CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

September 11, 2001

Attention: Joan Kessner

Project Number	:	43018
SAF	:	B01-058
SDG	:	W03574
Number of Samples	:	six
Sample Matrix	:	soil
Data Deliverable	:	Summary
Date SDG Closed	:	August 8, 2001

II. Introduction

On August 9, 2001, six (6) "solid" samples were received by STL--St. Louis for chemical analysis. The samples were received at the St. Louis lab at a temperature of 7 degrees C. See the COC and CUR forms for details of sample condition and temperature. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. This report is not complete without the Case Narrative. Results are reported "as received"; i.e. wet weight, unless otherwise noted on the data sheets.

Analyses requested: see the attached methods summary sheet

Deviation from Request: The metals were done using method 6010B in place of 6010A.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

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V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Metals: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The MS recoveries for several metals were outside control limits. The spike data was flagged with an "N" qualifier. LCS recoveries met criteria.

Wet Chemistry: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Duplicate were analyzed with each preparation batch per the protocol for each analysis.

The TOC MS recovery for sample B12C88-A was low and is flagged with an "N" qualfier. The analyst spiked sample B12C64 and the recovery is within limits. Both sets of data are reported.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Marti Ward
Marti Ward
St. Louis Project Manager

Correction to SDGs W03557, W03574, and W03587
March 22, 2018
J. G. Douglas 373-7154
Sample Management and Reporting
Soil and Groundwater Remediation Project
CH2M HILL Plateau Remediation Company

These SDGs report analytical results for the incorrect analyte names "Nitrate," "Nitrite," and "Phosphate as P, Ortho." These SDGs were reported by the Severn-Trent Laboratory – St. Louis (STLSL) in 2001.

The analytical results are correct, but the correct speciation for these analytes in the SDGs is "Nitrogen in Nitrate" (Nitrate as N), "Nitrogen in Nitrite" (Nitrite as N), and "Phosphate."

The Hanford Environmental Information System (HEIS) data associated with these analytical results does have the correct speciation ("Nitrogen in Nitrate," "Nitrogen in Nitrite," and "Phosphate.") associated with the analytical results.

The determination of which species names were correct was made by comparing split sample results for STLSL with the paired split sample results from other laboratories (Lionville and the Waste Sampling and Characterization Facility (WSCF)). The STLSL results matched the Lionville and WSCF results correctly when the STLSL results were reported as "Nitrogen in Nitrate," "Nitrogen in Nitrite," and "Phosphate."

SAMPLE SUMMARY

F1H090189

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
EHPP2	001	B12C88-A	08/05/01	23:10
EHPTF	002	B12DC0-A	08/05/01	23:10
EHPVF	003	B12C63-A	08/02/01	02:10
EHPVM	004	B12DB9-A	08/03/01	05:00
EHPVX	005	B12C64-A	08/02/01	06:20
EHPV1	006	B12DB8-A	08/03/01	01:20

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F1H090189

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Non-Aqueous	SW846 9045A	
Chloride	MCAWW 300.0A	MCAWW 300.0A
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Solids by Modified 7470A	SW846 Hg Mod 74	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrate-Nitrite	MCAWW 353.1	
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Total Cyanide	SW846 9010A	SW846 9010A
Total Organic Carbon	SW846 9060	SW846 9060
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-001
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPP2
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C88-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
RUN A DUPLICATE ON WET CHEM.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Nitrite as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-GO-01) EHPP2-1-A0 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Moisture, Percent (160.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-WM-01) EHPP2-1-AA Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	11/12/01
Inductively Coupled Plasma (6010B) METALS, TOTAL - Soils M6010_S AG,CD,CR,CU,NI,PB (A-46-QO-01) EHPP2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	2/01/02
Mercury in Solids by Modified 7470A METALS, TOTAL (Method Exclusive) - Solids M7470A_S HG (A-70-0G-01) EHPP2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	9/02/01	9/02/01
Chloride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CX-01) EHPP2-1-AR Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) EHPP2-1-AU Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) EHPP2-1-AW Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Sulfate (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CY-01) EHPP2-1-A2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 2 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-001
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPP2
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C88-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
RUN A DUPLICATE ON WET CHEM.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Phosphate as P, Ortho (300.0, Ion Chroma LEACHATE, DI (Routine) (A-82-DO-01) EHPP2-1-A4 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Nitrogen, Ammonia (350.1, Automated) LEACHATE, DI (Routine) (A-82-VM-01) EHPP2-1-A8 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	9/02/01
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) -> REDUCTION (A-0R-HN-01) EHPP2-1-CA Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	9/02/01	9/02/01
Cyanide, Total (9010) DISTILLATION, MICRO/MIDI - Acid (A-06-RV-01) EHPP2-1-CD Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/19/01
pH (9045) - Non-Aqueous LEACHATE, DI (Routine) (A-82-FK-01) EHPP2-1-CF Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/07/01
Carbon, Total Organic "TOC" (9060) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-FM-01) EHPP2-1-CH Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	9/02/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-001-D
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPP2 MSD
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C88-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
RUN A DUPLICATE ON WET CHEM.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Mercury in Solids by Modified 7470A	06	8/09/01	9/02/01	9/02/01

METALS, TOTAL (Method Exclusive) - Solids
M7470A_S HG
(A-70-0G-01) EHPP2 Protocol: A QC Program: STANDARD TEST SET

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STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-001-S
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPP2 MS
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C88-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
RUN A DUPLICATE ON WET CHEM.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Nitrite as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-GO-01) EHPP2-1-CJ Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Sulfate (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CY-01) EHPP2-1-CK Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Phosphate as P, Ortho (300.0, Ion Chroma LEACHATE, DI (Routine) (A-82-DO-01) EHPP2-1-CL Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Mercury in Solids by Modified 7470A METALS, TOTAL (Method Exclusive) - Solids M7470A_S HG (A-70-0G-01) EHPP2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	9/02/01	9/02/01
Nitrogen, Ammonia (350.1, Automated) LEACHATE, DI (Routine) (A-82-VM-01) EHPP2-1-CP Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	9/02/01
Chloride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CX-01) EHPP2-1-CQ Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) EHPP2-1-CR Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) EHPP2-1-CT Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) -> REDUCTION	06	8/09/01	9/02/01	9/02/01

(A-0R-HN-01) EHPP2-1-CU Protocol: A QC Program: STANDARD TEST SET

Cyanide, Total (9010) 06 8/09/01 0/00/00 8/19/01
DISTILLATION, MICRO/MIDI - Acid
(A-06-RV-01) EHPP2-1-CV Protocol: A QC Program: STANDARD TEST SET

Carbon, Total Organic "TOC" (9060) 06 8/09/01 0/00/00 9/02/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
(A-88-FM-01) EHPP2-1-CW Protocol: A QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
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STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-002
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPTF
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DC0-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Nitrite as N (300.0, Ion Chromatography)	06	8/09/01	11/12/01	11/14/01
LEACHATE, DI (Routine)				
(A-82-GO-01) EHPTF-1-AA Protocol: A QC Program: STANDARD TEST SET				
Sulfate (300.0, Ion Chromatography)	06	8/09/01	11/12/01	12/10/01
LEACHATE, DI (Routine)				
(A-82-CY-01) EHPTF-1-AC Protocol: A QC Program: STANDARD TEST SET				
Phosphate as P, Ortho (300.0, Ion Chroma	06	8/09/01	11/12/01	11/14/01
LEACHATE, DI (Routine)				
(A-82-DO-01) EHPTF-1-AD Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	8/09/01	0/00/00	2/01/02
METALS, TOTAL - Soils				
M6010_S AG,CD,CR,CU,NI,PB				
(A-46-QO-01) EHPTF Protocol: A QC Program: STANDARD TEST SET				
Mercury in Solids by Modified 7470A	06	8/09/01	9/02/01	9/02/01
METALS, TOTAL (Method Exclusive) - Solids				
M7470A_S HG				
(A-70-0G-01) EHPTF Protocol: A QC Program: STANDARD TEST SET				
Nitrogen, Ammonia (350.1, Automated)	06	8/09/01	0/00/00	9/02/01
LEACHATE, DI (Routine)				
(A-82-VM-01) EHPTF-1-AF Protocol: A QC Program: STANDARD TEST SET				
Moisture, Percent (160.3)	06	8/09/01	0/00/00	11/12/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) EHPTF-1-AG Protocol: A QC Program: STANDARD TEST SET				
Chloride (300.0, Ion Chromatography)	06	8/09/01	11/12/01	12/10/01
LEACHATE, DI (Routine)				
(A-82-CX-01) EHPTF-1-AP Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 2 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-002
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPTF
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/05/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 23:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DC0-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) EHPTF-1-AQ Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	12/10/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) EHPTF-1-AR Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/12/01	11/14/01
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) -> REDUCTION (A-0R-HN-01) EHPTF-1-AT Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	9/02/01	9/02/01
Cyanide, Total (9010) DISTILLATION, MICRO/MIDI - Acid (A-06-RV-01) EHPTF-1-AU Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/19/01
pH (9045) - Non-Aqueous LEACHATE, DI (Routine) (A-82-FK-01) EHPTF-1-AV Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/07/01
Carbon, Total Organic "TOC" (9060) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-FM-01) EHPTF-1-AW Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	9/02/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-003
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVF
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/02/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 2:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C63-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
MT6010_S AG,AL,CA,CD,CR,CU,FE,MG,MN,MO,NI,PB,VX,ZN				
(A-46-QM-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
M6010_S BI,KX,NA				
(A-46-QO-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				
Mercury in Solids by Modified 7470A	06	8/09/01	8/30/01	8/30/01
METALS, TOTAL (Method Exclusive) - Solids				
M7470A_S HG				
(A-70-0G-01) EHPVF Protocol: A QC Program: STANDARD TEST SET				
Nitrite as N (300.0, Ion Chromatography)	06	8/09/01	11/09/01	11/11/01
LEACHATE, DI (Routine)				
(A-82-GO-01) EHPVF-1-AM Protocol: A QC Program: STANDARD TEST SET				
Sulfate (300.0, Ion Chromatography)	06	8/09/01	11/09/01	12/07/01
LEACHATE, DI (Routine)				
(A-82-CY-01) EHPVF-1-AN Protocol: A QC Program: STANDARD TEST SET				
Phosphate as P, Ortho (300.0, Ion Chroma	06	8/09/01	11/09/01	11/11/01
LEACHATE, DI (Routine)				
(A-82-DO-01) EHPVF-1-AP Protocol: A QC Program: STANDARD TEST SET				
Nitrogen, Ammonia (350.1, Automated)	06	8/09/01	0/00/00	8/30/01
LEACHATE, DI (Routine)				
(A-82-VM-01) EHPVF-1-AR Protocol: A QC Program: STANDARD TEST SET				
Moisture, Percent (160.3)	06	8/09/01	0/00/00	11/09/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) EHPVF-1-AT Protocol: A QC Program: STANDARD TEST SET				

Chloride (300.0, Ion Chromatography) 06 8/09/01 11/09/01 12/07/01
LEACHATE, DI (Routine)
(A-82-CX-01) EHPVF-1-AU Protocol: A QC Program: STANDARD TEST SET

Fluoride (300.0, Ion Chromatography) 06 8/09/01 11/09/01 12/07/01
LEACHATE, DI (Routine)
(A-82-C8-01) EHPVF-1-AV Protocol: A QC Program: STANDARD TEST SET

Nitrate as N (300.0, Ion Chromatography) 06 8/09/01 11/09/01 11/11/01
LEACHATE, DI (Routine)
(A-82-C9-01) EHPVF-1-AW Protocol: A QC Program: STANDARD TEST SET

Nitrate-Nitrite (353.1) 06 8/09/01 8/30/01 8/30/01
LEACHATE, DI (Routine) -> REDUCTION
(A-0R-HN-01) EHPVF-1-AX Protocol: A QC Program: STANDARD TEST SET

Cyanide, Total (9010) 06 8/09/01 0/00/00 8/16/01
DISTILLATION, MICRO/MIDI - Acid
(A-06-RV-01) EHPVF-1-A0 Protocol: A QC Program: STANDARD TEST SET

pH (9045) - Non-Aqueous 06 8/09/01 0/00/00 8/04/01
LEACHATE, DI (Routine)
(A-82-FK-01) EHPVF-1-A1 Protocol: A QC Program: STANDARD TEST SET

Carbon, Total Organic "TOC" (9060) 06 8/09/01 0/00/00 8/30/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
(A-88-FM-01) EHPVF-1-A2 Protocol: A QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WARDM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-003-D
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVF MSD
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/02/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC'D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 2:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C63-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
MT6010_S AG,AL,CA,CD,CR,CU,FE,MG,MN,MO,NI,PB,VX,ZN				
(A-46-QM-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
M6010_S BI,KX,NA				
(A-46-QO-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WARDM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-003-S
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVF MS
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/02/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 2:10
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C63-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
MT6010_S AG,AL,CA,CD,CR,CU,FE,MG,MN,MO,NI,PB,VX,ZN				
(A-46-QM-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
M6010_S BI,KX,NA				
(A-46-QO-01) EHPVF Protocol: B QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WARDM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-004
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVM
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/03/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 5:00
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DB9-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B) METALS, TOTAL - Soils M6010_S AG,CD,CR,CU,NI,PB (A-46-QO-01) EHPVM Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	1/30/02
Mercury in Solids by Modified 7470A METALS, TOTAL (Method Exclusive) - Solids M7470A_S HG (A-70-0G-01) EHPVM Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	8/31/01	8/31/01
Nitrite as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-GO-01) EHPVM-1-AM Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Sulfate (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CY-01) EHPVM-1-AN Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01
Phosphate as P, Ortho (300.0, Ion Chroma LEACHATE, DI (Routine) (A-82-DO-01) EHPVM-1-AP Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Nitrogen, Ammonia (350.1, Automated) LEACHATE, DI (Routine) (A-82-VM-01) EHPVM-1-AR Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/31/01
Moisture, Percent (160.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-WM-01) EHPVM-1-AT Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	11/10/01
Chloride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CX-01) EHPVM-1-AU Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 2 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-004
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVM
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/03/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 5:00
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DB9-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) EHPVM-1-AV Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) EHPVM-1-AW Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) -> REDUCTION (A-0R-HN-01) EHPVM-1-AX Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	8/31/01	8/31/01
Cyanide, Total (9010) DISTILLATION, MICRO/MIDI - Acid (A-06-RV-01) EHPVM-1-A0 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/17/01
pH (9045) - Non-Aqueous LEACHATE, DI (Routine) (A-82-FK-01) EHPVM-1-A1 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/05/01
Carbon, Total Organic "TOC" (9060) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-FM-01) EHPVM-1-A2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/31/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-005
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPVX
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/02/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 6:20
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12C64-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
MT6010_S AG,AL,CA,CD,CR,CU,FE,MG,MN,MO,NI,PB,VX,ZN				
(A-46-QM-01) EHPVX Protocol: B QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B)	06	8/09/01	0/00/00	1/29/02
METALS, TOTAL - Soils				
M6010_S BI,KX,NA				
(A-46-QO-01) EHPVX Protocol: B QC Program: STANDARD TEST SET				
Mercury in Solids by Modified 7470A	06	8/09/01	8/30/01	8/30/01
METALS, TOTAL (Method Exclusive) - Solids				
M7470A_S HG				
(A-70-0G-01) EHPVX Protocol: A QC Program: STANDARD TEST SET				
Nitrite as N (300.0, Ion Chromatography)	06	8/09/01	11/09/01	11/11/01
LEACHATE, DI (Routine)				
(A-82-GO-01) EHPVX-1-AM Protocol: A QC Program: STANDARD TEST SET				
Sulfate (300.0, Ion Chromatography)	06	8/09/01	11/09/01	12/07/01
LEACHATE, DI (Routine)				
(A-82-CY-01) EHPVX-1-AN Protocol: A QC Program: STANDARD TEST SET				
Phosphate as P, Ortho (300.0, Ion Chroma	06	8/09/01	11/09/01	11/11/01
LEACHATE, DI (Routine)				
(A-82-DO-01) EHPVX-1-AP Protocol: A QC Program: STANDARD TEST SET				
Nitrogen, Ammonia (350.1, Automated)	06	8/09/01	0/00/00	8/30/01
LEACHATE, DI (Routine)				
(A-82-VM-01) EHPVX-1-AR Protocol: A QC Program: STANDARD TEST SET				
Moisture, Percent (160.3)	06	8/09/01	0/00/00	11/09/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) EHPVX-1-AT Protocol: A QC Program: STANDARD TEST SET				

Chloride (300.0, Ion Chromatography) 06 8/09/01 11/09/01 12/07/01
LEACHATE, DI (Routine)
(A-82-CX-01) EHPVX-1-AU Protocol: A QC Program: STANDARD TEST SET

Fluoride (300.0, Ion Chromatography) 06 8/09/01 11/09/01 12/07/01
LEACHATE, DI (Routine)
(A-82-C8-01) EHPVX-1-AV Protocol: A QC Program: STANDARD TEST SET

Nitrate as N (300.0, Ion Chromatography) 06 8/09/01 11/09/01 11/11/01
LEACHATE, DI (Routine)
(A-82-C9-01) EHPVX-1-AW Protocol: A QC Program: STANDARD TEST SET

Nitrate-Nitrite (353.1) 06 8/09/01 8/30/01 8/30/01
LEACHATE, DI (Routine) -> REDUCTION
(A-0R-HN-01) EHPVX-1-AX Protocol: A QC Program: STANDARD TEST SET

Cyanide, Total (9010) 06 8/09/01 0/00/00 8/16/01
DISTILLATION, MICRO/MIDI - Acid
(A-06-RV-01) EHPVX-1-A0 Protocol: A QC Program: STANDARD TEST SET

pH (9045) - Non-Aqueous 06 8/09/01 0/00/00 8/04/01
LEACHATE, DI (Routine)
(A-82-FK-01) EHPVX-1-A1 Protocol: A QC Program: STANDARD TEST SET

Carbon, Total Organic "TOC" (9060) 06 8/09/01 0/00/00 8/30/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
(A-88-FM-01) EHPVX-1-A2 Protocol: A QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WARDM

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-006
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPV1
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/03/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 1:20
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DB8-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B) METALS, TOTAL - Soils M6010_S AG,CD,CR,CU,NI,PB (A-46-QO-01) EHPV1 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	1/30/02
Mercury in Solids by Modified 7470A METALS, TOTAL (Method Exclusive) - Solids M7470A_S HG (A-70-0G-01) EHPV1 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	8/31/01	8/31/01
Nitrite as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-GO-01) EHPV1-1-AM Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Sulfate (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CY-01) EHPV1-1-AN Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01
Phosphate as P, Ortho (300.0, Ion Chroma LEACHATE, DI (Routine) (A-82-DO-01) EHPV1-1-AP Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Nitrogen, Ammonia (350.1, Automated) LEACHATE, DI (Routine) (A-82-VM-01) EHPV1-1-AR Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/31/01
Moisture, Percent (160.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-WM-01) EHPV1-1-AT Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	11/10/01
Chloride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CX-01) EHPV1-1-AU Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 8/09/01
Page 2 CLIENT ANALYSIS SUMMARY Time: 13:34:59
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 43018
PROJECT MANAGER: MARTI WARD LAB ID: F-1H090189-006
PROJECT #: 200-TW-1&2SOIL WORK ORDER: EHPV1
REPORT TO: Joan Kessner RECEIVING DATE: 8/09/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 8/03/01
SITE: B01-058 ANALYTICAL DUE DATE: 9/07/01N
AMOUNT REC"D: 60G,120G,250G REPORT DUE DATE: 9/21/01
STORAGE LOC: VH1,S51 PRIORITY: 30
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 1:20
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B12DB8-A
QC PACKAGE: Report SDG# : W03574
SAMPLE COMMENTS:
THIS LOT MAY REQUIRE A RAD WORK PERMIT.
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) EHPV1-1-AV Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	12/08/01
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) EHPV1-1-AW Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	11/10/01	11/12/01
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) -> REDUCTION (A-0R-HN-01) EHPV1-1-AX Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	8/31/01	8/31/01
Cyanide, Total (9010) DISTILLATION, MICRO/MIDI - Acid (A-06-RV-01) EHPV1-1-A0 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/17/01
pH (9045) - Non-Aqueous LEACHATE, DI (Routine) (A-82-FK-01) EHPV1-1-A1 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/05/01
Carbon, Total Organic "TOC" (9060) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (A-88-FM-01) EHPV1-1-A2 Protocol: A QC Program: STANDARD TEST SET	06	8/09/01	0/00/00	8/31/01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-058-165	Page 1 of 1
Collector: Thomas G./Watson D.	Company Contact: Todd, M.E. / Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ	Price Code: 8N / Data Turnaround: 45 Days
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E	SAF No.: B01-058	Air Quality ☐
Ice Chest No.: SN 109198 1040008	Field Logbook No.: EL-1518-1 / COA: B20TW2674C	Method of Shipment: Fed EX	
Shipped To: Dsa 7/18/01 Severn Trent ~~TMA/BECRA~~ ~~Lionville~~ STLouis	Offsite Property No.: RSR 107054	Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS: Maximum Dose on bottle .6 MR B/.5 MR

Samples stored in Ref.# 3A at the 3728 Shipping Facility on 8/10/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	120mL	60mL	60mL	250mL	60mL	250mL	250mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Mercury - 7470 - (CV)	Chromium Hex - 7196	See item (2) in Special Instructions.	VOA - 8260A (TCL)	See item (3) in Special Instructions. GST 8/5/01	See item (4) in Special Instructions. DSA 7/18/01			TIC TO
W03574										
Sample No. / Matrix * / Sample Date / Sample Time										
B12C88 - A / SOIL / 8/5/01 / 2,310	X	X	X	X						B12B V0
MW 8.9.01										250g, 120g, 60g

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	8/8/01 0630	Ref 3A	8/8/01 0630
Ref 3A 3728	8.8.01 0600	R Thorson	8.8.01 0600
R Thorson	8.8.01 0600	FED EX	
FED EX		Jeff Clark STL	080901 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Cadmium, Chromium, Copper, Nickel, Silver}; ICP Metals - 6010A (Add-on) {Lead}
(2) IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Ammonia - 350.3; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045
~~(3) Semi-VOA - 8270A (Add-On) {Tributyl-phosphate}; TPH-Diesel Range - NWTPH-D~~ GST 8/5/01
~~(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228}; Isotopic Plutonium, Isotopic Thorium {Thorium-232}; Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total-Sr, Technetium-99, Total Uranium; Tritium - H3; Isotopic Uranium~~ DSA 7/18/01

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc. — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-058-205 | Page 1 of 1

Collector: Thomas G./Watson D. / Nielson	Company Contact: Todd, M.E.	Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E		SAF No.: B01-058
Price Code: 8N	Data Turnaround: 45 Days	Air Quality: ☐	
Ice Chest No.: SN/09/98/046008	Field Logbook No.: EL-1518 - 1	COA: B20TW2674C	Method of Shipment: Fed EX
Shipped To: Severn Trent Incorporated - St. Louis (7-19-01)	Offsite Property No.: RSR 107054		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose .6 MR B & Y on bottle.

Samples stored in Ref.# 3A at the 3728 Shipping Facility on 8/16/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS

W03574

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	Cool 4C		
Type of Container	aG	aG	aG	aG	aG	aG	pG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL	60ml		
	Chromium Hex - 7196 SAP 7-19-01	See item (1) in Special Instructions.	VOA - 8260A (TCE) RJN 8/3/01	See item (2) in Special Instructions.	See item (3) in Special Instructions. Metals+ add on 8-9-01 JHK	See item (4) in Special Instructions.	Activity Scan SAP 7-19-01	Mercury 7470-CV		TIE TO
Sample No.	Matrix *	Sample Date	Sample Time							
B12DC0 - A	SOIL	8-5-01	2310		X			X		X		B12BV0 250g, 120g, 120g
RW 8-9-01												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas Greg Thomas	8-6-01 0630	Ref 3A	8-6-01 0630
Ref 3A	8.8.01 0600	R Thorp	8.8.01 0600
R Thorp	8.8.01 0600	FED EX	
FED EX		Gil Clark STL	08/09/01 0900

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045 RJN 8/3/01

~~(2) Semi-VOA - 8270A (Add-On) {Tributyl phosphate}; TPH-Diesel Range - WTPH-D~~ 8/3/01

(3) ICP Metals - 6010TR (Client List) {Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}

~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237, Nickel-63, Strontium-89,90 — Total-Sr; Technetium-99, Total Uranium; Tritium - H3; Isotopic Uranium~~ Sap 7-17-01

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-058-140	Page 1 of 1
Collector: Thomas G./Watson D. /Nielson	Company Contact: Todd, M.E. — Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days — Air Quality ☐
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E — Depth 14.5-15.5	SAF No.: B01-058	
Ice Chest No.: SN/09198/040008	Field Logbook No.: EL-1518 — COA: B20TW2674C	Method of Shipment: Fed EX	
Shipped To: DSA 7/18/01 Severn Trent Incorporated - ST. Louis	Offsite Property No.: RSR 107054	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS: 3 mR/B on outside Jar; 2 mR/r on outside Jar; No Alpha — AT 8/2/01 Direct 110K cpm on outside Jar.

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 8/5/01. Collector not available to relinquish samples on 8/8/01 for shipment. FT 8.8.01 JLS

W03574

Preservation	Cool 4C DSA 7/18/01	Cool 4C	Cool 4C	Cool 4C	None	None	None	Cool 4°C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1
Volume	50mL	250mL	60mL	250mL	120mL	250mL	60mL	60mL
	Chromium Hex - 7196 DSA 7/18/01	See Item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions. GST 7/21/01	See item (3) in Special Instructions.	See item (4) in Special Instructions.	Activity Scan DSA 7/18/01	Mercury 7470(cv)

Sample No.	Matrix *	Sample Date	Sample Time									
B12C63 - A	SOIL	8/02/01	0210		X			X			X	B12BT2 TIE TO 250g, 120g, 60g
MW 8.9.01												

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	8/2/01 0810	TW1&2 Site Trailer Ref	8/2/01 0810
TW1&2 Site Trailer Ref	8/3/01 0320	Greg Thomas/Greg Thomas	8/3/01 0320
Greg Thomas/Greg Thomas	8/3/01 0815	Ref 3B	8/3/01 0815
Ref 3B	8.8.01 0600	R Thorel	8.8.01 0600
R Thorel	8.8.01 0601	FEDEX	
FEDEX		Gil Clark	080901 1900

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045
(2) ~~Semi-VOA - 8270A (Add On) {Tributyl phosphate}; TPH Diesel Range - WTPH-D~~ GST 7/21/01
(3) ICP Metals - 6010TR (Client List) {Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}
(4) ~~Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228}; Isotopic Plutonium; Isotopic Thorium {Thorium-228}; Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~ DSA 7/18/01

Matrix *: S=Soil; SD=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-058-204	Page 1 of 1
Collector: Thomas G./Watson D. /Nielson	Company Contact: Todd, M.E. Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ	Price Code: 8N Data Turnaround: 45 Days
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E Depth 29 - 31.5	SAF No.: B01-058	Air Quality ☐
Ice Chest No.: SN109198 0040008	Field Logbook No.: EL-1518 COA: B20TW2674C	Method of Shipment: Fed EX	
Shipped To: Sol 7-19-01 Severn Trent Incorporated - St. Louis	Offsite Property No.: RSR 167064	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose 1.3 B/1.6 Y on bottles

Samples stored in Ref.# 3C at the 3728 Shipping Facility on 8.13.01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS

W03574

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	Cool 4C		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL	60ml		
	Chromium Hex - 7196 7-19-01	See item (1) in Special Instructions.	VOA - 8260A (TCL) RJN 8/1/01	See item (2) in Special Instructions. RJN 8/1/01	See item (3) in Special Instructions. Metals + add on per JHK	See item (4) in Special Instructions.	Activity Scan Sol 7-19-01	Mercury 7470 - CV		

Sample No.	Matrix *	Sample Date	Sample Time										
B12DB9 - A	SOIL	8/3/01	0500		X			X RJN 8/3/01			X	B12	BT9
MW 8.9.01													

TIC TO

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Arnold/Greg Jones	8/3/01 0800	Ref 3C	8/3/01 0800
Ref 3C	8.8.01 0600	R Thore	8.8.01 0600
R Thore	8.8.01 0600	FED EX	
FED EX		Gil Clarke	08/09/01 0900

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045

~~(2) Semi-VOA - 8270A (Add-On) (Tributyl-phosphate); TPH-Diesel Range - WTPH-D~~ RJN 8/3/01

(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc)

~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total-Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~ Sol 7-19-01

Matrix *: S=Soil; SE=Sediment; SO=Solid; SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-058-141	Page 1 of 1
Collector: Thomas G./Watson D.	Company Contact: Todd, M.E. — Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E — Depth 18 - 20.5	SAF No.: B01-058	Air Quality ☐
Ice Chest No.: SN/09/98/040058	Field Logbook No.: EL-1518 — COA: B20TW2674C	Method of Shipment: Fed EX	
Shipped To: DSA 7/18/01 Severn Trent Incorporated — St. Louis	Offsite Property No.: RSR 107054	Bill of Lading/Air Bill No.: WA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose 3.0 MR β / 3.5 MR γ on bottles

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/8/01 for shipment. JT 8.8.01

SAMPLE ANALYSIS

W03574

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	Cool 4°C		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL	60mL		
	Chromium Hex - 7196 DSA 7/18/01	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions. DGST 7/31/01	See item (3) in Special Instructions.	See item (4) in Special Instructions.	Activity Scan DSA 7/18/01	Mercury 7470A		Tie To
Sample No.	Matrix *	Sample Date	Sample Time							
B12C64 - A	SOIL	8/2/01	0620		X			X			X	B12BT3
MW 8.9.01												

CHAIN OF POSSESSION — Sigs/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	0815 8/3/01	Ref 3B	0815 8/3/01
Ref 3B	8-8-01 0600	K Thorne	8-8-01 0600
K Thorne	8-8-01 0600	FED EX	
FED EX		Jill Clarke	080901 0900

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045

~~(2) Semi-VOA - 8270A (Add-On) {Tributyl-phosphate}; TPH-Diesel Range - WTPH-DGST~~ 7/31/01

(3) ICP Metals - 6010TR (Client List) {Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}

~~(4) Gamma Spec - Add-On {Radium-226, Radium-228}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~ DSA 7/18/01

Matrix *: S=Soil; SD=Sediment; SO=Solid; SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-058-203 | Page 1 of 1

Collector Thomas G./Watson D./Nielson	**Company Contact** Todd, M.E.	**Telephone No.** (509) 372-9631	**Project Coordinator** TRENT, SJ
Project Designation 200-TW-1 & 2 - Soil Sampling	**Sampling Location** B-38/200 E Depth 22.5 - 25		**SAF No.** B01-058
Ice Chest No. SN/09198/040008	**Field Logbook No.** EL-1518	**COA** B20TW2674C	**Method of Shipment** Fed EX
Shipped To Sol 7-19-01 Severn Trent Incorporated - St. Louis	**Offsite Property No.** BSR 107054		**Bill of Lading/Air Bill No.** NA

Price Code 8N | Data Turnaround 45 Days | Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose 3.0 mR β & 2.0 mR γ on bottles

Samples stored in Ref.# 31 at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/3/01 for shipment. JT 8/8/01

SAMPLE ANALYSIS

W03574

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	cool 4°C		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL	60mL		
	Chromium Hex - 7196 GST 7-19-01	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions. GST 8/8/01	See item (3) in Special Instructions. Metals add on per SNK	See item (4) in Special Instructions.	Activity Scan Sol 7-19-01	Mercury 7470 (CV)	TIC TO	
Sample No.	Matrix *	Sample Date	Sample Time							
B12DB8 - A	SOIL	8/3/01	0120		X			X		X	B12B78
MW 8-9-01										

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thurnes/Greg Thurnes	8/3/01 0800	Ref 3C	8/3/01 0800
Ref 3C	8.8.01 0600	R.T. Thorson	8.8.01 0600
R.T. Thorson	8.8.01 0600	FEDEX	
FEDEX		Jill Clark	080901 0900

Sign/Print Names

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045
~~(2) Semi-VOA - 8270A (Add-On) {Tributyl phosphate}, TPH-Diesel Range - WTPH-D~~ GST 8/8/01
(3) ICP Metals - 6010TR (Client List) {Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}
~~(4) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Radium-226, Radium-228}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~ Sol 7-19-01

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

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

BHI-EE-011 (10/99)

STL

SEVERN TRENT SERVICES

3/22/2018 REV.1

Lot No.: F1H090189
W03574

Condition Upon Receipt Form
St. Louis Laboratory

Client: Bechtel Hanford 43018

Date: 080901 Time: 0900

Quote No:

Initiated by: JL

Shipper/No: Fed Ex 8115 1101 4290

COC/RFA Numbers: B01-058-165 B01-058-204 -205 -140 -141 -203

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see notes for explanation):

1.	(Y) N	Sample received in undamaged condition.	5.	(Y) N	Sample volume sufficient for analysis.
2.	Y (N)	Sample received within 4°C ± 2°C*	6.	(Y) N	Sample received with Chain of Custody.
		Record temperature: 7	7.	(Y) N	Chain of Custody matches sample IDs on containers.
3.	Y N (N/A)	Sample received with proper pH**.	8.	(Y) N	Custody seal received intact and tamper evident on cooler.
4.	(Y) N	Sample received in proper containers.	9.	(Y) N	Custody seal received intact and tamper evident on bottles.

* Temperature Variance Does Not Affect the Following Analyses: _____

** For DOE-AL (Pantex, LANL, Sandia, Timet) sites, remember to pH all containers received, except for VOA, TOX, and soils.

Notes: 7) Ice packs melted

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is". _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor (or designate) Review: Jill Clarke Date: 080901

Project Management Review: MWard Date: 8-9-01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIALS AND THE DATE NEXT TO THAT ITEM

BECHTEL HANFORD, INC.

Client Sample ID: B12C88-A

TOTAL Metals

Lot-Sample #...: F1H090189-001 Matrix.....: SOLID
Date Sampled...: 08/05/01 Date Received..: 08/09/01
% Moisture.....: 3.4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Cadmium	ND	0.52	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AD
		Dilution Factor: 1		MDL.....: 0.18		
Chromium	8.0	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AF
		Dilution Factor: 1		MDL.....: 0.31		
Copper	11.4	2.6	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AH
		Dilution Factor: 1		MDL.....: 0.39		
Lead	ND	10.4	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AK
		Dilution Factor: 1		MDL.....: 3.4		
Nickel	5.8	4.1	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AM
		Dilution Factor: 1		MDL.....: 0.89		
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPP21AP
		Dilution Factor: 1		MDL.....: 0.95		
Prep Batch #...: 1226153						
Mercury	ND	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPP21A6
		Dilution Factor: 1		MDL.....: 0.025		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/05/01 **Date Received..:** 08/09/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090189-001 **Prep Batch #...:** 1228153									
Mercury									
	ND	0.518	0.487	mg/kg	92		SW846 Hg Mod	08/16-08/17/01	EHPP21CM
	ND	0.518	0.480	mg/kg	90	1.4	SW846 Hg Mod	08/16-08/17/01	EHPP21CN

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B12DC0-A

TOTAL Metals

Lot-Sample #...: F1H090189-002 Matrix.....: SOLID
Date Sampled...: 08/05/01 Date Received..: 08/09/01
% Moisture.....: 3.2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Cadmium	ND	0.52	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1AX
		Dilution Factor: 1		MDL.....: 0.18		
Chromium	8.0	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1A0
		Dilution Factor: 1		MDL.....: 0.31		
Copper	11.8	2.6	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1A1
		Dilution Factor: 1		MDL.....: 0.39		
Lead	ND	10.3	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1A2
		Dilution Factor: 1		MDL.....: 3.3		
Nickel	5.6	4.1	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1A3
		Dilution Factor: 1		MDL.....: 0.89		
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPTF1A4
		Dilution Factor: 1		MDL.....: 0.95		
Prep Batch #...: 1228153						
Mercury	ND	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPTF1AE
		Dilution Factor: 1		MDL.....: 0.025		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B12C63-A

TOTAL Metals

Lot-Sample #...: F1H090189-003 **Matrix.....:** SOLID
Date Sampled...: 08/02/01 **Date Received..:** 08/09/01
% Moisture.....: 5.9

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Silver	ND	1.1 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.11	08/14-09/06/01	EHPVF1A3
Aluminum	**7600**	**21.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 2.6	**08/14-09/06/01**	**EHPVF1AA**
Calcium	**9610**	**531** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 10.2	**08/14-09/04/01**	**EHPVF1AC**
Cadmium	ND	0.53 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.021	08/14-09/06/01	EHPVF1AD
Chromium	**7.1**	**1.1** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.096	**08/14-09/06/01**	**EHPVF1AE**
Copper	**12.2**	**2.7** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.40	**08/14-09/06/01**	**EHPVF1AF**
Iron	**18100**	**10.6** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 2.4	**08/14-09/04/01**	**EHPVF1AG**
Magnesium	**3820**	**531** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 10	**08/14-09/04/01**	**EHPVF1AH**
Manganese	**287**	**1.6** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.064	**08/14-09/06/01**	**EHPVF1AJ**
Molybdenum	ND	4.3 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.92	08/14-09/06/01	EHPVF1AK
Nickel	**6.3**	**4.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.91	**08/14-09/06/01**	**EHPVF1AL**
Lead	**4.5**	**0.32** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.16	**08/14-09/06/01**	**EHPVF1A4**
Vanadium	**55.1**	**5.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.41	**08/14-09/06/01**	**EHPVF1A5**
Zinc	**43.9**	**2.1** Dilution Factor: 1	**mg/kg**	**SW846 6010B** MDL.....: 0.72	**08/14-09/06/01**	**EHPVF1A6**

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BECHTEL HANFORD, INC.

Client Sample ID: B12C63-A

TOTAL Metals

Lot-Sample #...: F1H090189-003 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Bismuth	ND	21.3	mg/kg	SW846 6010B	08/14-09/04/01	EHPVF1A7
		Dilution Factor: 1		MDL.....: 2.2		
Potassium	1140	531	mg/kg	SW846 6010B	08/14-09/04/01	EHPVF1A8
		Dilution Factor: 1		MDL.....: 300		
Sodium	551	531	mg/kg	SW846 6010B	08/14-09/04/01	EHPVF1A9
		Dilution Factor: 1		MDL.....: 10.3		
Prep Batch #...: 1228153						
Mercury	0.089 B	0.11	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPVF1AQ
		Dilution Factor: 1		MDL.....: 0.026		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/02/01 **Date Received..:** 08/09/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT		UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090189-003 **Prep Batch #...:** 1226194										
Aluminum										
	7600	213	9220	N	mg/kg	764		SW846 6010B	08/14-09/06/01	EHPVF1CR
	7600	213	8530	N	mg/kg	441	7.7	SW846 6010B	08/14-09/06/01	EHPVF1CT
			Dilution Factor: 1							
Cadmium										
	ND	5.31	3.75	N	mg/kg	71		SW846 6010B	08/14-09/06/01	EHPVF1CW
	ND	5.31	3.92	N	mg/kg	74	4.4	SW846 6010B	08/14-09/06/01	EHPVF1CX
			Dilution Factor: 1							
Calcium										
	9610	5310	15200		mg/kg	105		SW846 6010B	08/14-09/04/01	EHPVF1CU
	9610	5310	16300		mg/kg	125	7.0	SW846 6010B	08/14-09/04/01	EHPVF1CV
			Dilution Factor: 1							
Chromium										
	7.1	21.3	27.3		mg/kg	95		SW846 6010B	08/14-09/06/01	EHPVF1C0
	7.1	21.3	28.4		mg/kg	100	4.1	SW846 6010B	08/14-09/06/01	EHPVF1C1
			Dilution Factor: 1							
Copper										
	12.2	26.6	41.6		mg/kg	111		SW846 6010B	08/14-09/06/01	EHPVF1C2
	12.2	26.6	38.6		mg/kg	99	7.4	SW846 6010B	08/14-09/06/01	EHPVF1C3
			Dilution Factor: 1							
Iron										
	18100	106	22500	N	mg/kg	202		SW846 6010B	08/14-09/04/01	EHPVF1C4
	18100	106	18300	N,*	mg/kg	195	21	SW846 6010B	08/14-09/04/01	EHPVF1C5
			Dilution Factor: 1							
Lead										
	4.5	53.1	51.8		mg/kg	89		SW846 6010B	08/14-09/06/01	EHPVF1CD
	4.5	53.1	50.9		mg/kg	87	1.8	SW846 6010B	08/14-09/06/01	EHPVF1CE
			Dilution Factor: 1							
Magnesium										
	3820	5310	9760		mg/kg	112		SW846 6010B	08/14-09/04/01	EHPVF1C6
	3820	5310	10000		mg/kg	117	2.8	SW846 6010B	08/14-09/04/01	EHPVF1C7
			Dilution Factor: 1							

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/02/01 **Date Received..:** 08/09/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese									
	287	53.1	337	mg/kg	93		SW846 6010B	08/14-09/06/01	EHPVF1C8
	287	53.1	342	mg/kg	103	1.5	SW846 6010B	08/14-09/06/01	EHPVF1C9
			Dilution Factor: 1						
Molybdenum									
	ND	106	100	mg/kg	94		SW846 6010B	08/14-09/06/01	EHPVF1DA
	ND	106	99.6	mg/kg	94	0.63	SW846 6010B	08/14-09/06/01	EHPVF1DC
			Dilution Factor: 1						
Nickel									
	6.3	53.1	54.9	mg/kg	91		SW846 6010B	08/14-09/06/01	EHPVF1DD
	6.3	53.1	55.6	mg/kg	93	1.2	SW846 6010B	08/14-09/06/01	EHPVF1DE
			Dilution Factor: 1						
Silver									
	ND	5.31	3.96	mg/kg	75		SW846 6010B	08/14-09/06/01	EHPVF1CA
	ND	5.31	4.00	mg/kg	75	0.98	SW846 6010B	08/14-09/06/01	EHPVF1CC
			Dilution Factor: 1						
Vanadium									
	55.1	53.1	108	mg/kg	99		SW846 6010B	08/14-09/06/01	EHPVF1CF
	55.1	53.1	94.1 N	mg/kg	73	13	SW846 6010B	08/14-09/06/01	EHPVF1CG
			Dilution Factor: 1						
Zinc									
	43.9	53.1	100	mg/kg	106		SW846 6010B	08/14-09/06/01	EHPVF1CH
	43.9	53.1	94.2	mg/kg	95	6.2	SW846 6010B	08/14-09/06/01	EHPVF1CJ
			Dilution Factor: 1						
Bismuth									
	ND	213	119 N	mg/kg	56		SW846 6010B	08/14-09/04/01	EHPVF1CK
	ND	213	147 N,*	mg/kg	69	21	SW846 6010B	08/14-09/04/01	EHPVF1CL
			Dilution Factor: 1						
Potassium									
	1140	5310	6120	mg/kg	94		SW846 6010B	08/14-09/04/01	EHPVF1CM
	1140	5310	6020	mg/kg	92	1.6	SW846 6010B	08/14-09/04/01	EHPVF1CN
			Dilution Factor: 1						
Sodium									
	551	5310	5550	mg/kg	94		SW846 6010B	08/14-09/04/01	EHPVF1CP
	551	5310	5450	mg/kg	92	1.8	SW846 6010B	08/14-09/04/01	EHPVF1CQ
			Dilution Factor: 1						

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MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/02/01 **Date Received..:** 08/09/01

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

BECHTEL HANFORD, INC.

Client Sample ID: B12DB9-A

TOTAL Metals

Lot-Sample #...: F1H090189-004 Matrix.....: SOLID
Date Sampled...: 08/03/01 Date Received..: 08/09/01
% Moisture.....: 3.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A8
		Dilution Factor: 1		MDL.....: 0.96		
Cadmium	ND	0.52	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A3
		Dilution Factor: 1		MDL.....: 0.18		
Chromium	9.2	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A4
		Dilution Factor: 1		MDL.....: 0.31		
Copper	9.9	2.6	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A5
		Dilution Factor: 1		MDL.....: 0.39		
Nickel	9.9	4.2	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A7
		Dilution Factor: 1		MDL.....: 0.89		
Lead	3.9 B	10.4	mg/kg	SW846 6010B	08/14-09/06/01	EHPVM1A6
		Dilution Factor: 1		MDL.....: 3.4		
Prep Batch #...: 1228153						
Mercury	ND	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPVM1AQ
		Dilution Factor: 1		MDL.....: 0.025		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B12C64-A

TOTAL Metals

Lot-Sample #...: F1H090189-005 Matrix.....: SOLID
Date Sampled...: 08/02/01 Date Received..: 08/09/01
% Moisture.....: 4.1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Silver	ND	1.0 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.10	08/14-09/06/01	EHPVX1A3
Aluminum	7830	20.9 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 2.5	08/14-09/06/01	EHPVX1AA
Calcium	8030	522 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 10.0	08/14-09/04/01	EHPVX1AC
Cadmium	ND	0.52 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.021	08/14-09/06/01	EHPVX1AD
Chromium	10	1.0 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.094	08/14-09/06/01	EHPVX1AE
Copper	13.0	2.6 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.40	08/14-09/06/01	EHPVX1AF
Iron	19800	10.4 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 2.3	08/14-09/04/01	EHPVX1AG
Magnesium	4580	522 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 9.8	08/14-09/04/01	EHPVX1AH
Manganese	317	1.6 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.063	08/14-09/06/01	EHPVX1AJ
Molybdenum	ND	4.2 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.91	08/14-09/06/01	EHPVX1AK
Nickel	6.6	4.2 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.90	08/14-09/06/01	EHPVX1AL
Lead	5.9	0.31 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.16	08/14-09/06/01	EHPVX1A4
Vanadium	63.9	5.2 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.41	08/14-09/06/01	EHPVX1A5
Zinc	54.9	2.1 Dilution Factor: 1	mg/kg	SW846 6010B MDL.....: 0.71	08/14-09/06/01	EHPVX1A6

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BECHTEL HANFORD, INC.

Client Sample ID: B12C64-A

TOTAL Metals

Lot-Sample #...: F1H090189-005 **Matrix.....: SOLID**

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Bismuth	ND	20.9	mg/kg	SW846 6010B	08/14-09/04/01	EHPVX1A7
		Dilution Factor: 1		MDL.....: 2.2		
Potassium	1120	522	mg/kg	SW846 6010B	08/14-09/04/01	EHPVX1A8
		Dilution Factor: 1		MDL.....: 295		
Sodium	848	522	mg/kg	SW846 6010B	08/14-09/04/01	EHPVX1A9
		Dilution Factor: 1		MDL.....: 10.1		
Prep Batch #...: 1228153						
Mercury	0.035 B	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPVX1AQ
		Dilution Factor: 1		MDL.....: 0.025		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B12DB8-A

TOTAL Metals

Lot-Sample #...: F1H090189-006 **Matrix.....:** SOLID
Date Sampled...: 08/03/01 **Date Received..:** 08/09/01
% Moisture.....: 3.4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1226194						
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A8
		Dilution Factor: 1		MDL.....: 0.95		
Cadmium	ND	0.52	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A3
		Dilution Factor: 1		MDL.....: 0.18		
Chromium	11.1	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A4
		Dilution Factor: 1		MDL.....: 0.31		
Copper	11.7	2.6	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A5
		Dilution Factor: 1		MDL.....: 0.39		
Nickel	8.1	4.1	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A7
		Dilution Factor: 1		MDL.....: 0.89		
Lead	4.2 B	10.4	mg/kg	SW846 6010B	08/14-09/06/01	EHPV11A6
		Dilution Factor: 1		MDL.....: 3.4		
Prep Batch #...: 1228153						
Mercury	0.025 B	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EHPV11AQ
		Dilution Factor: 1		MDL.....: 0.025		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H140000-194 **Prep Batch #...:** 1226194						
Aluminum	ND	20.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AH
		Dilution Factor: 1				
Calcium	ND	500	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31AJ
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31AN
		Dilution Factor: 1				
Magnesium	ND	500	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31AP
		Dilution Factor: 1				
Manganese	ND	1.5	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AQ
		Dilution Factor: 1				
Molybdenum	ND	4.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AR
		Dilution Factor: 1				
Vanadium	ND	5.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AW
		Dilution Factor: 1				
Zinc	ND	2.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AX
		Dilution Factor: 1				
Bismuth	ND	20.0	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31A0
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AA
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AK
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AC
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AL
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AD
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AM
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	10.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AE
		Dilution Factor: 1				
Lead	ND	10.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AV
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AF
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AT
		Dilution Factor: 1				
Potassium	ND	500	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31A1
		Dilution Factor: 1				
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AG
		Dilution Factor: 1				
Silver	ND	1.0	mg/kg	SW846 6010B	08/14-09/06/01	EHXV31AU
		Dilution Factor: 1				
Sodium	ND	500	mg/kg	SW846 6010B	08/14-09/04/01	EHXV31A2
		Dilution Factor: 1				

MB Lot-Sample #: F1H160000-153 **Prep Batch #...:** 1228153

Mercury	ND	0.10	mg/kg	SW846 Hg Mod 7470	08/16-08/17/01	EH3061AA
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H140000-194 **Prep Batch #...:** 1226194							
Cadmium	157	166	mg/kg	106	SW846 6010B	08/14-09/06/01	EHXV31A3
			Dilution Factor: 1				
Chromium	51.4	50.3	mg/kg	98	SW846 6010B	08/14-09/06/01	EHXV31A4
			Dilution Factor: 1				
Copper	69.5	76.9	mg/kg	111	SW846 6010B	08/14-09/06/01	EHXV31A5
			Dilution Factor: 1				
Lead	186	179	mg/kg	96	SW846 6010B	08/14-09/06/01	EHXV31A6
			Dilution Factor: 1				
Nickel	112	113	mg/kg	101	SW846 6010B	08/14-09/06/01	EHXV31A7
			Dilution Factor: 1				
Silver	84.3	91.7	mg/kg	109	SW846 6010B	08/14-09/06/01	EHXV31A8
			Dilution Factor: 1				
Aluminum	9200	8510	mg/kg	92	SW846 6010B	08/14-09/06/01	EHXV31A9
			Dilution Factor: 1				
Calcium	11700	12300	mg/kg	105	SW846 6010B	08/14-09/04/01	EHXV31CA
			Dilution Factor: 1				
Cadmium	157	166	mg/kg	106	SW846 6010B	08/14-09/06/01	EHXV31CC
			Dilution Factor: 1				
Chromium	51.4	50.3	mg/kg	98	SW846 6010B	08/14-09/06/01	EHXV31CD
			Dilution Factor: 1				
Copper	69.5	76.9	mg/kg	111	SW846 6010B	08/14-09/06/01	EHXV31CE
			Dilution Factor: 1				
Iron	13700	13700	mg/kg	100	SW846 6010B	08/14-09/04/01	EHXV31CF
			Dilution Factor: 1				
Magnesium	3070	3080	mg/kg	100	SW846 6010B	08/14-09/04/01	EHXV31CG
			Dilution Factor: 1				
Manganese	674	684	mg/kg	101	SW846 6010B	08/14-09/06/01	EHXV31CH
			Dilution Factor: 1				

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Molybdenum	62.7	71.2	mg/kg	114	SW846 6010B	08/14-09/06/01	EHXV31CJ
			Dilution Factor: 1				
Nickel	112	113	mg/kg	101	SW846 6010B	08/14-09/06/01	EHXV31CK
			Dilution Factor: 1				
Silver	84.3	91.7	mg/kg	109	SW846 6010B	08/14-09/06/01	EHXV31CL
			Dilution Factor: 1				
Lead	186	179	mg/kg	96	SW846 6010B	08/14-09/06/01	EHXV31CM
			Dilution Factor: 1				
Vanadium	136	141	mg/kg	104	SW846 6010B	08/14-09/06/01	EHXV31CN
			Dilution Factor: 1				
Zinc	289	297	mg/kg	103	SW846 6010B	08/14-09/06/01	EHXV31CP
			Dilution Factor: 1				
Bismuth	200	186	mg/kg	93	SW846 6010B	08/14-09/04/01	EHXV31CQ
			Dilution Factor: 1				
Potassium	3640	3340	mg/kg	92	SW846 6010B	08/14-09/04/01	EHXV31CR
			Dilution Factor: 1				
Sodium	863	764	mg/kg	88	SW846 6010B	08/14-09/04/01	EHXV31CT
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

BECHTEL HANFORD, INC.

Client Sample ID: B12C88-A

General Chemistry

Lot-Sample #...: F1H090189-001 Work Order #...: EHPP2 Matrix.....: SOLID
Date Sampled...: 08/05/01 Date Received..: 08/09/01
% Moisture.....: 3.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	137 B	259	mg/kg	MCAWW 300.0A	08/16/01	1229478
	Dilution Factor: 1			MDL.....: 0.36		
pH (solid)	9.5		No Units	SW846 9045A	08/16/01	1228330
	Dilution Factor: 1			MDL.....:		
Chloride	24.6 B	104	mg/kg	MCAWW 300.0A	08/16/01	1229473
	Dilution Factor: 1			MDL.....: 0.10		
Fluoride	32.9 B	51.8	mg/kg	MCAWW 300.0A	08/16/01	1229474
	Dilution Factor: 1			MDL.....: 0.062		
Nitrate	139	10.4	mg/kg	MCAWW 300.0A	08/16/01	1229475
	Dilution Factor: 10			MDL.....: 0.21		
Nitrate/Nitrite as N	110	51.8	mg/kg	MCAWW 353.1	08/28/01	1241548
	Dilution Factor: 100			MDL.....: 3.7		
Nitrite	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
	Dilution Factor: 1			MDL.....: 0.021		
Nitrogen, as Ammonia	29.3	2.1	mg/kg	MCAWW 350.1	08/29/01	1242117
	Dilution Factor: 4			MDL.....: 0.53		
Percent Moisture	3.4	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
	Dilution Factor: 1			MDL.....:		
Sulfate	69.8 B	259	mg/kg	MCAWW 300.0A	08/16/01	1229477
	Dilution Factor: 1			MDL.....: 0.30		
Total Cyanide	ND	0.26	mg/kg	SW846 9010A	08/27/01	1234455
	Dilution Factor: 1			MDL.....: 0.13		
Total Organic Carbon	1610	25.9	mg/kg	SW846 9060	08/25/01	1239473
	Dilution Factor: 1			MDL.....: 16.1		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090189 **Work Order #...:** EHPP2-SMP EHPP2-DUP **Matrix.....:** SOLID

Date Sampled...: 08/05/01 **Date Received..:** 08/09/01

% Moisture.....: 3.4

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H090189-001		
	24.6 B	24.9	mg/kg	1.2	(0-35)	MCAWW 300.0A	08/16/01	1229473
			Dilution Factor: 1					
Fluoride						SD Lot-Sample #: F1H090189-001		
	32.9 B	32.3	mg/kg	1.6	(0-35)	MCAWW 300.0A	08/16/01	1229474
			Dilution Factor: 1					
Nitrate						SD Lot-Sample #: F1H090189-001		
	139	140	mg/kg	0.33	(0-35)	MCAWW 300.0A	08/16/01	1229475
			Dilution Factor: 10					
Nitrite						SD Lot-Sample #: F1H090189-001		
	ND	1.3	mg/kg	200	(0-35)	MCAWW 300.0A	08/16/01	1229476
			Dilution Factor: 1					
Sulfate						SD Lot-Sample #: F1H090189-001		
	69.8 B	70.6	mg/kg	1.2	(0-20)	MCAWW 300.0A	08/16/01	1229477
			Dilution Factor: 1					
Phosphate as P, Ortho						SD Lot-Sample #: F1H090189-001		
	137 B	137	mg/kg	0.21	(0-35)	MCAWW 300.0A	08/16/01	1229478
			Dilution Factor: 1					
Nitrogen, as Ammonia						SD Lot-Sample #: F1H090189-001		
	29.3	29.6	mg/kg	1.1	(0-35)	MCAWW 350.1	08/29/01	1242117
			Dilution Factor: 4					
Nitrate/Nitrite as N						SD Lot-Sample #: F1H090189-001		
	110	128	mg/kg	16	(0-35)	MCAWW 353.1	08/28/01	1241548
			Dilution Factor: 100					
Total Cyanide						SD Lot-Sample #: F1H090189-001		
	ND	0.37	mg/kg	200	(0-35)	SW846 9010A	08/27/01	1234455
			Dilution Factor: 1					
pH (solid)						SD Lot-Sample #: F1H090189-001		
	9.5	9.5	No Units	0.42	(0-20)	SW846 9045A	08/16/01	1228330
			Dilution Factor: 1					
Total Organic Carbon						SD Lot-Sample #: F1H090189-001		
	1610	1110	mg/kg	36	(0-30)	SW846 9060	08/25/01	1239473
			Dilution Factor: 1					

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SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F1H090189-000 **Work Order #...:** EHPP2-SMP EHPP2-DUP **Matrix.....:** SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B12DC0-A

General Chemistry

Lot-Sample #...: F1H090189-002 Work Order #...: EHPTF Matrix.....: SOLID
Date Sampled...: 08/05/01 Date Received..: 08/09/01
% Moisture.....: 3.2

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	106 B	258	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1		MDL.....: 0.36		
pH (solid)	8.8		No Units	SW846 9045A	08/16/01	1228330
		Dilution Factor: 1		MDL.....:		
Chloride	20.5 B	103	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1		MDL.....: 0.10		
Fluoride	28.9 B	51.7	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1		MDL.....: 0.062		
Nitrate	118	10.3	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 10		MDL.....: 0.21		
Nitrate/Nitrite as N	146	51.7	mg/kg	MCAWW 353.1	08/28/01	1241548
		Dilution Factor: 100		MDL.....: 3.7		
Nitrite	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1		MDL.....: 0.021		
Nitrogen, as Ammonia	26.0	2.1	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 4		MDL.....: 0.53		
Percent Moisture	3.2	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
		Dilution Factor: 1		MDL.....:		
Sulfate	60.6 B	258	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1		MDL.....: 0.30		
Total Cyanide	ND	0.26	mg/kg	SW846 9010A	08/27/01	1234455
		Dilution Factor: 1		MDL.....: 0.13		
Total Organic Carbon	1550	25.8	mg/kg	SW846 9060	08/25/01	1239473
		Dilution Factor: 1		MDL.....: 16.0		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B12C63-A

General Chemistry

Lot-Sample #...: F1H090189-003 Work Order #...: EHPVF Matrix.....: SOLID
Date Sampled...: 08/02/01 Date Received..: 08/09/01
% Moisture.....: 5.9

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	ND	266	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1		MDL.....: 0.37		
pH (solid)	8.9		No Units	SW846 9045A	08/16/01	1228330
		Dilution Factor: 1		MDL.....:		
Chloride	ND	106	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1		MDL.....: 0.11		
Fluoride	7.4 B	53.1	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1		MDL.....: 0.064		
Nitrate	43.5	1.1	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 1		MDL.....: 0.021		
Nitrate/Nitrite as N	39.5	2.1	mg/kg	MCAWW 353.1	08/28/01	1241548
		Dilution Factor: 4		MDL.....: 0.15		
Nitrite	ND	1.1	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1		MDL.....: 0.021		
Nitrogen, as Ammonia	ND	0.53	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 1		MDL.....: 0.14		
Percent Moisture	5.9	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
		Dilution Factor: 1		MDL.....:		
Sulfate	114 B	266	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1		MDL.....: 0.31		
Total Cyanide	ND	0.53	mg/kg	SW846 9010A	08/16/01	1234453
		Dilution Factor: 1		MDL.....: 0.13		
Total Organic Carbon	1510	26.6	mg/kg	SW846 9060	08/27/01	1239474
		Dilution Factor: 1		MDL.....: 16.5		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

B Estimated result. Result is less than RL.

BECHTEL HANFORD, INC.

Client Sample ID: B12DB9-A

General Chemistry

Lot-Sample #...: F1H090189-004 Work Order #...: EHPVM Matrix.....: SOLID
Date Sampled...: 08/03/01 Date Received..: 08/09/01
% Moisture.....: 3.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	67.4 B	260	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1		MDL.....: 0.36		
pH (solid)	9.6		No Units	SW846 9045A	08/16/01	1228330
		Dilution Factor: 1		MDL.....:		
Chloride	11.7 B	104	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1		MDL.....: 0.10		
Fluoride	33.4 B	52.0	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1		MDL.....: 0.062		
Nitrate	31.8	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 1		MDL.....: 0.021		
Nitrate/Nitrite as N	25.3	2.1	mg/kg	MCAWW 353.1	08/28/01	1241548
		Dilution Factor: 4		MDL.....: 0.15		
Nitrite	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1		MDL.....: 0.021		
Nitrogen, as Ammonia	ND	0.52	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 1		MDL.....: 0.13		
Percent Moisture	3.8	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
		Dilution Factor: 1		MDL.....:		
Sulfate	151 B	260	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1		MDL.....: 0.30		
Total Cyanide	0.31	0.26	mg/kg	SW846 9010A	08/27/01	1234455
		Dilution Factor: 1		MDL.....: 0.13		
Total Organic Carbon	2760	26.0	mg/kg	SW846 9060	08/25/01	1239473
		Dilution Factor: 1		MDL.....: 16.1		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B12C64-A

General Chemistry

Lot-Sample #...: F1H090189-005 Work Order #...: EHPVX Matrix.....: SOLID
Date Sampled...: 08/02/01 Date Received..: 08/09/01
% Moisture.....: 4.1

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	27.1 B	261	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1		MDL.....: 0.37		
pH (solid)	9.6		No Units	SW846 9045A	08/16/01	1228330
		Dilution Factor: 1		MDL.....		
Chloride	ND	104	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1		MDL.....: 0.10		
Fluoride	14.2 B	52.2	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1		MDL.....: 0.063		
Nitrate	12.3	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 1		MDL.....: 0.021		
Nitrate/Nitrite as N	6.1	0.52	mg/kg	MCAWW 353.1	08/27/01	1241548
		Dilution Factor: 1		MDL.....: 0.037		
Nitrite	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1		MDL.....: 0.021		
Nitrogen, as Ammonia	ND	0.52	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 1		MDL.....: 0.13		
Percent Moisture	4.1	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
		Dilution Factor: 1		MDL.....		
Sulfate	35.0 B	261	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1		MDL.....: 0.30		
Total Cyanide	ND	0.52	mg/kg	SW846 9010A	08/16/01	1234453
		Dilution Factor: 1		MDL.....: 0.13		
Total Organic Carbon	988	26.1	mg/kg	SW846 9060	08/27/01	1239474
		Dilution Factor: 1		MDL.....: 16.2		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: B12DB8-A

General Chemistry

Lot-Sample #...: F1H090189-006 Work Order #...: EHPV1 Matrix.....: SOLID
Date Sampled...: 08/03/01 Date Received..: 08/09/01
% Moisture.....: 3.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Phosphate as P, Ortho	34.1 B	259	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1		MDL.....: 0.36		
pH (solid)	9.4		No Units	SW846 9045A	08/16/01	1228330
		Dilution Factor: 1		MDL.....		
Chloride	ND	104	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1		MDL.....: 0.10		
Fluoride	20.0 B	51.8	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1		MDL.....: 0.062		
Nitrate	15.3	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 1		MDL.....: 0.021		
Nitrate/Nitrite as N	8.4	1.0	mg/kg	MCAWW 353.1	08/28/01	1241548
		Dilution Factor: 2		MDL.....: 0.074		
Nitrite	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1		MDL.....: 0.021		
Nitrogen, as Ammonia	ND	0.52	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 1		MDL.....: 0.13		
Percent Moisture	3.4	0.10	%	MCAWW 160.3 MOD	08/10/01	1225216
		Dilution Factor: 1		MDL.....		
Sulfate	49.1 B	259	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1		MDL.....: 0.30		
Total Cyanide	0.42	0.26	mg/kg	SW846 9010A	08/27/01	1234455
		Dilution Factor: 1		MDL.....: 0.13		
Total Organic Carbon	1380	25.9	mg/kg	SW846 9060	08/25/01	1239473
		Dilution Factor: 1		MDL.....: 16.0		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/05/01 **Date Received..:** 08/09/01

Percnt Moisture: 0.0

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
ortho-Phosphate			Work Order #...: EHPP21CL			MS Lot-Sample #: F1H090189-001		
	137	189	323	mg/kg	99	MCAWW 300.0A	08/16/01	1229478
			Dilution Factor: 1					
Chloride			Work Order #...: EHPP21CQ			MS Lot-Sample #: F1H090189-001		
	24.6	94.3	120	mg/kg	102	MCAWW 300.0A	08/16/01	1229473
			Dilution Factor: 1					
Fluoride			Work Order #...: EHPP21CR			MS Lot-Sample #: F1H090189-001		
	32.9	94.3	139	mg/kg	112	MCAWW 300.0A	08/16/01	1229474
			Dilution Factor: 1					
Nitrate			Work Order #...: EHPP21CT			MS Lot-Sample #: F1H090189-001		
	139	189	331	mg/kg	101	MCAWW 300.0A	08/16/01	1229475
			Dilution Factor: 10					
Nitrate/Nitrite as N			Work Order #...: EHPP21CU			MS Lot-Sample #: F1H090189-001		
	110	518	757	mg/kg	125	MCAWW 353.1	08/28/01	1241548
			Dilution Factor: 100					
Nitrite			Work Order #...: EHPP21CJ			MS Lot-Sample #: F1H090189-001		
	ND	4.71	5.82	mg/kg	123	MCAWW 300.0A	08/16/01	1229476
			Dilution Factor: 1					
Nitrogen, as Ammonia			Work Order #...: EHPP21CP			MS Lot-Sample #: F1H090189-001		
	29.3	20.7	53.1	mg/kg	115	MCAWW 350.1	08/29/01	1242117
			Dilution Factor: 4					
Sulfate			Work Order #...: EHPP21CK			MS Lot-Sample #: F1H090189-001		
	69.8	189	257	mg/kg	99	MCAWW 300.0A	08/16/01	1229477
			Dilution Factor: 1					
Total Cyanide			Work Order #...: EHPP21CV			MS Lot-Sample #: F1H090189-001		
	ND	5.18	5.82	mg/kg	112	SW846 9010A	08/27/01	1234455
			Dilution Factor: 1					
Total Organic Carbon			Work Order #...: EHPP21CW			MS Lot-Sample #: F1H090189-001		
	1610	2160	2720 N	mg/kg	51	SW846 9060	08/25/01	1239473
			Dilution Factor: 1					

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MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F1H090189 **Matrix.....:** SOLID
Date Sampled...: 08/05/01 **Date Received..:** 08/09/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon			Work Order #...: EHPVX1CA			MS Lot-Sample #: F1H090189-005		
	988	1090	1900	mg/kg	84	SW846 9060	08/27/01	1239474
			Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: EH7KA1AA		MB Lot-Sample #:	F1H170000-473	
	ND	100	mg/kg	MCAWW 300.0A	08/16/01	1229473
		Dilution Factor: 1				
Fluoride		Work Order #: EH7KG1AA		MB Lot-Sample #:	F1H170000-474	
	ND	50.0	mg/kg	MCAWW 300.0A	08/16/01	1229474
		Dilution Factor: 1				
Nitrate		Work Order #: EH7KN1AA		MB Lot-Sample #:	F1H170000-475	
	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229475
		Dilution Factor: 1				
Nitrate/Nitrite as N		Work Order #: EJRNF1AA		MB Lot-Sample #:	F1H290000-548	
	ND	0.50	mg/kg	MCAWW 353.1	08/28/01	1241548
		Dilution Factor: 1				
Nitrite		Work Order #: EH7KX1AA		MB Lot-Sample #:	F1H170000-476	
	ND	1.0	mg/kg	MCAWW 300.0A	08/16/01	1229476
		Dilution Factor: 1				
Nitrogen, as Ammonia		Work Order #: EJRNT1AA		MB Lot-Sample #:	F1H300000-117	
	ND	0.50	mg/kg	MCAWW 350.1	08/29/01	1242117
		Dilution Factor: 1				
Phosphate as P, Ortho		Work Order #: EH7LA1AA		MB Lot-Sample #:	F1H170000-478	
	ND	250	mg/kg	MCAWW 300.0A	08/16/01	1229478
		Dilution Factor: 1				
Sulfate		Work Order #: EH7K41AA		MB Lot-Sample #:	F1H170000-477	
	ND	250	mg/kg	MCAWW 300.0A	08/16/01	1229477
		Dilution Factor: 1				
Total Cyanide		Work Order #: EJD5W1AA		MB Lot-Sample #:	F1H220000-453	
	ND	0.50	mg/kg	SW846 9010A	08/16/01	1234453
		Dilution Factor: 1				
Total Cyanide		Work Order #: EJD5H1AA		MB Lot-Sample #:	F1H220000-455	
	ND	0.25	mg/kg	SW846 9010A	08/27/01	1234455
		Dilution Factor: 1				
Total Organic Carbon		Work Order #: EJMFA1AA		MB Lot-Sample #:	F1H270000-473	
	ND	25.0	mg/kg	SW846 9060	08/25/01	1239473
		Dilution Factor: 1				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon		Work Order #: EJMFC1AA		MB Lot-Sample #:	F1H270000-474	
	ND	25.0	mg/kg	SW846 9060	08/27/01	1239474
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: F1H090189 **Matrix.....: SOLID**

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride			WO#:EH7KA1AC-LCS/EH7KA1AD-LCSD			LCS Lot-Sample#: F1H170000-473		
	10.0	10.1	mg/kg	101		MCAWW 300.0A	08/16/01	1229473
	10.0	10.2	mg/kg	102	1.2	MCAWW 300.0A	08/16/01	1229473
			Dilution Factor: 1					
Fluoride			WO#:EH7KG1AC-LCS/EH7KG1AD-LCSD			LCS Lot-Sample#: F1H170000-474		
	10.0	9.44	mg/kg	94		MCAWW 300.0A	08/16/01	1229474
	10.0	9.49	mg/kg	95	0.60	MCAWW 300.0A	08/16/01	1229474
			Dilution Factor: 1					
Nitrate			WO#:EH7KN1AC-LCS/EH7KN1AD-LCSD			LCS Lot-Sample#: F1H170000-475		
	2.00	1.88	mg/kg	94		MCAWW 300.0A	08/16/01	1229475
	2.00	1.98	mg/kg	99	5.2	MCAWW 300.0A	08/16/01	1229475
			Dilution Factor: 1					
Nitrate/Nitrite as N			WO#:EJRNF1AC-LCS/EJRNF1AD-LCSD			LCS Lot-Sample#: F1H290000-548		
	4.00	3.93	mg/kg	98		MCAWW 353.1	08/28/01	1241548
	4.00	3.87	mg/kg	97	1.5	MCAWW 353.1	08/28/01	1241548
			Dilution Factor: 1					
Nitrite			WO#:EH7KX1AC-LCS/EH7KX1AD-LCSD			LCS Lot-Sample#: F1H170000-476		
	0.800	0.780	mg/kg	98		MCAWW 300.0A	08/16/01	1229476
	0.800	0.810	mg/kg	101	3.8	MCAWW 300.0A	08/16/01	1229476
			Dilution Factor: 1					
Nitrogen, as Ammonia			WO#:EJRNT1AC-LCS/EJRNT1AD-LCSD			LCS Lot-Sample#: F1H300000-117		
	4.00	3.99	mg/kg	100		MCAWW 350.1	08/29/01	1242117
	4.00	4.11	mg/kg	103	3.0	MCAWW 350.1	08/29/01	1242117
			Dilution Factor: 1					
Phosphate as P, Ortho			WO#:EH7LA1AC-LCS/EH7LA1AD-LCSD			LCS Lot-Sample#: F1H170000-478		
	40.0	39.9	mg/kg	100		MCAWW 300.0A	08/16/01	1229478
	40.0	39.9	mg/kg	100	0.15	MCAWW 300.0A	08/16/01	1229478
			Dilution Factor: 1					
Sulfate			WO#:EH7K41AC-LCS/EH7K41AD-LCSD			LCS Lot-Sample#: F1H170000-477		
	40.0	38.3	mg/kg	96		MCAWW 300.0A	08/16/01	1229477
	40.0	38.8	mg/kg	97	1.3	MCAWW 300.0A	08/16/01	1229477
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD		PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon		WO#:EJMFA1AC-LCS/EJMFA1AD-LCSD					LCS Lot-Sample#: F1H270000-473		
	600	544	mg/kg	91		SW846	9060	08/25/01	1239473
	600	560	mg/kg	93	3.0	SW846	9060	08/25/01	1239473
		Dilution Factor: 1							
Total Organic Carbon		WO#:EJMFC1AC-LCS/EJMFC1AD-LCSD					LCS Lot-Sample#: F1H270000-474		
	600	549	mg/kg	91		SW846	9060	08/27/01	1239474
	600	552	mg/kg	92	0.54	SW846	9060	08/27/01	1239474
		Dilution Factor: 1							

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F1H090189 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)			Work Order #: EH55H1AA	LCS Lot-Sample#:		F1H160000-330	
	7.00	7.00	No Units	100	SW846 9045A	08/16/01	1228330
			Dilution Factor: 1				
Total Cyanide			Work Order #: EJD5W1AC	LCS Lot-Sample#:		F1H220000-453	
	5.00	4.52	mg/kg	90	SW846 9010A	08/16/01	1234453
			Dilution Factor: 1				
Total Cyanide			Work Order #: EJD5H1AC	LCS Lot-Sample#:		F1H220000-455	
	5.00	5.11	mg/kg	102	SW846 9010A	08/27/01	1234455
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEVERN TRENT SERVICES

STL Richland
2800 George Washington Way
Richland, WA 99352-1613

Tel: 509 375 3131
Fax: 509 375 5590
www.stl-inc.com

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

September 19, 2001

Attention: Joan Kessner

SAF Number	:	B01-058
Date SDG Closed	:	August 8, 2001
Number of Samples	:	Six (6)
Sample Type	:	Soil
SDG Number	:	W03574
Data Deliverable	:	45-Day / Summary

I. Introduction

On August 8, 2001, six soil samples were received at STL Richland (STLR) for chemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

STLR ID#	BHI ID#	MATRIX	DATE OF RECEIPT
9EHM3510	B12C88-A	SOIL	8/08/01
9EHM3710	B12DB9-A	SOIL	8/08/01
9EHM4C10	B12C64-A	SOIL	8/08/01
9EHM4E10	B12DB8-A	SOIL	8/08/01
9EHM4J10	B12DC0-A	SOIL	8/08/01
9EHM4L10	B12C63-A	SOIL	8/08/01

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analysis was: **Chemical Analysis**
Chromium Hex by EPA method 7196

000002

III. Quality Control

The analytical results for each analysis performed under SDG W03574 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in mg/L.

IV. Comments

Chemical Analyses
Chromium Hex by EPA method 7196:
The LCS, batch blank, samples, sample duplicate (B12DB9~~)~~ and sample matrix spike (B12DB9~~)~~ results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Jackie Waddell
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D57174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) *u_c - Combined Uncertainty.*	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * *Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin))* * *(ConvFct/(Eff*Yld*Abn*Vol)* * *IngrFct). For LSC methods the* batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume *with a Type I and II error probability of approximately 5%. MDC =* (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[*sqrt*(TPUs^2 + TPUd^2)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

000005

Sample Results Summary

Date: 19-Sep-01

STL Richland STLRL

Ordered by Client Sample ID, Batch No.

Report No. : 14332 **SDG No:** W03574

Client ID	Work Order Number	Parameter	Result	+- Uncertainty	Qual	Units	Yield	MDC|MDA	RER
B12C63-A	EHM4L1AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12C64-A	EHM4C1AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12C88-A	EHM351AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12DB8-A	EHM4E1AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12DB9-A	EHM371AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12DB9 DUP-A	EHM371AF	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	
B12DC0-A	EHM4J1AA	HEXCHROME	8.00E-02	+- 0.0E+00 (2s)	U	mg/kg	N/A	8.00E-02	

Number of Results: 7

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

000006

QC Results Summary

STL Richland STLRL

Ordered by QC Type, Batch No.

Date: 19-Sep-01

Report No. : 14332 **SDG No.:** W03574

QC Type	Work Order Number	Parameter	Result +- Uncertainty	Qual	Units	Yield	Recovery	Bias	MDC|MDA
MATRIX SPI	EHM371AD	HEXCHROME	3.41E+01 +- 0.0E+00 (2s)		mg/kg	N/A	85.40%	-0.1	8.00E-02
MATRIX SPI	EHM371AE	HEXCHROME	6.68E+02 +- 0.0E+00 (2s)		mg/kg	N/A	98.27%	0.0	8.00E-02
BLANK QC	EHW4A1AA	HEXCHROME	2.00E-03 +- 0.0E+00 (2s)	U	mg/L	N/A			2.00E-03
LCS	EHW4A1AC	HEXCHROME	9.42E-01 +- 0.0E+00 (2s)		mg/L	N/A	94.20%	-0.1	2.00E-03

Number of Results: 4

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name: STL Richland
SDG: W03574
Collection Date: 8/1/5201 2:10:00 AM
Lot-Sample No.: J1H080240-
Report No. : 14332
Received Date: 8/8/01 12:00:00 PM
Client Sample ID: B12C63-A
COC No. : B01-058
Matrix: SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Anaty Method, Primary Detector
Batch: 1225482	**Work Order:** EHM4L1AA			**Report DB ID:** 9EHM4L10								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.693	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

80000

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name: STL Richland
SDG: W03574
Collection Date: 8/2/01 6:20:00 AM
Lot-Sample No.: J1H080240-
Report No. : 14332
Received Date: 8/8/01 12:00:00 PM
Client Sample ID: B12C64-A
COC No. : B01-058
Matrix: SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	Work Order: EHM4C1AA			Report DB ID: 9EHM4C10								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.601	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

600000

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name: STL Richland
SDG: W03574
Collection Date: 8/5/01 11:10:00 PM
Lot-Sample No.: J1H080240-
Report No. : 14332
Received Date: 8/8/01 12:00:00 PM
Client Sample ID: B12C88-A
COC No. : B01-058
Matrix: SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHM351AA			**Report DB ID:** 9EHM3510								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.601	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

000010

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name:	STL Richland	**SDG:**	W03574	**Collection Date:**	8/3/01 1:20:00 AM
Lot-Sample No.:	J1H080240-	**Report No. :**	14332	**Received Date:**	8/8/01 12:00:00 PM
Client Sample ID:	B12DB8-A	**COC No. :**	B01-058	**Matrix:**	SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	Work Order: EHM4E1AA			Report DB ID: 9EHM4E10								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.575	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

000011

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name:	STL Richland	**SDG:**	W03574	**Collection Date:**	8/3/01 5:08:00 AM
Lot-Sample No.:	J1H080240-	**Report No. :**	14332	**Received Date:**	8/8/01 12:00:00 PM
Client Sample ID:	B12DB9-A	**COC No. :**	B01-058	**Matrix:**	SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHM371AA			**Report DB ID:** 9EHM3710								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.602	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

000012

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 19-Sep-01

SAMPLE RESULTS

Lab Name:	STL Richland	**SDG:**	W03574	**Collection Date:**	8/5/01 11:10:00 PM
Lot-Sample No.:	J1H080240-	**Report No. :**	14332	**Received Date:**	8/8/01 12:00:00 PM
Client Sample ID:	B12DC0-A	**COC No. :**	B01-058	**Matrix:**	SOIL SOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHM4J1AA			**Report DB ID:** 9EHM4J10								
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	*(1.)*	9/6/01		2.594	EPA7196
							3.00E-02	*N/A*			G	

Number of Results: 1

Comments:

000013

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 19-Sep-01

DUPLICATE RESULTS

Lab Name: STL Richland **SDG:** W03574 **Collection Date:** 8/3/01 5:08:00 AM

Lot-Sample No.: J1H080240- **Report No. :** 14332 **Received Date:** 8/8/01 12:00:00 PM

Client Sample ID: B12DB9 DUP-A **COC No. :** B01-058 **Matrix:** SOIL SOLID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHM371AF			**Report DB ID:** EHM371FR		**Orig Sa DB ID:** 9EHM3710						
HEXCHROME	8.00E-02	U		0.0E+00	8.00E-02	mg/kg	N/A	(1.)	9/6/01		2.602	EPA7196
	8.00E-02	RPD	0.0			3.00E-02		N/A			G	

Number of Results: 1

Comments:

00001

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 19-Sep-01

BLANK RESULTS

Lab Name: STL Richland **SDG:** W03574

Lot-Sample No.: J1H130000- **Report No. :** 14332 **Matrix:** SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHW4A1AA			**Report DB ID:** EHW4A1AB								
HEXCHROME	2.00E-03	U		0.0E+00	2.00E-03	mg/L	N/A	1. N/A	9/6/01		100.0 ML	EPA7196

Number of Results: 1

Comments:

000015

STL Richland

rptSTLRchBlank V3.77 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 19-Sep-01

LCS RESULTS

Lab Name: STL Richland **SDG:** W03574

Lot-Sample No.: J1H130000- **Report No. :** 14332 **Matrix:** SOIL

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MD	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	**Work Order:** EHW4A1AC			**Report DB ID:** EHW4A1CS									
HEXCHROME	9.42E-01			0.0E+00	2.00E-03	mg/L	N/A	1.00E+00		94.20%	9/6/01	100.0	EPA7196
							Rec Limits:	85.	115.	-0.1		ML	

Number of Results: 1

Comments:

000016

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

FORM II

Date: 19-Sep-01

MATRIX SPIKE RESULTS

Lab Name: STL Richland **SDG:** W03574

Lot-Sample No.: J1H080240- **Report No. :** 14332 **Matrix:** SOIL SOLID

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MD	Rpt Unit, CRDL	Yield	Rec-overy	Exp-ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1225482	Work Order: EHM371AD			Report DB ID: EHM371DW			Orig Sa DB ID: 9EHM3710						
HEXCHROME	3.41E+01			0.0E+00	8.00E-02	mg/kg	N/A	85.40%	3.99E+01		9/6/01	2.602	EPA7196
	8.00E-02	RPD	2.0									G	
Batch: 1225482	Work Order: EHM371AE			Report DB ID: EHM371EW			Orig Sa DB ID: 9EHM3710						
HEXCHROME	6.68E+02			0.0E+00	8.00E-02	mg/kg	N/A	98.27%	6.80E+02		9/6/01	2.602	EPA7196
	8.00E-02	RPD	2.0									G	

Number of Results: 2

Comments:

000017

STL Richland
rptSTLRchMs V3.77 A97

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

Quanterra

Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): EHW: 35, 37, 4C, 4E, 4J, 4L BATCH # 1225482				
Lab Sample Numbers or SDG: W03574 LOT # JIH80240				
Method/Test/Parameter: CR+6 IN SOIL RICHWC 5005 R.4				
Review Item	**Yes (✓)**	**No (✓)**	**N/A (✓)**	**2nd Level Review (✓)**
A. Initial Calibration				
1. Performed at required frequency wih required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank(ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?	✓			✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?			✓	✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

000018

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
E. Other 1. Are all nonconformances included and noted?			✓	✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response:

C1) PbCrO4 SPIKE OF EHM371AA REQUIRED X 20 DILUTION.

Analyst: Martha Lab Date: 9/13/01

Second-Level Review: Roxie Ross Date: 9/14/01

Form No. CG-191, Rev. 0, 7/95

CHAIN OF CUSTODY

ex-2 10 30

3/22/2018 REV.1

Bechtel Hanford Inc. — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-058-165 | Page 1 of 1

Collector Thomas G./Watson D.	**Company Contact** Todd, M.E.	**Telephone No.** (509) 372-9631	**Project Coordinator** TRENT, SJ
Project Designation 200-TW-1 & 2 - Soil Sampling	**Sampling Location** B-38/200 E		**SAF No.** B01-058
Ice Chest No. SM1-587	**Field Logbook No.** EL-1518-1	**COA** B20TW2674C	**Method of Shipment** Fed EX
Shipped To DSA 7/18/01 SEVERN TRENT TMA/RECRA ~~EARTHVILLE~~ ST LOUIS	**Offsite Property No.** RSR 106567		**Bill of Lading/Air Bill No.** NA

Price Code 8N **Data Turnaround** 45 Days **Air Quality** ☐

POSSIBLE SAMPLE HAZARDS/REMARKS Maximum Dose on bottle .6 MR B/.5 MR

Samples stored in Ref.# 3A at the 3728 Shipping Facility on 8/6/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SDG W03574

1 x 125 glass

SAMPLE ANALYSIS J1H080240

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	120mL	60mL	60mL	250mL	60mL	250mL	250mL			
	See item (1) in Special Instructions.	Mercury - 7470 (CV)	Chromium Hex - 7196	See item (2) in Special Instructions.	VOA - 8260A (TCL)	See item (3) in Special Instructions. GST 8/5/01	See item (4) in Special Instructions. DSA 7/18/01			TIER TO
Sample No.	Matrix *	Sample Date	Sample Time							
B12C88-AEHM35	SOIL	8/5/01	2310	X	X	X	X			B12B V0

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	8/6/01 0630	Ref 3A	8/6/01 0630
Ref 3A	8.8.01 0600	R Thorp	8.8.01 0600
R Thorp	8.8.01 0600	FEDEX	8.8.01 RT
R Thorp	8.8.01 1100	Doug Bowers	8-8-01 1100
Doug Bowers/Doug Bowers	8-8-01 12:00	Audrey Klemesrud 1000 CPN	8-8-01 12:00

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Cadmium, Chromium, Copper, Nickel, Silver); ICP Metals - 6010A (Add-on) (Lead)

(2) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Ammonia - 350.3; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045

(3) Semi-VOA - 8270A (Add On) (Tributyl phosphate); TPH Diesel Range - WTPH-D GST 8/5/01

(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium DSA 7/18/01

RT 8.7.01

Matrix *: S=Soil, SE=Sediment, SO=Solid, SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc. — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3222018 REV 1

B01-058-204 | Page 1 of 1

Collector: Thomas G./Watson D. / Nielson	Company Contact: Todd, M.E.	Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E — Depth 29-31.5	SAF No.: B01-058	Air Quality ☐
Ice Chest No.: ~~S0159748~~ RT989 SM1567	Field Logbook No.: EL-1518	COA: B20TW2674C	Method of Shipment: ~~Fed EX~~ RUN 8/3/01 Hand deliver govt. vehicle
Shipped To: Sac 7-19-01 ST. LOUIS — Severn Trent Incorporated ~~Richland~~ RTB 8.7.01	Offsite Property No.: RSR 106567		Bill of Lading/Air Bill No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
Maximum Dose 1.3B / 1.6 R on bottles

Samples stored in Ref.# 31 at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL			
	Chromium Hex - 7196	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.	Activity Scan			

2 x 120 glass

Sac 7-19-01

T to O

Sample No.	Matrix *	Sample Date	Sample Time									
312DB9-~~A~~EHM37	SOIL	8/3/01	0508	X					X	X		B12 B79

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas / Greg Thomas	8/3/01 0845	Ref 3C	8/3/01 0800
Ref 3C	8.8.01 0600	R Thomas	8.8.01 0600
R Thomas	8.8.01 0600	FED EX	8.8.01
R Thomas RT	8.8.01 1150	Doug Bowers	8-8-01 1100
Doug Bowers / Doug Bowers	8-8-01 12:00	A Klimond	8-8-01 12:00

SPECIAL INSTRUCTIONS

~~(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen-in Nitrate, Nitrogen-in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045~~
~~(2) Semi-VOA - 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D~~
~~(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc)~~
~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~

RT 8.7.01 Sac 7-19-01

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

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

BHI-EE-011 (10/99)

2/22/2018 REV.1

Bechtel Hanford Inc. — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-058-141 | Page 1 of 1

Collector Thomas G./Watson D. / Nielson	**Company Contact** Todd, M.E.	**Telephone No.** (509) 372-9631	**Project Coordinator** TRENT, SJ
Project Designation 200-TW-1 & 2 - Soil Sampling	**Sampling Location** B-38/200 E Depth 18 - 20.5		**SAF No.** B01-058
Ice Chest No. SA0472 RT 8.01 SM1587	**Field Logbook No.** EL-1518	**COA** B20TW2674C	**Method of Shipment** ~~Fed EX~~ RUN 7/31/01 Hand deliver - Govt. vehicle
Shipped To Severn Trent Laboratories DSA 7/18/01 ST Louis	**Offsite Property No.** RSR 106567		**Bill of Lading/Air Bill No.** NA

Price Code 8N **Data Turnaround** 45 Days **Air Quality** ☐

POSSIBLE SAMPLE HAZARDS/REMARKS
Maximum Dose 3.0 MR β/3.5 MR γ on bottles

Samples stored in Ref.# 3B at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS 2 x 120 glass

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None RT 8/7/01	None
Type of Container	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL
	Chromium Hex - 7196	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions. DSA 7/18/01	See item (4) in Special Instructions.	Activity Scan

Sample No.	Matrix *	Sample Date	Sample Time									
B12C64 ~~A~~ EHM4C	SOIL	8/2/01	0620	X					X	X		B12BT3

Tie TO

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	8/3/01 0815	Ref 3B	8/3/01 0815
Ref 3B	8.8.01 0620	R-1	8.8.01 0620
K.L. Peterson	8.8.01 1100	Doug Bowers	8-8-01 11:00
Doug Bowers Doug Bowers	8-8-01 12:00	A Klumend ~~ext~~ 10,000 cpm	8-8-01 12:00

SPECIAL INSTRUCTIONS

~~(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010, TOC - 9060; pH (Soil) - 9045~~
~~(2) Semi-VOA - 8270A (Add On) (Tributyl phosphate); TPH Diesel Range - WTPH-D~~
~~(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc)~~
~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium, Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr, Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~

DSA 7/18/01 RT 8.7.01

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

3/22/2018

B01-058-203 | Page 1 of 1 | REV.1

Collector: Thomas G./Watson D. / Nielson	Company Contact: Todd, M.E.	Telephone No.: (509) 372-9631	Project Coordinator: TRENT, SJ
Project Designation: 200-TW-1 & 2 - Soil Sampling	Sampling Location: B-38/200 E Depth 22.5 - 25	SAF No.: B01-058	Price Code: 8N; Air Quality ☐
Ice Chest No.: ~~SA 0470~~ RT 8.8.01 SM1587	Field Logbook No.: EL-1518	COA: B20TW2674C	Method of Shipment: ~~Fed EX~~ RN 8/2/01 Hand deliver. Govt Vehicle
Shipped To: Severn Trent Incorporated ~~Pretreated~~ Sal 7-19-01 ST LOUIS	Offsite Property No.: RSR 106567		Bill of Lading/Air Bill No.: N/A

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose 3.0 MR B & 2.0 MR γ on bottle

Samples stored in Ref.# 3C at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS

2 x 120 glass

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	~~None~~ RT 8.8.01	None			
Type of Container	aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	60mL	250mL	60mL	~~250mL~~ RT 8.7.01	120mL	250mL	60mL			
	Chromium Hex - 7196	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions.	See item (3) in Special Instructions.	See item (4) in Special Instructions.	Activity Scan			

Sample No.	Matrix *	Sample Date	Sample Time									Tie To
B12DB8 ~~A~~ EHM4E	SOIL	8/03/01	0120	X					X	X		B12BT8

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas Greg Thomas	0800 08/3/01	Ref 3C	8/3/01 0800
Ref 3C	8.8.01 0600	R Thorer	8.8.01 0600
R Thorer	8.8.01 0600	FED EX	RT 8.8.01
R Thorer	8.8.01 1100	Doug Bowers	8-8-01 1100
Doug Bowers Doug Bowers	8-8-01 12:00	4000 Andrew Klemens	8-8-01 12:00

SPECIAL INSTRUCTIONS

~~(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045~~ Sal 7-19-01

~~(2) Semi-VOA - 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D~~

~~(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc)~~

~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~ RT 8.7.01

Matrix *

SS=Soil
SE=Sediment
SO=Solid
SI=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

BHI-EE-011 (10/99)

3/22/2018 REV.1

Bechtel Hanford Inc. — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-058-205 | Page 1 of 1

Collector Thomas G./Watson D. / Nielson	**Company Contact** Todd, M.E.	**Telephone No.** (509) 372-9631	**Project Coordinator** TRENT, SJ
Project Designation 200-TW-1 & 2 - Soil Sampling	**Sampling Location** B-38/200 E		**SAF No.** B01-058
Ice Chest No. SM1 587	**Field Logbook No.** EL-1518 ~ 1	**COA** B20TW2674C	**Method of Shipment** ~~Fed EX~~ RN 8/3/01 Govt. Vehicle
Shipped To Sal 7-19-01 RT 8.7.01 Severn Trent Incorporated ~~Richland~~ ST. Louis	**Offsite Property No.** RSR 106567		**Bill of Lading/Air Bill No.** NA

Price Code 8N **Data Turnaround** 45 Days

Air Quality ☐

POSSIBLE SAMPLE HAZARDS/REMARKS

Maximum Dose .6 MR B & Y on bottle

Samples stored in Ref.# 3A at the 3728 Shipping Facility on 8/6/01. Collector not available to relinquish samples on 8/8/01 for shipment. RT 8.8.01

SAMPLE ANALYSIS 2 x 120 glass

Sample No.	Matrix *	Sample Date	Sample Time	Chromium Hex - 7196	See item (1) in Special Instructions	VOA - 8260A (TCL)	See item (2) in Special Instructions	See item (3) in Special Instructions	See item (4) in Special Instructions	Activity Scan			TIC TO
Preservation				Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None			
Type of Container				aG	aG	aG	aG	aG	aG	aG			
No. of Container(s)				1	1	1	1	1		1			
Volume				60mL	250mL	60mL	250mL	120mL	250mL	60mL			
B12DC0-AEHM4J	SOIL	8-5-01	2310	X					X	X			B12BV0

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	8-6-01 0630	Ref 39	8/6/01 0630
R. Thorp 3A	8.8.01 0600	R. Thorp	8.8.01 0600
R. Thorp	8.8.01 1100	Doug Bowers	8-8-01/1100
Doug Bowers/Doug Bowers	8-8-01/12:00	Audrey Klemm 1000 cpm	8-8-01 1200

SPECIAL INSTRUCTIONS

~~(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045~~ SAS 7-19-01
~~(2) Semi-VOA - 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D~~
~~(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc)~~
~~(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232), Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 - Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium~~

RT 8.7.01

Matrix *
S=Soil
SE=Sediment
O=Solid
SI=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

BHI-EE-011 (10/99)

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | **B01-058-140** | Page 1 of 1

Collector Thomas G./Watson D./Nielson	**Company Contact** Todd, M.E.	**Telephone No.** (509) 372-9631	**Project Coordinator** TRENT, SJ
Project Designation 200-TW-1 & 2 - Soil Sampling	**Sampling Location** B-38/200 E Depth 14.5 - 15.5		**SAF No.** B01-058
Price Code 8N	**Data Turnaround** 45 Days	**Air Quality** ☐	
Ice Chest No. SM1-587	**Field Logbook No.** EL-1518	**COA** B20TW2674C	**Method of Shipment** ~~Fed EX~~ RUN 7/31/01 Hand delivered - Govt. Vehicle
Shipped To DSA 7/18/01 ST LOUIS Severn Trent Incorporated ~~RICHLAND~~ RTB.7.0	**Offsite Property No.** RSR 106567		**Bill of Lading/Air Bill No.** N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
3MR B on outside Jar
2MR γ on outside Jar
No Alpha
AT 8/02/01
Direct 110K cpm on outside Jar

Samples stored in Ref.# 38 at the 3728 Shipping Facility on 8/3/01. Collector not available to relinquish samples on 8/8/01 for shipment. PT 8.8.01/SIS

(2) x 120 g/aa

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None PT 7.30.01	None
Type of Container	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1
Volume	60mL	250mL	60mL	250mL	120mL	250mL	60mL
	Chromium Hex - 7196	See item (1) in Special Instructions.	VOA - 8260A (TCL)	See item (2) in Special Instructions. RUN 7/31/01	See item (3) in Special Instructions.	See item (4) in Special Instructions.	Activity Scan

Sample No.	Matrix*	Sample Date	Sample Time								
B12C63-A EHM4L	SOIL	8/2/01	0210	X					X	X			B1RBT2

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas/Greg Thomas	08/10 8/2/01	TW1 & 2 Site Trailer Ref	08/10 8/2/01
TW1 & 2 Site Trailer Ref	0320 8/3/01	GT	8/3/01 0320
Greg Thomas/Greg Thomas	0815 8/3/01	Greg Thomas/Greg Thomas	8/3/01 0815
Greg Thomas/Greg Thomas	8/3/01	Ref 38	8/3/01
Ref 38	8-8-01 0600	PThorp	8.8.01 0600
PThorp	8.8.01	RTher	8.8.01
RTher	8.8.01 0600	RTher	8.8.01 0600
RTher	8.8.01	Doug Bowers	8-8-01/1100
Doug Bowers	8-8-01/1100		

SPECIAL INSTRUCTIONS

~~(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphate, Sulfate); Ammonia - 350.1; NO2/NO3 - 353.1; Total Cyanide - 9010; TOC - 9060; pH (Soil) - 9045~~
~~(2) Semi-VOA - 8270A (Add-On) (Tributyl phosphate); TPH-Diesel Range - WTPH-D~~
~~(3) ICP Metals - 6010TR (Client List) (Aluminum, Bismuth, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc).~~
(4) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Radium-226, Radium-228); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241; Carbon-14; Neptunium-237; Nickel-63; Strontium-89,90 -- Total Sr; Technetium-99; Total Uranium; Tritium - H3; Isotopic Uranium

DSA 7/18/01

Relinquished By Doug Bowers 8-8-01/1:00 Received by 4000 cpm 3:00 Audrey Klemond 8-8-01

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

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

BHI-EE-011 (10/99)

SEVERN TRENT SERVICES

STL Richland
Sample Check-in List

Date/Time Received: 8-8-01 12:00

Client: BHI SDG #: W03574 NA [ ] -140 -205

Work Order Number: JH080240 SAF #: B01-058 NA [ ] -203 -141

Shipping Container ID: SML-587 Chain Of Custody #: B01-058-165 -204

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? Yes [✓] No [ ]
4. Cooler temperature: 4°C NA [ ]
5. *Vermiculite/packing materials is* NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 11
7. Sample holding times exceeded? NA [ ] Yes [ ] No [ ]
8. Samples have:
   - [X] tape
   - [X] custody seals
   - [ ] hazard labels
   - [X] appropriate samples labels
9. Samples are:
   - [X] in good condition
   - [ ] broken
   - [ ] leaking
   - [ ] have air bubbles

   (Only for samples requiring head space)
10. Sample pH taken? NA [X] pH<2 [ ] pH>2 [ ]
11. Were any anomalies identified in sample receipt? Yes [ ] No [X]
12. Description of anomalies (include sample numbers): _____

Sample Custodian: Audrey Klemesrud Date: 8-8-01

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 6/01, Rev. 3

000027

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9572 **Sample Date & Time** 8/3/01 2310

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 10:52:5

Sample ID: B12BV0

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.7E+01	+/-	7.5E+00	8.1E+00
Co-60	<	2.4E+00			2.4E+00
Cs-137		2.1E+04	+/-	4.2E+03	9.5E+00
Eu-152	<	3.4E+01			3.4E+01
Eu-154	<	8.1E+00			8.1E+00
Eu-155	<	1.9E+01			1.9E+01
Tl-208		2.5E+01	+/-	1.5E+01	2.3E+01
Pb-212	<	1.4E+02			1.4E+02
Bi-214	<	2.1E+01			2.1E+01
Pb-214	<	2.5E+01			2.5E+01
Ac-228	<	1.3E+01			1.3E+01
Pa-234	<	1.6E+01			1.6E+01
Th-234	<	9.1E+01			9.1E+01
U-235		7.8E+01	+/-	3.0E+01	4.8E+01
Am-241	<	1.2E+01			1.2E+01

Sr^{90} 2.5E+04

Total GEA (pCi/g)	2.1E+04	+/-	4.2E+03

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion.
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G L. Hastings 8/6/01

Report To	Fax
CS Cearlock	372-9292
SJ Treat	372-9292
Joan Kessner	372-9487

Report Printed: Monday, August 06, 2001

000028

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9571 **Sample Date & Time** 8/3/01 0500

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 9:22:06

Sample ID: B12BT9

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	1.7E+03			1.7E+03
Co-60		6.1E+02	+/-	3.1E+02	4.5E+02
Cs-137		1.2E+06	+/-	2.0E+05	5.3E+03
Eu-152	<	4.0E+03			4.0E+03
Eu-154	<	1.5E+03			1.5E+03
Eu-155	<	2.2E+03			2.2E+03
Tl-208		2.7E+03	+/-	2.7E+03	6.5E+01
Pb-212	<	1.6E+04			1.6E+04
Pb-214	<	2.9E+03			2.9E+03
Bi-214	<	3.7E+03			3.7E+03
Ac-228	<	2.1E+03			2.1E+03
Pa-234	<	1.8E+03			1.8E+03
Th-234	<	4.3E+03			4.3E+03
U-235	<	5.4E+03			5.4E+03
Am-241	<	1.3E+03			1.3E+03

QUALITATIVE ONLY
DUE TO HIGH DEAD TIME
COUNTED SAMPLE 1 1/8" ABOVE DETECTOR
GH

Sr-90 1.5E+06

Total GEA (pCi/g) EA	1.2E+06	+/-	2.1E+05	

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
 # No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 8/6/01

Report Printed: Monday, August 06, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Treat	372-9287
Joan Kessner	372-9487

000029

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9577 **Sample Date & Time** 8/3/01 0120

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 12:29:0

Sample ID: B12BT8

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	1.6E+02			1.6E+02
K-40	<	5.2E+03			5.2E+03
Co-60	<	1.4E+03			1.4E+03
Cs-137		9.8E+05	+/-	3.0E+05	3.2E+03
Eu-152	<	9.5E+03			9.5E+03
Eu-154	<	4.1E+03			4.1E+03
Eu-155	<	5.2E+03			5.2E+03
Tl-208	<	7.1E+03			7.1E+03
Pb-212	<	3.8E+04			3.8E+04
Bi-214	<	1.0E+04			1.0E+04
Pb-214	<	6.9E+03			6.9E+03
Ra-226	<	5.7E+04			5.7E+04
Ac-228	<	6.0E+03			6.0E+03
Pa-234	<	4.4E+03			4.4E+03
Th-234	<	2.4E+04			2.4E+04
U-235	<	1.3E+04			1.3E+04
Am-241	<	3.2E+03			3.2E+03

QUALITATIVE ONLY DUE TO SAMPLE COUNTED 1½" ABOVE DETECTOR DUE TO HIGH DEAD TIME. GH

Sr-90 10E+05

Total GEA (pCi/g) EA	9.8E+05	+/-	3.0E+05	

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	3.4E+03	+/-	4.2E+01	1.2E+03	
Gross Beta	1.0E+05	+/-	8.2E+02		5.1E+04

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst K. L. Hastings 8/6/01

Report Printed: Monday, August 06, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9292
Juan Kessner	372-9487

000030

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9576 Sample Date & Time 8/2/01 0620

Project ID: 200E B-38 SAF Number: B01-058 Date Analyzed 8/6/01 12:05:3

Sample ID: B12BT3

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	3.6E+03			3.6E+03
Co-60	<	9.9E+02			9.9E+02
Cs-137		1.4E+06	+/-	2.4E+05	9.4E+03
Eu-152	<	8.5E+03			8.5E+03
Eu-154	<	2.9E+03			2.9E+03
Eu-155	<	5.0E+03			5.0E+03
Tl-208	<	6.4E+03			6.4E+03
Pb-212	<	3.4E+04			3.4E+04
Pb-214	<	6.1E+03			6.1E+03
Bi-214	<	7.6E+03			7.6E+03
Ra-226	<	5.7E+04			5.7E+04
Ac-228	<	4.6E+03			4.6E+03
Th-234	<	2.3E+04			2.3E+04
Pa-234	<	4.2E+03			4.2E+03
U-235	<	1.3E+04			1.3E+04
Am-241	<	2.9E+03			2.9E+03

QUALITATIVE ONLY DUE TO SAMPLE COUNTED 2 1/4" ABOVE DETECTOR DUE TO HIGH DEAD TIME

TIE TO B12C64A

Sr-90 1.5E+06

Total GEA (pCi/g) EA	1.4E+06	+/-	2.4E+05	

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	3.7E+03	+/-	4.6E+01	1.3E+03	5.3E+04
Gross Beta	1.1E+05	+/-	8.6E+02		

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238daa is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232daa is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 8/6/01

Report Printed: Monday, August 06, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	[illegible]
Joan Kessner	372-9487

000031

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9559 **Sample Date & Time** 8/2/01 0210

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/2/01 11:56:3

Sample ID: B12BT2

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	5.6E+03			5.6E+03
Co-60	<	1.5E+03			1.5E+03
Cs-137		8.5E+05	+/-	1.4E+05	1.3E+04
Eu-152	<	1.1E+04			1.1E+04
Eu-154	<	4.3E+03			4.3E+03
Eu-155	<	6.5E+03			6.5E+03
Tl-208	<	8.7E+03			8.7E+03
Pb-212	<	4.5E+04			4.5E+04
Bi-214	<	1.1E+04			1.1E+04
Pb-214	<	8.2E+03			8.2E+03
Ra-226	<	7.5E+04			7.5E+04
Ac-228	<	6.5E+03			6.5E+03
Pa-234	<	5.5E+03			5.5E+03
Th-234	<	3.0E+04			3.0E+04
U-235	<	1.7E+04			1.7E+04
Am-241	<	3.8E+03			3.8E+03

809

QUALITATIVE ONLY DUE TO HIGH DEAD TIME. SAMPLE COUNTED 2.5" ABOVE DETECTOR

GH 8/4/01

Sr-90 = 90E+05

Total GEA (pCi/g) EA	8.5E+05	+/-	1.4E+05

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

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The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorption
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 8/2/01

Report Printed: Thursday, August 02, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9292
Joan Kessner	372-9292

000032

Radcalc for Windows 2.11 Date: 08-08-01 10:22

3/22/2018 REV.1

RSR 106567

Performed By: RIKKI THOREN

Checked By: RIKKI THOREN

File: RADFILE

========== Input Information ==========

Source from input:

Radionuclide:	Curies:	Becquerels:	Grams:
K-40	6.04E-011	2.23E+000	8.63E-006
Co-60	5.80E-010	2.15E+001	5.13E-013
Sr-90	7.55E-006	2.79E+005	5.35E-008
Cs-137	6.94E-006	2.57E+005	7.98E-008
U-235	2.77E-010	1.02E+001	1.26E-004
Total Activity:	1.45E-005	5.36E+005	
Total Minus Daughters:	1.45E-005	5.36E+005	

Waste Form: Normal
Physical Form: Solid
Container Type: 30 Gallon Drum

Package Void Volume: 0.000 cc
Waste Volume: 0.000 cc
Waste Mass: 741. g
Waste Void Volume: 0.000 cc

Date to begin source decay: 10:00 Jul. 9, 2001
Date container sealed: 10:00 Aug. 8, 2001
Date container received: 10:00 Aug. 8, 2001
Days to decay source before seal time: 30.00 days
Days container is sealed: 0.00 days

Entered G Values:

G Alpha	G Beta	G Gamma
0	0	0

Comments:
SEV. TRENT RICHLAND
SOLID

========== Calculated Results ==========

DECAY HEAT:
Heat Generated at seal time: 8.39E-008 Watts

TRANSPORTATION:
Note: Transportation classifications assume three significant figures.
Calculations are made at user-specified decay time.

Radioactive: Yes (3.85E+001 nCi/g)
Effective A2 for Mixture: 4.38 Ci
Type Determination: A (from unity fraction 3.3040E-006)
Limited Quantity: Yes

LSA-I Determination: *Yes (from LSA-I unity fraction 0.0044588)
LSA-II Determination: *Yes (from LSA-II unity fraction 4.4588E-005)
LSA-III Determination: *Yes (from LSA-III unity fraction 2.2294E-006)
LSA-III also requires a leach test.
*Per 49CFR173.403. The user must check to be sure that all other conditions for LSA are met as found in 49CFR173.403 and 49CFR173.427.

HRC Quantity Determination: No

Fissile Quantity: 0.000126 g
Fissile Excepted: Yes
15g fissile radionuclides or less per 49CFR173.453(a)

LSA Container Category: III (Container Category per Reg Guide 7.11)

TRU Waste: No (Transuranic Waste per DOE Order 5820.2a)

3/22/2018 REV.1

ACCUMULATED ACTIVITY FOR ENTIRE PACKAGE

HAVE	Ci/pkg	TBq/pkg
K-40	6.04E-11	2.24E-12
Co-60	5.80E-10	2.14E-11
Cs-137	6.94E-06	2.57E-07
Tl-208	2.65E-09	9.82E-11
U-235	2.77E-10	1.03E-11
Sr-90	7.55E-06	2.79E-07
Totals:	1.45E-05	5.36E-07

.54 on RSR

MBq = [illegible]

LIMITED QUANTITY SHIPMENT (TBq/Pkg)

HAVE	TBq/pkg	A2 VALUES	LTD.QTY A2(10-3) solid normal form	Derived Value Have/A2 Values	
K-40	2.24E-12	0.6	6.00E-04	3.73E-09	0.00
Co-60	2.14E-11	0.4	4.00E-04	5.36E-08	0.00
Cs-137	2.57E-07	0.5	5.00E-04	5.13E-04	0.00
Tl-208	9.82E-11	daughter	daughter	daughter	daughter
U-235	1.03E-11	unlimited	unlimited	unlimited	unlimited
Sr-90	2.79E-07	0.10	1.00E-04	2.79E-03	0.00
			UNITY TOTAL (TBq):	3.31E-03	0.00

000035

	A	B	C	D	E	F	G	H	I	J
1	RSR:	10657	SEVERN TRENCH RICHLAND		3/22/2018					REV.1
2	SAF#:	B01-058		SAMPLE ACTIVITY (HAVE						
3	MEDIA:	SOLID								
4										
5	SAMPLE#:	B12BT9								
6	SAMPLE VOLUME:		80	grams						
7	PACKAGE MASS:		76	grams						
8	HAVE	Pci/sample	Pci/gram	Ci/gram	Ci/pkg	TBq/pkg				
10	Co-60	6.10E+02	7.63E+00	7.63E-12	5.80E-10	2.14E-11				
11	Cs-137	1.20E+06	1.50E+04	1.50E-08	1.14E-06	4.22E-08				
15	Tl-208	2.70E+03	3.38E+01	3.38E-11	2.57E-09	9.49E-11				
27	Sr-90	1.50E+06	1.88E+04	1.88E-08	1.43E-06	5.27E-08				
28										
29	TOTALS:	2.70E+06	3.38E+04	3.38E-08	2.57E-06	9.50E-08				
30										
31	SAMPLE #:	B12BT8								
32	SAMPLE VOLUME:		80	grams						
33	PACKAGE MASS:		134	grams						
34	HAVE	Pci/sample	Pci/gram	Ci/gram	Ci/pkg	TBq/pkg				
37	Cs-137	9.80E+05	1.23E+04	1.23E-08	1.64E-06	6.07E-08				
53	Sr-90	1.00E+06	1.25E+04	1.25E-08	1.68E-06	6.20E-08				
54										
55	TOTALS:	1.98E+06	2.48E+04	2.48E-08	3.32E-06	1.23E-07				
56										
57	SAMPLE#:	B12BV0								
58	SAMPLE VOLUME:		65	grams						
59	PACKAGE MASS:		231	grams						
60	HAVE	Pci/sample	Pci/gram	Ci/gram	Ci/pkg	TBq/pkg				
61	K-40	1.70E+01	2.62E-01	2.62E-13	6.04E-11	2.24E-12				
63	Cs-137	2.10E+04	3.23E+02	3.23E-10	7.46E-08	2.76E-09				
67	Tl-208	2.50E+01	3.85E-01	3.85E-13	8.88E-11	3.29E-12				
75	U-235	7.80E+01	1.20E+00	1.20E-12	2.77E-10	1.03E-11				
79	Sr-90	2.50E+04	3.85E+02	3.85E-10	8.88E-08	3.29E-09				
80										
81	TOTALS:	4.61E+04	7.10E+02	7.10E-10	1.64E-07	6.06E-09				
82										
83	SAMPLE #:	B12BT3								
84	SAMPLE VOLUME:		80	grams						
85	PACKAGE MASS:		170	grams						
86	HAVE	Pci/sample	Pci/gram	Ci/gram	Ci/pkg	TBq/pkg				
89	Cs-137	1.40E+06	1.75E+04	1.75E-08	2.98E-06	1.10E-07				
105	Sr-90	1.50E+06	1.88E+04	1.88E-08	3.19E-06	1.18E-07				
106										
107	TOTALS:	2.90E+06	3.63E+04	3.63E-08	6.16E-06	2.28E-07				
108										
109	SAMPLE #:	B12BT2								
110	SAMPLE VOLUME:		100	grams						
111	PACKAGE MASS:		130	grams						
112	HAVE	Pci/sample	Pci/gram	Ci/gram	Ci/pkg	TBq/pkg				
115	Cs-137	8.50E+05	8.50E+03	8.50E-09	1.11E-06	4.09E-08				
131	Sr-90	9.00E+05	9.00E+03	9.00E-09	1.17E-06	4.33E-08				
132										
133	TOTALS:	1.75E+06	1.75E+04	1.75E-08	2.28E-06	8.42E-08				
134										
135										
136										
137										
138										
139										

POTENTIAL HAZARDS

HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Undamaged packages are safe. Contents of damaged packages may cause higher external radiation exposure, or both external and internal radiation exposure if contents are released.
- Type A packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life endangering amounts. Partial releases might be expected if "Type A" packages are damaged in moderately severe accidents.
- Type B packages, and the rarely occurring Type C packages, (large and small, usually metal) contain the most hazardous amounts. They can be identified by package markings or by shipping papers. Life threatening conditions may exist only if contents are released or package shielding fails. Because of design, evaluation, and testing of packages, these conditions would be expected only for accidents of utmost severity.
- The rarely occurring "Special Arrangement" shipments may be of Type A, Type B or Type C packages. Package type will be marked on packages, and shipment details will be on shipping papers.
- Radioactive White-I labels indicate radiation levels outside single, isolated, undamaged packages are very low (less than 0.005 mSv/h (0.5 mrem/h)).
- Radioactive Yellow-II and Yellow-III labeled packages have higher radiation levels. The transport index (TI) on the label identifies the maximum radiation level in mrem/h one meter from a single, isolated, undamaged package.
- Some radioactive materials cannot be detected by commonly available instruments.
- Water from cargo fire control may cause pollution.

FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Radioactivity does not change flammability or other properties of materials.
- Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes.

PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions.
  - Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 100 meters (330 feet).

Fire

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

EMERGENCY RESPONSE

FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

Small Fires

- Dry chemical, CO_2, water spray or regular foam.

Large Fires

- Water spray, fog (flooding amounts).
- Dike fire-control water for later disposal.

SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Damp surfaces on undamaged or slightly damaged packages are seldom an indication of packaging failure. Most packaging for liquid content have inner containers and/or inner absorbent materials.
- Cover liquid spill with sand, earth or other noncombustible absorbent material.

FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9572 **Sample Date & Time** 8/3/01 2310

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 10:52:5

Sample ID: B12BV0

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.7E+01	+/-	7.5E+00	8.1E+00
Co-60	<	2.4E+00			2.4E+00
Cs-137		2.1E+04	+/-	4.2E+03	9.5E+00
Eu-152	<	3.4E+01			3.4E+01
Eu-154	<	8.1E+00			8.1E+00
Eu-155	<	1.9E+01			1.9E+01
Tl-208		2.5E+01	+/-	1.5E+01	2.3E+01
Pb-212	<	1.4E+02			1.4E+02
Bi-214	<	2.1E+01			2.1E+01
Pb-214	<	2.5E+01			2.5E+01
Ac-228	<	1.3E+01			1.3E+01
Pa-234	<	1.6E+01			1.6E+01
Th-234	<	9.1E+01			9.1E+01
U-235		7.8E+01	+/-	3.0E+01	4.8E+01
Am-241	<	1.2E+01			1.2E+01

TIE TO B12C88A

Sr^{90} 2.5E+04

Total GEA (pCi/g)	2.1E+04	+/-	4.2E+03

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G L. Hastings 8/6/01

Report Printed: Monday, August 06, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9292
Joan Kessner	372-9487

000038

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9572 **Sample Date & Time** 8/3/01 2310

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 10:52:5

Sample ID: B12BV0

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.7E+01	+/-	7.5E+00	8.1E+00
Co-60	<	2.4E+00			2.4E+00
Cs-137		2.1E+04	+/-	4.2E+03	9.5E+00
Eu-152	<	3.4E+01			3.4E+01
Eu-154	<	8.1E+00			8.1E+00
Eu-155	<	1.9E+01			1.9E+01
Tl-208		2.5E+01	+/-	1.5E+01	2.3E+01
Pb-212	<	1.4E+02			1.4E+02
Bi-214	<	2.1E+01			2.1E+01
Pb-214	<	2.5E+01			2.5E+01
Ac-228	<	1.3E+01			1.3E+01
Pa-234	<	1.6E+01			1.6E+01
Th-234	<	9.1E+01			9.1E+01
U-235		7.8E+01	+/-	3.0E+01	4.8E+01
Am-241	<	1.2E+01			1.2E+01

TIETO

B12DC0-A

Sr-90 2.5E+04

Total GEA (pCi/g)	2.1E+04	+/-	4.2E+03

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion.
 # No peaks for this radionuclide were visible above background in the specurum. The result was reported as less than MDC.

Analyst G L. Hastings 8/6/01

Report To	Fax
CS Cearlock	372-9292
SJ Treat	372-9292
Joan Kessner	372-9487

Report Printed: Monday, August 06, 2001

000039

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9571 **Sample Date & Time** 8/3/01 0500

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 9:22:06

Sample ID: B12BT9

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	1.7E+03			1.7E+03
Co-60		6.1E+02	+/-	3.1E+02	4.5E+02
Cs-137		1.2E+06	+/-	2.0E+05	5.3E+03
Eu-152	<	4.0E+03			4.0E+03
Eu-154	<	1.5E+03			1.5E+03
Eu-155	<	2.2E+03			2.2E+03
Tl-208		2.7E+03	+/-	2.7E+03	6.5E+01
Pb-212	<	1.6E+04			1.6E+04
Pb-214	<	2.9E+03			2.9E+03
Bi-214	<	3.7E+03			3.7E+03
Ac-228	<	2.1E+03			2.1E+03
Pa-234	<	1.8E+03			1.8E+03
Th-234	<	4.3E+03			4.3E+03
U-235	<	5.4E+03			5.4E+03
Am-241	<	1.3E+03			1.3E+03

QUALITATIVE ONLY DUE TO HIGH DEAD TIME COUNTED SAMPLE 1 1/8" ABOVE DETECTOR GH

TIE TO B12DB9-A

Sr-90 1.5E+06

Total GEA (pCi/g) EA	1.2E+06	+/-	2.1E+05	

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 8/6/01

Report Printed: Monday, August 06, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9292
Joan Kessner	372-9292

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3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9577 **Sample Date & Time** 8/3/01 0120

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 12:29:0

Sample ID: B12BT8

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	1.6E+02			1.6E+02
K-40	<	5.2E+03			5.2E+03
Co-60	<	1.4E+03			1.4E+03
Cs-137		9.8E+05	+/-	3.0E+05	3.2E+03
Eu-152	<	9.5E+03			9.5E+03
Eu-154	<	4.1E+03			4.1E+03
Eu-155	<	5.2E+03			5.2E+03
Tl-208	<	7.1E+03			7.1E+03
Pb-212	<	3.8E+04			3.8E+04
Bi-214	<	1.0E+04			1.0E+04
Pb-214	<	6.9E+03			6.9E+03
Ra-226	<	5.7E+04			5.7E+04
Ac-228	<	6.0E+03			6.0E+03
Pa-234	<	4.4E+03			4.4E+03
Th-234	<	2.4E+04			2.4E+04
U-235	<	1.3E+04			1.3E+04
Am-241	<	3.2E+03			3.2E+03

QUALITATIVE ONLY DUE TO SAMPLE COUNTED 1½" ABOVE DETECTOR DUE TO HIGH DEAD TIME. GH

TIE TO B12DB8-A

Sr-90 10E+05

Total GEA (pCi/g) EA	9.8E+05	+/-	3.0E+05

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	3.4E+03	+/-	4.2E+01
Gross Beta	1.0E+05	+/-	8.2E+02

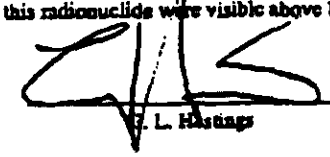
Alpha MDC (pCi/g)	Beta MDC (pCi/g)
1.2E+03	5.1E+04

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238diss is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232diss is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst  8/6/01
T. L. Hastings

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9282
Joan Kessner	372-9487

Report Printed: Monday, August 06, 2001

000641

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9576 **Sample Date & Time** 8/2/01 0620

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/6/01 12:05:3

Sample ID: B12BT3

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	3.6E+03			3.6E+03
Co-60	<	9.9E+02			9.9E+02
Cs-137		1.4E+06	+/-	2.4E+05	9.4E+03
Eu-152	<	8.5E+03			8.5E+03
Eu-154	<	2.9E+03			2.9E+03
Eu-155	<	5.0E+03			5.0E+03
Tl-208	<	6.4E+03			6.4E+03
Pb-212	<	3.4E+04			3.4E+04
Pb-214	<	6.1E+03			6.1E+03
Bi-214	<	7.6E+03			7.6E+03
Ra-226	<	5.7E+04			5.7E+04
Ac-228	<	4.6E+03			4.6E+03
Th-234	<	2.3E+04			2.3E+04
Pa-234	<	4.2E+03			4.2E+03
U-235	<	1.3E+04			1.3E+04
Am-241	<	2.9E+03			2.9E+03

QUALITATIVE ONLY DUE TO SAMPLE COUNTED 2 1/4" ABOVE DETECTOR DUE TO HIGH DEAD TIME

TIE TO B12C64-A

Sr-90 1.5E+06

Total GEA (pCi/g) EA	1.4E+06	+/-	2.4E+05	

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	3.7E+03	+/-	4.6E+01	1.3E+03	
Gross Beta	1.1E+05	+/-	8.6E+02		5.3E+04

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 8/6/01

Report To	Fax
CS Cearlock	372-9292
SJ Trent	372-9292
Joan Kessner	372-9007

Report Printed: Monday, August 06, 2001

0600.42

3/22/2018 REV.1

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9559 **Sample Date & Time** 8/2/01 0210

Project ID: 200E B-38 **SAF Number:** B01-058 **Date Analyzed** 8/2/01 11:56:3

Sample ID: B12BT2

Gamma Energy Analysis

Nuclide		Activity (pCi/g) EA		Error (pCi/g) EA	MDC (pCi/g) EA
K-40	<	5.6E+03			5.6E+03
Co-60	<	1.5E+03			1.5E+03
Cs-137		8.5E+05	+/-	1.4E+05	1.3E+04
Eu-152	<	1.1E+04			1.1E+04
Eu-154	<	4.3E+03			4.3E+03
Eu-155	<	6.5E+03			6.5E+03
Tl-208	<	8.7E+03			8.7E+03
Pb-212	<	4.5E+04			4.5E+04
Bi-214	<	1.1E+04			1.1E+04
Pb-214	<	8.2E+03			8.2E+03
Ra-226	<	7.5E+04			7.5E+04
Ac-228	<	6.5E+03			6.5E+03
Pa-234	<	5.5E+03			5.5E+03
Th-234	<	3.0E+04			3.0E+04
U-235	<	1.7E+04			1.7E+04
Am-241	<	3.8E+03			3.8E+03

80g

QUALITATIVE ONLY DUE TO HIGH DEAD TIME. SAMPLE COUNTED 2.5" ABOVE DETECTOR

GH 8/4/01

Sr-90 = 90 E+05

Total GEA (pCi/g) EA	8.5E+05	+/-	1.4E+05	

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDA = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G L. Hastings 8/2/01

Report Printed: Thursday, August 02, 2001

Report To	Fax
CS Cearlock	372-9292
SJ Trent	[illegible]
Joan Kessner	372-9487

000043

35 x 35 x 36 cm

January 5, 1995

Packaging Description and Testing Data

Viking Corrugated Plastic Reusable Shipping Container - 1B

Combination Packaging Description

a. Inner Packaging

1-Litre Glass inserted into 5-Litre round can with friction lid. This container is tested to Selective Packaging Variation #2 (Sec 49 CFR. Part 178.601 (g)(2)).

b. Outer Packaging

Plastic box (4H2), 14" x 14" x 14 1/2" I.D.
Single Wall, Corrugated Plastic with an RSC style bottom closure and an FOL style top closure.
300 lbs/sq. in. Bursting Strength
Joint: Stitched
Manufacturer: Viking Packing Specialist, Tulsa, OK

c. Cushioning Materials/Other Packagings

1 1/2" and 2" Polyethylene foam is coupled with 1/2" insulating board (R-Board) by an industrial strength canvas material to construct tops, bottoms, walls, and ends. Top piece includes a .070 grade chip board to strengthen 1/2" staple holding ability.

2.3 Polyethylene suspension, top/bottom.

d. Inner Packaging Orientation

Inner packagings shall be placed into supplemental inner can (other specified container) with closure upwards.

e. Closure Material Specifications

Bottom Closure to be performed by VPS using 1 1/4 x 5/8" staples

Top Closure consists of five Mojave S.S. Buckles (plastic snap-buckle type). Viking Procurement part #5130-B secured by Army Webbing straps and heavy rivets.

000044

f. Handling

2 large, recessed, spring-loaded handles are mounted on the ends of the container (one at each end). Handles are rubber coated for easy handling.

g. Temperature Control

Not Applicable.

TEST RESULTS

Date: Jan. 5, 1995
File #: O-004
Pkg. Group: I

MFG/Certifier: Viking Packing Specialist
Address: 10221 E. 61st. St.
City/State/Zip: Tulsa, OK 74133
Telephone #: (918)252-5515

Test	Procedure			Comments
	TEMP	R.H.	HOURS	
CONDITIONING	0° F	n/a	24	

Tested Box #:	DROP ORIENTATION	RESULT	
DROP #1	Flat on Bottom	Pass	
#2	Flat on Top	Pass	
#3	Flat on Long Side	Pass	Drop Height: 6'
#4	Flat on Short Side	Pass	
#5	Bottom Corner	Pass	

Tested Box #:	FORCE	DEFLECT	RESULT	Comments
STACK*+ #1	405 lbs	None	Pass	Stacking was accomplished using empty outer packagings.
#2	405 lbs	None	Pass	
#3	405 lbs	None	Pass	

Tested Box #:	RESULT	Comments
Vibration #1	Pass	Three (3) boxes in the Drop Test were used for the Vibration Test. Test time was a minimum of one (1) hour on each tested box.
#2	Pass	
#3	Pass	

* Duration was a minimum of 24 Hours.

+ Stack force calculations: Package Weight = 28 Kg
((3048 mm - 406.40 mm)/406.40 mm) x 28 Kg = 182 Kg

COMMENTS

Packaging Instructions attached.

Product was simulated in the testing. Additional dead weight was added to bring the gross weight of the design to 28 Kgs. Marks: 4H2V/X14/S/95

Additional information may be attached

TEST SUPERVISOR: Barry McClure DATE: 1/5/95

File #: 0-004

Packaging the Tested Design

1. Ensure that bottom cushion and wall and end cushions are intact and properly positioned.
2. Place inner packaging into specified 5-litre can (or other specified container) with closure upward.
3. Place 5-litre can inside bottom poly foam suspension panel.
4. Place top poly foam suspension panel on top of can.
5. Place specified cushioning material cap into outer packaging.
6. Fold FOL top closed and snap buckles at all 5 locations.
7. Ensure gross package weight does not exceed 14 Kg.

000047

Radioactive Testing 1B 1/8/95

Type A Requirements

Preparation: Water Spray
Duration: 4 Hrs. (applied consecutively)

Drops: 1. Free drop requirement of 49 CFR 173.465(c) covered by "V" testing criteria (Long side drop performed on latches).

2. Eight corner drops were performed on one sample at a distance of 1 foot.

3. 30 foot drop

Results: All Three Pass

Stack: Compression test required by 173.465(d) fulfilled in "V" testing criteria.

Computations: 5 x 28Kg = 140 Kg or 309 lbs.

265lbs./sq.ft. of vertically projected area of 1.36 sq. ft. = 360.4 lbs.

Acutual Stack Test Weight: 405 lbs.
Result: Pass

Penetration:
Distance: 5 1/2 feet
Result: Pass

Barry McClure
Testing Supervisor
1/9/95

000048

RADIOACTIVE SHIPMENT RECORD

106587 REV 7 — 3. — Page 1 of 7

3/22/2018

1. SHIP FROM U.S. DEPT. OF ENERGY C/O
Company PUR HANFORD
Address 3720 BUILDING 300 AREA
City, State, Zip RICHLAND WA 99352
Contact RIKKI THORN
Phone 509 521 3803

Ship ☑ Prepaid ☐ Collect — 4.
Via ☑ Motor ☐ Air Psgr ☐ UPS ☐ Rail ☐ Air Cargo ☐ Site Carrier
SHIPMENT AUTHORIZATION NUMBER

2. SHIP TO
Company SEVERN TRENT INC.
Address 2800 G.W. WAY
City, State, Zip RICHLAND WA 99352
Attention KAREN ACHTENBERG
Phone (509) 375-3131

Markings Applied 6.
- Radioactive - LSA ☐
- Radioactive - SCO ☐
- Type A ☒
- Type B with trefoil ☐

LSA Description 8.
- LSA-I ☐
- LSA-II ☐
- LSA-III ☐
- SCO-I ☐ N/A
- SCO-II ☐

Labels Applied 10.
- Empty ☐
- Radioactive White - I ☐
- Radioactive Yellow - II ☒
- Radioactive Yellow - III ☐
- Subsidiary Hazard ☐

For Normal Form only — 7.
Identify
Physical Form: ☐ Liquid ☐ Gas ☑ Solid
Chemical Form: ☑ Elemental ☐ Metal ☐ Nitrate ☐ Oxide ☐ Mixture ☐ Other

EMERGENCY RESPONSE 9.
Telephone 1-888-766-0771
Emergency Response Guide(s) 163

Highway Route Controlled Quantity ☐
Exclusive Use Shipment with instructions ☐
Placards Applied ☐
If Rail Specify:
Fissile Excepted, Grams 259 ☑
Excepted Package Statement ☐

5. HM — Proper Shipping Name: _____ Radioactive Material,

	excepted package - empty packaging	7	UN2910
	excepted package - instruments or articles	7	UN2910
☒	excepted package - limited quantity of material	7	UN2910
	excepted package - articles manufactured from natural or depleted uranium or natural thorium	7	UN2910
	Special Form, n.o.s.	7	UN2974
	Low Specific Activity, n.o.s.	7	UN2912
X	n.o.s.	7	UN2982
	Fissile, n.o.s.	7	UN2918
	Surface Contaminated Object	7	UN2913

Radioactive material, Type A Package, UN2915, 7, RQ

Warning -- Fissile Material Controlled Shipment. Do Not Load More Than ____ Packages Per Vehicle. In Loading and Storage Areas, Keep at Least 20 Feet From Other Packages Bearing Radioactive Labels.

11. No. Pkg.	Model Package	COC/Spec	Serial No.	Seal No.	Isotopes	T.I.	DOT Package	Gr. Wt. Kg.
1	Plastic Box	Strong Tight	SN1-587	TAPE	Sr90 Cs137	0.5	7A Type A	18 Kg
Lining	Cooler (Metal Pkg)	NZF	SN104	Padlock	SN'03-5	-5	84 mRq	32 Kg
Glass Jars	Bubble Wrapped				0.02			
Poly bagged in	Cooler with Ice & Dry					0.5	84 mRq	50 Kg
(Shipper may describe package in detail on one of the unused lines above)		RC1-054			TOTALS	0.5	84 mRq	100 Kg

12. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Certifier's Signature: K M L — On behalf of DOE-RL — Date: 8.7.01 — Organization: FRC AFS — Complete Cost Code (Inc. End Function): 1520TW2674C

13. Surface Dose Rate of Package
☐ <0.005 or ____ mSv/hr
<0.5 or 0.5 mrem/hr (N+ß γ)

Dose Rate @ 1 Meter from Surface of Package
☒ <0.005 or ____ mSv/hr
<0.5 or ____ mrem/hr (N+ß γ)

Additional Data and Instructions (inc. Readings on Internal Packaging)

Signature - Radiation Monitoring: Lori Murray

Smears of Outer Container
☑ <0.41 Bq (22 dpm) ß γ /cm²
☑ <0.04 Bq (2.2 dpm) α /cm²
☑ <Tbl. 2-2 HSRCM Onsite Limits

TRUCK LOAD OR EXCLUSIVE USE
Surface @ 2 meters @ Cab or sleeper (Using N+ß γ)
☑ <2 mSv/hr (200 mrem/hr)
☑ <0.1 mSv/hr (10 mrem/hr)
☑ <0.02 mSv/hr (2 mrem/hr)

Bldg.	Survey No.	Date
3725	RCF 01-0297	08-08-01

14. TRANSPORTER
Vehicle Number: 603 06468
DRIVER SIGNATURE: Terry Bowman

RECEIVER
RECEIVER SIGNATURE: Michael Kennard
Date: 8-8-01

15. OFFSITE AUTHORIZATION
Shipment has been inspected and verified to be in compliance with DOT regulations
Authorized Signature: Printed Name: L. M. R. Smith — Date: 8-8-1

16. AUTHORIZATION FOR SHIPMENT
AIR TRANSPORT CERTIFICATION: ☐ N/A
CARGO AIRCRAFT: ☐ Cargo Aircraft Only — Labels Applied
PASSENGER AIRCRAFT: ☐ Ltd Qty — ☒ Research/Medical Diagnosis — ☐ Human Medical Research
Pkg. Dimensions (cm): 35 x 35 x 36 Cm

17. OFFSITE AUTHORIZATION

Tracking No.	Date Shipped	Routing	ETA
RMBH 9674	8-8-1	CIG	8-10-01
Surveyed By	Date	Approved for Shipment Offsite	Date
			8-8-01

000019

54-6000-088 (06/97)

Hand Delivered to FedEx

RQC050 Severn Trent Laboratories, Inc. Run Date: 8/29/01
WET CHEM BATCHSHEET Time: 10:02:36

STL Richland

PRODUCTION FIGURES - WET CHEM

W03574

TOTAL NUMBER	SAMPLE NUMBER	QC	RE-RUN MATRIX	RE-RUN OTHER	MISC NUMBER	TOTAL HOURS	EXPANDED DELIVERABLE

METHOD: EA Chromium, Hexavalent (7196A)
QC BATCH #: 1225482
PREP DATE: 8/13/01
COMP DATE: 8/13/01
USER: ROSSR

INITIALS:
PREP _____
ANAL _____

DATA ENTRY:
INITIALS _____
DATE _____

Work Order	Lab Number	Structured Analysis	Exp. Del.	Analysis Date	Sample ID:
EHM35-1-AA	J-1H080240-001	XX A DW EA 5I	E	_____	B12C88
EHM37-1-AA	J-1H080240-002	XX A DW EA, 5I	E	_____	B12DB9
EHM37-1-AD	J-1H080240-002-S	XX A DW EA 5I	E	_____	B12DB9
EHM37-1-AE	J-1H080240-002-S	XX A DW EA 5I	E	_____	B12DB9
EHM37-1-AF	J-1H080240-002-X	XX A DW EA 5I	E	_____	B12DB9 DUP
EHM4C-1-AA	J-1H080240-003	XX A DW EA 5I	E	_____	B12C64
EHM4E-1-AA	J-1H080240-004	XX A DW EA 5I	E	_____	B12DB8
EHM4J-1-AA	J-1H080240-005	XX A DW EA 5I	E	_____	B12DC0
EHM4L-1-AA	J-1H080240-006	XX A DW EA 5I	E	_____	B12C63
EHW4A-1-AA	J-1H130000-482-B	XX A DW EA 5I		_____	INTRA-LAB BLANK
EHW4A-1-AC	J-1H130000-482-C	XX A DW EA 5I		_____	INTRA-LAB CHECK

Control Limits
(75-125)
(75-125)
(80-120)

000050