIONS

Weather: PARTLY CLOUDY, 40° SW WIND 0-5
 Field Comments: DOING READINGS IN A BUCKET, MISSING LIQUID FLOW-THRU CELL.
COND. READING ON STAGNANT WATER: 323µS

Pre Check: pH = 7.00/25° COND = 447µS
 STD = 7.00/25°
 Post Check: pH = 7.13/10° COND = 440µS
 STD = 7.07/10°

Comments:

Well capped and locked: Yes No Logbook/Pg#: WM-SML-HZ1/84

Samples Surveyed for Gamma Radiation by RPTs: Yes No

Data Recorded by: JG Hogan JJ Hogan 3-10-99

Data Checked by: _____ Date