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E0020

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5/16/96

ERC FIELD SCREENING/EAL
DATA PACKAGE TRANSMITTAL FORM

Transmittal Date: 5/2/96

To: Sample Management
(organization)

From: EAL
(organization)

Delivery Group Number:

Data Package Contents:

Analytical results for EAL sample batches
960418A, 960419A and 960425A.



Transmitted by:
Paul E. Duerkson 5/2/96
PAUL E DUERKSEN

Sign/Print Name Date

Received by:

Sign/Print Name Date

cc:

April 29, 1996

TO: Jim Green, H9-10

INTRODUCTION:

The following samples were submitted to the EAL for analyses on April 18, 1996 and April 25, 1996. Your sample numbers were assigned the following EAL numbers.

<u>Customer Sample Number</u>	<u>EAL Number</u>	<u>Matrix Type</u>
B0HD93	EAL02419	water
B0HD94	EAL02420	water
B0HDB0	EAL02421	water
B0HD99	EAL02422	water
B0HDB1	EAL02423	water
B0HDB2	EAL02424	water
B0HD95	EAL02425	water
B0HD97	EAL02426	water
B0HDB4	EAL02427	water
B0HDD0	EAL02428	water
B0HDD1	EAL02429	water
B0HD98	EAL02430	water
B0HD97	EAL02431	water
B0HD96	EAL02432	water
B0HDD7	EAL02433	water
B0HDF2	EAL02434	water
B0HDB3	EAL02435	water
B0HDF0	EAL02436	water
B0HDD9	EAL02437	water
B0HDC0	EAL02438	water
B0HDF1	EAL02439	water
B0HDD4	EAL02440	water
B0HDH4	EAL02441	water
B0HDD6	EAL02442	water
B0HDD8	EAL02443	water
B0HD91	EAL02444	water
B0HDC2	EAL02448	water
B0HDF3	EAL02449	water
B0HDG3	EAL02450	water
B0HDC3	EAL02451	water
B0HDH8	EAL02452	water
B0HDG6	EAL02453	water
B0HDH2	EAL02454	water



The samples were assigned batch numbers of 960418A, 960419A, and 960425A. The corresponding Sampling Analysis Form (SAF) number was B96-104. EAL analyzed the samples in support of the Ion Exchange Batch Equilibrium Tests for 100D, 100H, and 100K well waters.

NOTABLE EVENTS:

There were no significant events encountered during analysis.

RESULTS:

A summary of results and associated quality control parameters is shown on spreadsheets included in this data package. All samples were analyzed in accordance with approved analytical methods and good laboratory practice. Please contact Stacey Bolling at 373-5433 or John McCluskey at 372-0642, if you have any questions.

Stacey O Bolling
Signature of Analyst

4/30/96
Date

Deane H. Call for JM McCluskey
Signature of Analyst

5-2-96
Date

Paul E Duerksen
Signature of QA Coordinator

5/2/96
Date

EAL
 BATCH # 960418A
 SAMPLE RESULTS

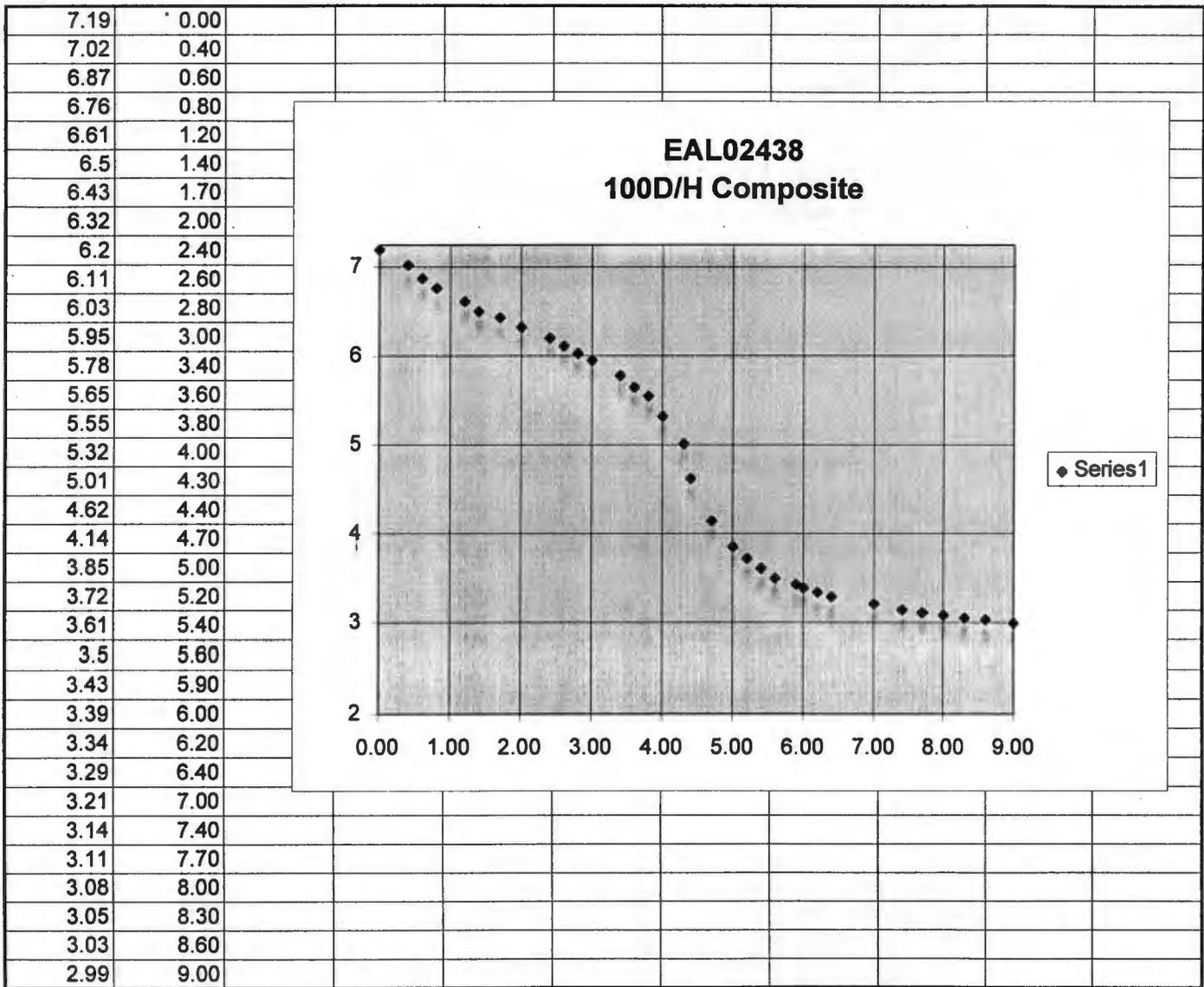
ANALYST SIGNATURE:

CUSTOMER ID	LABORATORY ID	ANALYTE	RESULT	UNITS	DATE PREPARED	INSTRUMENT SERIAL NUMBER	DATE ANALYZED	QUANTITATION LIMIT
BOHD93 Dowex 21 @ 0.2 g/L	EAL02419	Chromium	44	ug/L	4/18/96	1545	4/25/96	6
BOHD94 Dowex 21 @ 2.0 g/L	EAL02420	Chromium	6	ug/L	4/18/96	1545	4/25/96	6
BOHDB0 SIR 700 pH 5 @ 2.0 g/L	EAL02421	Chromium	55	ug/L	4/18/96	1545	4/25/96	6
BOHD99 SIR 700 pH 5 @ 0.2 g/L	EAL02422	Chromium	48	ug/L	4/18/96	1545	4/25/96	6
BOHDB1 SIR 700 pH 5 @ 20 g/L	EAL02423	Chromium	66	ug/L	4/18/96	1545	4/25/96	6
BOHDB2 Ionac 305 @ 0.2 g/L	EAL02424	Chromium	69	ug/L	4/24/96	1545	4/25/96	6
BOHD95 Dowex 21K @ 20 g/L	EAL02425	Chromium	6U	ug/L	4/24/96	1545	4/25/96	6
BOHDB4 Ionac 305 @ 20.0 g/L	EAL02427	Chromium	6	ug/L	4/18/96	1545	4/25/96	6
BOHD98 SIR 700 @ 20.0 g/L	EAL02430	Chromium	55	ug/L	4/18/96	1545	4/25/96	6
BOHD97 SIR 700 @ 2.0 g/L	EAL02431	Chromium	6U	ug/L	4/18/96	1545	4/25/96	6
BOHD96 SIR 700 @ 0.2 g/L	EAL02432	Chromium	27	ug/L		1545	4/25/96	6
BOHDD7 Dowex21K pH5 @ 0.2 g/L	EAL02433	Chromium	63	ug/L	4/18/96	1545	4/25/96	6
BOHDF2 SIR 700 pH5 @ 1.0 g/L	EAL02434	Chromium	38	ug/L	4/18/96	1545	4/25/96	6
BOHDB3 Ionac 305 @ 2.0 g/L	EAL02435	Chromium	26	ug/L	4/18/96	1545	4/25/96	6
BOHDF0 Dowex 21K pH5@ 20 g/L	EAL02436	Chromium	33	ug/L	4/18/96	1545	4/25/96	6
BOHDD9 Dowex 21K pH5@ 2.0 g/L	EAL02437	Chromium	29	ug/L	4/18/96	1545	4/25/96	6
BOHDF1 Dowex 21K pH5@ 1.0 g/L	EAL02439	Chromium	39	ug/L	4/24/96	1545	4/25/96	6

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U = analyte was not detected above the associated quantitation limit

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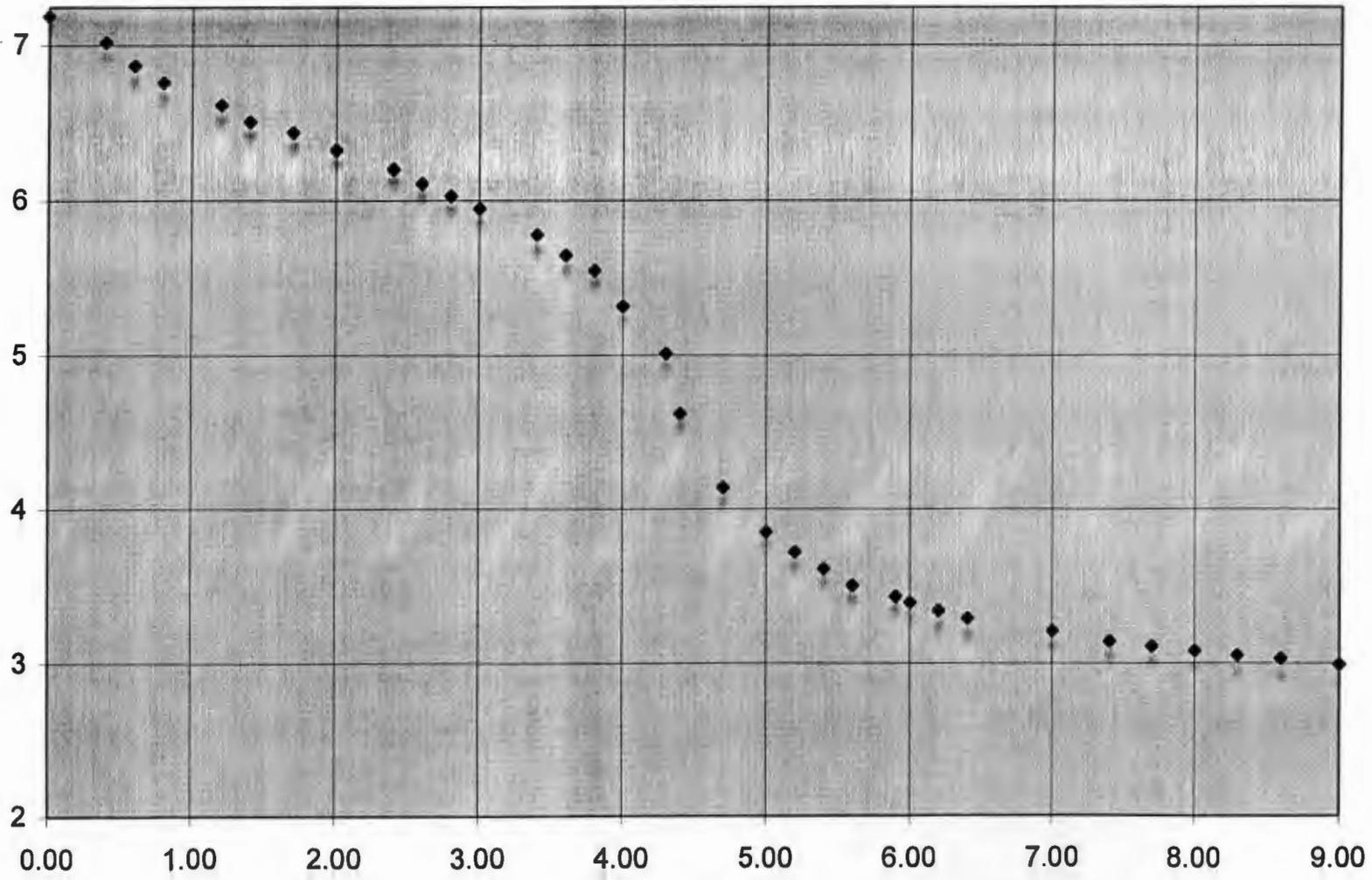


H2SO4 N = .0328
 Alkalinity = 144.3 ppm

9713512.2551

000005

EAL02438
100D/H Composite



9713912.2552

0000005

EAL
 BATCH # 960425A
 SAMPLE RESULTS

ANALYST SIGNATURE: *Steph D. Bell*

CUSTOMER ID OR HEIS NUMBER	LABORATORY ID	ANALYTE	RESULT	UNITS	DATE PREPARED	INSTRUMENT SERIAL NUMBER	DATE ANALYZED	QUANTITATION LIMIT
B0HDF3	EAL02449	Cr(VI)	.024U	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDG3	EAL02450	Cr(VI)	0.036	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDC3	EAL02451	Cr(VI)	0.105	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDH8	EAL02452	Cr(VI)	.024U	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDG6	EAL02453	Cr(VI)	.024U	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDH2	EAL02454	Cr(VI)	0.050	ug/mL	4/25/96	3614045014	4/25/96	.024U
B0HDC2	EAL02448	Chloride	4.92	ug/mL	4/25/96	14693	4/29/96	.021U
B0HDC2	EAL02448	Nitrate-Nitrogen	6.84	ug/mL	4/25/96	14693	4/25/96	.006U
B0HDC2	EAL02448	Sulfate	46.0	ug/mL	4/25/96	14693	4/25/96	.039U

U = analyte was not detected above the associated quantitation limit

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EAL
 BATCH # 960418A
 SAMPLE RESULTS

ANALYST SIGNATURE: *Shirley D. Bell*

CUSTOMER ID OR HEIS NUMBER	LABORATORY ID	ANALYTE	RESULT	UNITS	DATE PREPARED	INSTRUMENT SERIAL NUMBER	DATE ANALYZED	QUANTITATION LIMIT
B0HD93	EAL02419	Chloride	20.7	ug/mL	4/18/96	14693	4/19/96	.021U
B0HD93	EAL02419	Nitrate-Nitrogen	62.3	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD93	EAL02419	Sulfate	43.5	ug/mL	4/18/96	14693	4/19/96	.039U
B0HD94	EAL02420	Chloride	114	ug/mL	4/18/96	14693	4/19/96	.021U
B0HD94	EAL02420	Nitrate-Nitrogen	40.2	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD94	EAL02420	Sulfate	9.94	ug/mL	4/18/96	14693	4/19/96	.039U
BOHDB0	EAL02421	Chloride	12.7	ug/mL	4/18/96	14693	4/19/96	.021U
BOHDB0	EAL02421	Nitrate-Nitrogen	59.4	ug/mL	4/18/96	14693	4/19/96	.006U
BOHDB0	EAL02421	Sulfate	183	ug/mL	4/18/96	14693	4/19/96	.039U
B0HD99	EAL02422	Chloride	9.78	ug/mL	4/18/96	14693	4/22/96	.021U
B0HD99	EAL02422	Nitrate-Nitrogen	61.0	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD99	EAL02422	Sulfate	154	ug/mL	4/18/96	14693	4/19/96	.039U
B0HDB1	EAL02423	Chloride	38.9	ug/mL	4/18/96	14693	4/19/96	.021U
B0HDB1	EAL02423	Nitrate-Nitrogen	45.8	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDB1	EAL02423	Sulfate	314	ug/mL	4/18/96	14693	4/19/96	.039U
B0HD95	EAL02425	Chloride	287	ug/mL	4/18/96	14693	4/22/96	.021U
B0HD95	EAL02425	Nitrate-Nitrogen	5.26	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD95	EAL02425	Sulfate	<1.9	ug/mL	4/18/96	14693	4/22/96	.039U

U = analyte was not detected above the associated quantitation limit

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EAL
 BATCH # 960418A
 SAMPLE RESULTS

ANALYST SIGNATURE: *Shirley D Bell*

CUSTOMER ID OR HEIS NUMBER	LABORATORY ID	ANALYTE	RESULT	UNITS	DATE PREPARED	INSTRUMENT SERIAL NUMBER	DATE ANALYZED	QUANTITATION LIMIT
B0HDD0	EAL02428	Chloride	10.2	ug/mL	4/18/96	14693	4/22/96	.021U
B0HDD0	EAL02428	Nitrate-Nitrogen	57.8	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDD0	EAL02428	Sulfate	125	ug/mL	4/18/96	14693	4/19/96	.039U
B0HD98	EAL02430	Chloride	41.2	ug/mL	4/18/96	14693	4/19/96	.021U
B0HD98	EAL02430	Nitrate-Nitrogen	44.7	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD98	EAL02430	Sulfate	297	ug/mL	4/18/96	14693	4/19/96	.039U
BOHD97	EAL02431	Chloride	12.4	ug/mL	4/18/96	14693	4/22/96	.021U
BOHD97	EAL02431	Nitrate-Nitrogen	63.2	ug/mL	4/18/96	14693	4/19/96	.006U
BOHD97	EAL02431	Sulfate	85.3	ug/mL	4/18/96	14693	4/19/96	.039U
B0HD96	EAL02432	Chloride	8.90	ug/mL	4/18/96	14693	4/22/96	.021U
B0HD96	EAL02432	Nitrate-Nitrogen	59.8	ug/mL	4/18/96	14693	4/19/96	.006U
B0HD96	EAL02432	Sulfate	177	ug/mL	4/18/96	14693	4/19/96	.039U
B0HDD7	EAL02433	Chloride	19.5	ug/mL	4/18/96	14693	4/19/96	.021U
B0HDD7	EAL02433	Nitrate-Nitrogen	59.2	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDD7	EAL02433	Sulfate	132	ug/mL	4/18/96	14693	4/19/96	.039U
B0HDF2	EAL02434	Chloride	10.4	ug/mL	4/18/96	14693	4/22/96	.021U
B0HDF2	EAL02434	Nitrate-Nitrogen	59.4	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDF2	EAL02434	Sulfate	163	ug/mL	4/18/96	14693	4/19/96	.039U

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U = analyte was not detected above the associated quantitation limit

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EAL
 BATCH # 960418A
 SAMPLE RESULTS

ANALYST SIGNATURE: *Stacey D Bell*

CUSTOMER ID OR HEIS NUMBER	LABORATORY ID	ANALYTE	RESULT	UNITS	DATE PREPARED	INSTRUMENT SERIAL NUMBER	DATE ANALYZED	QUANTITATION LIMIT
B0HDF0	EAL02436	Chloride	303	ug/mL	4/18/96	14693	4/22/96	.021U
B0HDF0	EAL02436	Nitrate-Nitrogen	5.6	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDF0	EAL02436	Sulfate	<2.6	ug/mL	4/18/96	14693	4/22/96	.039U
B0HDD9	EAL02437	Chloride	65.7	ug/mL	4/18/96	14693	4/19/96	.021U
B0HDD9	EAL02437	Nitrate-Nitrogen	47.2	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDD9	EAL02437	Sulfate	19.3	ug/mL	4/18/96	14693	4/22/96	.039U
B0HDC0	EAL02438	Chloride	8.70	ug/mL	4/18/96	14693	4/22/96	.021U
B0HDC0	EAL02438	Nitrate-Nitrogen	56.9	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDC0	EAL02438	Sulfate	58.9	ug/mL	4/18/96	14693	4/22/96	.039U
B0HDF1	EAL02439	Chloride	68.5	ug/mL	4/18/96	14693	4/19/96	.021U
B0HDF1	EAL02439	Nitrate-Nitrogen	49.7	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDF1	EAL02439	Sulfate	91.4	ug/mL	4/18/96	14693	4/19/96	.039U
B0HDD8	EAL02443	Chloride	124	ug/mL	4/18/96	14693	4/19/96	.021U
B0HDD8	EAL02443	Nitrate-Nitrogen	42.5	ug/mL	4/18/96	14693	4/19/96	.006U
B0HDD8	EAL02443	Sulfate	48.3	ug/mL	4/18/96	14693	4/22/96	.039U

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U = analyte was not detected above the associated quantitation limit

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EAL
BATCH # 960418A
QUALITY CONTROL

ANALYST SIGNATURE:

ANALYTE	SAMPLE USED FOR QC	LCS RECOVERY	RELATIVE PERCENT DIFFERENCE BETWEEN DUPLICATES	METHOD BLANK CONCENTRATION
Chromium	EAL02419	95%	7%	6U
Chromium	EAL02432	75%	10%	6U
Chromium	EAL02440	95%	4%	6U

U = analyte was not detected above the associated quantitation limit

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EAL

BATCH # 960418A
QUALITY CONTROL

ANALYST SIGNATURE: *Shirley D. Bell*

ANALYTE	SAMPLE USED FOR QC	LCS OR SPIKE RECOVERY	RELATIVE PERCENT DIFFERENCE BETWEEN DUPLICATES	METHOD BLANK CONCENTRATION
Cr(VI)	EAL02428	98%	N/A	.024U
Chloride	EAL02423	103%	6%	.021U
Nitrate-Nitrogen	EAL02423	103%	2%	.006U
Sulfate	EAL02423	102%	3%	.039U
Chloride	EAL02433	95%	6%	.021U
Nitrate-Nitrogen	EAL02433	92%	0%	.006U
Sulfate	EAL02433	89%	1%	.039U
Chloride	EAL02438	99%	3%	.021U
Sulfate	EAL02438	97%	1%	.039U

U = analyte was not detected above the associated quantitation limit

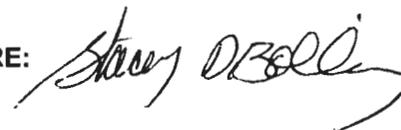
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EAL

BATCH # 960425A
QUALITY CONTROL

ANALYST SIGNATURE:



ANALYTE	SAMPLE USED FOR QC	LCS OR SPIKE RECOVERY	RELATIVE PERCENT DIFFERENCE BETWEEN DUPLICATES	METHOD BLANK CONCENTRATION
Cr(VI)	EAL02449	118%	N/A	.024U
Chloride	EAL02448	96%	1%	.021U
Nitrate-Nitrogen	EAL02448	96%	1%	.006U
Sulfate	EAL02448	97%	7%	.039U

U = analyte was not detected above the associated quantitation limit

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GENERAL VALIDATION CHECKLIST

BATCH NUMBER (from Sample Logbook): 960418 A Anions, Alkalinity
 EALO2419-
 SAMPLE NUMBERS: EALO2444 ANALYTES REQUESTED: Chromium, Hexavalent Cr
 VALIDATOR: PAUL E DVERKSEN SIGNATURE: Paul E Dverksen DATE: 4/30/96

Requested analytes were performed	<u>Yes</u>	No
Chain-of-custody forms are complete	<u>Yes</u>	Not Available
Anomaly reports are complete and signed	Yes	<u>None</u>
Organic peer review checklist is complete	Yes	<u>Not Required</u>
Inorganic peer review checklist is complete	<u>Yes</u>	Not Required
Radiochemical peer review checklist is complete	Yes	<u>Not Required</u>
Spreadsheets (for Results and QC) are in proper format and have been signed	<u>Yes</u>	No
HEIS numbers have been included	<u>Yes</u>	Not Required
Client sample identification has been included	<u>Yes</u>	Not Required
EAL sample numbers have been included	<u>Yes</u>	No
SAF has been included	<u>Yes</u>	No
Narrative has been included and signed	Yes	No

INORGANIC PEER REVIEW CHECKLIST

EAL02419-2425; EAL02427
 SAMPLE #: EAL02430-2437 DATE SAMPLED: _____ DATE ANALYZED: 4/25/96
 EAL02439-2444
 PEER REVIEWER: PAUL EDVERKSEN SIGNATURE: Paul Edverksen DATE: 4/30/96

ICP Metals

Water samples were preserved with nitric acid to pH <2. Soil samples were refrigerated at 4°C.	Yes	No
Holding time requirement was met: 6 months from date sampled.	Yes	No
Date of multi-point calibration	4/25/96	--
The high calibration check standard was within 5% of expected value for each metal reported	Yes	No
The midpoint calibration check standard was within 10% of expected value for each metal reported	Yes	No
The response for each metal reported in each sample was less than the response for that metal in the highest calibration standard	Yes	No
The QC Standard (LCS) recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	Yes	No
The QC standard (LCS), at $\approx 10 \times$ MDL, met acceptance criteria for each metal reported	Yes	No
The reagent blank was analyzed and reported on the QC spreadsheet for each metal reported	Yes	No
Conversion to soil concentration was correct	Yes	NA

INORGANIC PEER REVIEW CHECKLIST

EA L02419, 2421, 2426-2429

SAMPLE #: _____ DATE SAMPLED: 4/18/96 DATE ANALYZED: 4/18/96PEER REVIEWER: T.H. Bellur SIGNATURE: T.H. Bellur DATE: 4/22/96

Hexavalent Chromium

Water samples were refrigerated to 4°C	Yes	No
Holding time requirement was met: 24 hours from date sampled	<u>Yes</u>	No
Date of multi-point calibration	<u>1/22/96</u>	-
The calibration check standard met acceptance criteria	<u>Yes</u>	No
The response for hexavalent chromium in each sample was less than the response in the highest calibration standard	<u>Yes</u>	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	<u>Yes</u>	No
Spike recovery met acceptance criteria	<u>Yes</u>	No
The reagent blank was analyzed and reported on the QC spreadsheet	<u>Yes</u>	No
Conversion to soil concentration was correct	Yes	<u>NA</u>

Note: Samples were analyzed immediately upon receipt. Left-over sample was then stored in the refrigerator.

9713512, 2501 anions

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INORGANIC PEER REVIEW CHECKLIST

EALC 2419-2423, 2425, 2428,
SAMPLE #: 2430-2434, 2436-2439
DATE SAMPLED: 4/18/96 DATE ANALYZED: 4/19/96
PEER REVIEWER: TH Beller SIGNATURE: TH Beller DATE: 4/22/96

IC Anions and/or Cations

Water samples for sulfate and/or nitrate were refrigerated to 4°C	Yes	NA
Holding time requirement was met: 48 hours from date sampled for nitrate; 28 days for other ions	Yes	No
Date of multi-point calibration	4/5/96	-
The calibration check standard met acceptance criteria for each ion reported	Yes	No
The response for each ion reported in each sample was less than the response for that ion in the highest calibration standard	Yes	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	Yes	No
Spike recovery met acceptance criteria for each ion reported	Yes	No
The reagent blank was analyzed and reported on the QC spreadsheet	Yes	No
Conversion to soil concentration was correct	Yes	NA

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anions

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INORGANIC PEER REVIEW CHECKLIST

EALD 2422, 2425, 2428, 2431,
 SAMPLE #: 2432, 2434, 2436, DATE SAMPLED: 4/18/96 DATE ANALYZED: 4/22/96
 2437, 2438, 2443
 PEER REVIEWER: TH Bellur SIGNATURE: TH Bellur DATE: 4/22/96

IC Anions and/or Cations

Water samples for sulfate and/or nitrate were refrigerated to 4°C	Yes	NA
Holding time requirement was met: 48 hours from date sampled for nitrate; 28 days for other ions	Yes	No
Date of multi-point calibration	4/5/96	-
The calibration check standard met acceptance criteria for each ion reported	Yes	No
The response for each ion reported in each sample was less than the response for that ion in the highest calibration standard	Yes	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	Yes	No
Spike recovery met acceptance criteria for each ion reported	Yes	No
The reagent blank was analyzed and reported on the QC spreadsheet	Yes	No
Conversion to soil concentration was correct	Yes	NA

INORGANIC PEER REVIEW CHECKLIST

EAL02449-2454
 SAMPLE #: _____ DATE SAMPLED: 4/25/96 DATE ANALYZED: 4/25/96
 PEER REVIEWER: TH Bellus SIGNATURE: TH Bellus DATE: 4/29/96

Hexavalent Chromium

Water samples were refrigerated to 4°C	<u>Yes</u>	No
Holding time requirement was met: 24 hours from date sampled	<u>Yes</u>	No
Date of multi-point calibration	<u>1/22/96</u>	-
The calibration check standard met acceptance criteria	<u>Yes</u>	No
The response for hexavalent chromium in each sample was less than the response in the highest calibration standard	<u>Yes</u>	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	<u>Yes</u>	No
Spike recovery met acceptance criteria	<u>Yes</u>	No
The reagent blank was analyzed and reported on the QC spreadsheet	<u>Yes</u>	No
Conversion to soil concentration was correct	Yes	<u>NA</u>

INORGANIC PEER REVIEW CHECKLIST

SAMPLE #: EA L02448 DATE SAMPLED: 4/23/96 DATE ANALYZED: 4/29/96

PEER REVIEWER: TH Bellus SIGNATURE: JH Bellus DATE: 4/29/96

IC Anions and/or Cations Cl only

Water samples for sulfate and/or nitrate were refrigerated to 4°C	<u>Yes</u>	NA
Holding time requirement was met: 48 hours from date sampled for nitrate; 28 days for other ions	<u>Yes</u>	No
Date of multi-point calibration	<u>4/29/96</u>	-
The calibration check standard met acceptance criteria for each ion reported	<u>Yes</u>	No
The response for each ion reported in each sample was less than the response for that ion in the highest calibration standard	<u>Yes</u>	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	<u>Yes</u>	No
Spike recovery met acceptance criteria for each ion reported	<u>Yes</u>	No
The reagent blank was analyzed and reported on the QC spreadsheet	<u>Yes</u>	No
Conversion to soil concentration was correct	Yes	<u>NA</u>

after dilution

INORGANIC PEER REVIEW CHECKLIST

SAMPLE #: EAL02448 DATE SAMPLED: 4/25/96 DATE ANALYZED: 4/25/96
 PEER REVIEWER: TH Bellus SIGNATURE: TH Bellus DATE: 4/29/96

IC Anions and/or Cations NO₃ + SO₄ only

Water samples for sulfate and/or nitrate were refrigerated to 4°C	<u>Yes</u>	NA
Holding time requirement was met: 48 hours from date sampled for nitrate; 28 days for other ions	<u>Yes</u>	No
Date of multi-point calibration	<u>4/5/96</u>	-
The calibration check standard met acceptance criteria for each ion reported	<u>Yes</u>	No
The response for each ion reported in each sample was less than the response for that ion in the highest calibration standard	<u>Yes</u>	No
Spike recovery and RPD calculations are correct, and the values were reported on the QC spreadsheet	<u>Yes</u>	No
Spike recovery met acceptance criteria for each ion reported	<u>Yes</u>	No
The reagent blank was analyzed and reported on the QC spreadsheet	<u>Yes</u>	No
Conversion to soil concentration was correct	Yes	<u>NA</u>

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 dilution
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9713512.2569

ERC LABORATORY MANAGEMENT SAMPLING AUTHORIZATION FORM

000023

SAF Number B96-104

Rev: 0

Program Type CERCLA

Project ID 100-HR-3 TS

Project Type TS

Operable Unit 100-HR-3

Task ID 6

Round Number 0

SAF Title Ion Exchange Batch Equilibrium Test

Task Manager J. W. Green, Jr.

Requester J. W. Green, Jr.

Charge Codes-

Analytical Services PE51M Rad Screening (EAL) PE51M

Sample Management PE51M Sampling Services PE51M

Sample Management Function Project Coordinator M. E. David

Estimated Start Date 04/10/96

Estimated Completion Date 06/17/96

SampleArea 100 Areas

Estimated Number of Samples 150

Sampling Organizations

ERC Field Sampling

Data Turnaround Requirements Priority

Matrix Water

Data Deliverable Requirements Summary

Laboratory Primary: EAL

Primary: Field Analysis

Primary: Quanterra

SAF Comment

** Batch samples are to be taken from wells 199-D8-53 (10 gallons), 199-D8-54A (10 gallons), 199-H4-3 (10 gallons), 199-H4-12A (10 gallons), 199-K-22, (20 gallons), and 199-K-37 (20 gallons).

** Minimum and Full QC volumes for Technetium-99 at the Quanterra Laboratories has been provided.

COC Comments

** Sample analysis at the EAL for "Titration to pH 4.5" a Titration Curve is needed.

Date 04/11/96

SAFStatus: Issued

4/11/96 9:00:00 AM

ERC Laboratory Management

Field Sampling Requirements
Laboratory AnalysisLaboratory: **EAL**Matrix: **Water**

Parameter / Analysis	Reference Method	Container / Volume	VolReq	Preservation	Holding Times
IC Anions - 300.0 Chloride, Nitrate, Sulfate	EPA300.0	G/P 20 ml	Full QC	Cool 4C	28 Days/48 Hours
Titration to pH 4.5	TITRATE	G/P 50 ml	Full QC	H2SO4 to pH <2 Cooled to 4C	14 Days
ICP Metals - 6010A (TAL) Chromium	EPA6010A	G/P 100 ml	Full QC	HNO3 to pH <2	6 Months
Chromium Hex - 7196A	EPA7196A	G/P 25 ml	Full QC	Cooled to 4C	24 Hours

Key¹ Container Types:

P = Plastic (Polyethylene)
 G = Glass
 Gs = Glass w/septum cap
 Gs* = Glass w/septum cap
 No head space in container

aG = Amber Glass
 aGs = Amber Glass w/septum cap
 aGs* = Amber Glass w/septum cap -
 No head space in container

FSR Comment: ** Minimum and Full QC volumes for Technetium-99 at the Quanterra Laboratories has been provided.

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Batch 960410C

Data Turnaround
 Priority
 Normal

Collector <i>A. Rizzo / m. mentharen</i>	Company Contact Jim Green	Telephone (509) 372-9317
Project Designation IX Batch Equilibrium Tests Wells	Sampling Location 100 K, 100 H, 100 D	SAF No.
Ice Chest No.	Field Logbook No. <i>EL-1289</i>	Method of Shipment Hand Delivered
Shipped To EAL	Offsite Property No.	Bill of Lading/Air Bill No.

Possible Sample Hazards/Remarks	Preservation	None								
		Type of Container	P							
	No. of Container(s)	4								
Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	2.5 gal								
SAMPLE ANALYSIS		Treatment Testing								

Sample No.	Matrix*	Date Sampled	Time Sampled							
199-D8-53	W	4-10-96	1000	X				EAL02395-02398		
199-D8-54A	W	4-10-96	0905	X				EAL02391-02394		

CHAIN OF POSSESSION	Sign/Print Names				SPECIAL INSTRUCTIONS	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
	Relinquished By <i>A. Rizzo</i>	Date/Time <i>1225</i>	Received By <i>DG Call</i>	Date/Time <i>4-10-96/1225</i>		
	Relinquished By <i>de Rizzo (EAL)</i>	Date/Time <i>4-10-96</i>	Received By <i>Diana A. Call</i>	Date/Time <i>4-10-96/1225</i>		
	Relinquished By	Date/Time	Received By	Date/Time		
LABORATORY SECTION	Received By	Title	Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time			

97362257

000025

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Batch 960411B

Data Turnaround

- Priority
- Normal

Collector <i>A. Rizzo / m. mehler</i>	Company Contact Jim Green	Telephone (509) 372-9317
Project Designation IX Batch Equilibrium Tests Wells	Sampling Location 100 K, 100 H, 100 D	SAF No.
Ice Chest No.	Field Logbook No. <i>EL-1289</i>	Method of Shipment Hand Delivered
Shipped To EAL	Offsite Property No.	Bill of Lading/Air Bill No.

Possible Sample Hazards/Remarks	Preservation	None																		
	Type of Container	P																		
	No. of Container(s)	4																		
Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	2.5 gal																		

SAMPLE ANALYSIS

Sample No.	Matrix*	Date Sampled	Time Sampled																		
199-H4-3	W	4.11.96	0946	X																	
199-H4-12A	W	4.11.96	1106	X																	

CHAIN OF POSSESSION	Sign/Print Names				SPECIAL INSTRUCTIONS										Matrix*								
Relinquished By <i>JFK</i>	Date/Time	Received By <i>Diane H. Call</i>	Date/Time																				
<i>A.G.P. (RS)</i>	<i>4.11.96 1200</i>	<i>4.11.96/12:00</i>																					
Relinquished By	Date/Time	Received By	Date/Time																				
Relinquished By	Date/Time	Received By	Date/Time																				
Relinquished By	Date/Time	Received By	Date/Time																				

- 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

97-5612-2572

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Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Batch 960415 B

Data Turnaround

- Priority
- Normal

Collector <i>K. Trapp</i>	Company Contact Jim Green	Telephone (509) 372-9317
Project Designation IX Batch Equilibrium Tests Wells	Sampling Location 100 K, 100 H, 100 D	SAF No.
Ice Chest No.	Field Logbook No. <i>EL-1160</i>	Method of Shipment Hand Delivered
Shipped To EAL	Offsite Property No. <i>NA</i>	Bill of Lading/Air Bill No. <i>NA</i>

Possible Sample Hazards/Remarks	Preservation	None																	
	Type of Container	P																	
	No. of Container(s)	8																	
	Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	2.5 gal																
SAMPLE ANALYSIS		Treatment Testing																	

Sample No.	Matrix*	Date Sampled	Time Sampled																
199-K-22	W	<i>4/15/96</i>	<i>1210</i>	<i>X</i>															

CHAIN OF POSSESSION	Sign/Print Names				SPECIAL INSTRUCTIONS	Matrix* S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquide T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
	Relinquished By <i>K. Trapp</i>	Date/Time <i>4/15/96</i>	Received By <i>Diane A. Cull</i>	Date/Time <i>4-15-96/1308</i>		
	Relinquished By	Date/Time	Received By	Date/Time		
	Relinquished By	Date/Time	Received By	Date/Time		

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

000027

97302-2573

Bechtel Hanford, Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Batch 960415B

Data Turnaround

- Priority
- Normal

Collector <i>K. Trapp</i>	Company Contact Jim Green	Telephone (509) 372-9317
Project Designation IX Batch Equilibrium Tests Wells	Sampling Location 100 K, 100 H, 100 D	SAF No.
Ice Chest No.	Field Logbook No. <i>EL-1160</i>	Method of Shipment Hand Delivered
Shipped To EAL	Offsite Property No. <i>NA</i>	Bill of Lading/Air Bill No. <i>NA</i>

Possible Sample Hazards/Remarks	Preservation	None											
	Type of Container	P											
	No. of Container(s)	8											
Special Handling and/or Storage Maintain samples between 2°C and 6°C.	Volume	2.5 gal											
SAMPLE ANALYSIS		Treatment Testing											

Sample No.	Matrix*	Date Sampled	Time Sampled										
199-K-37	W	4/15/96	1020	X									

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS						Matrix*		
Relinquished By <i>K. Trapp</i>	Date/Time 4/15/96	Received By <i>Jim Green</i>	Date/Time 4/15/96/13:05							000039		S = Soil
Relinquished By	Date/Time	Received By	Date/Time									SE = Sediment
Relinquished By	Date/Time	Received By	Date/Time									SO = Solid
Relinquished By	Date/Time	Received By	Date/Time									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