SEVERN TRENT SERVICES

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel 314 298 8566
Fax 314 298 8757
www.stl-inc.com

ANALYTICAL REPORT

PROJECT NO. 216-Z-11 DITCH

B02-050

Lot #: F2G110119
SDG #: W03765A

Joan Kessner

Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

SEVERN TRENT LABORATORIES, INC.

Marti Ward

MARTI WARD
Project Manager

July 15, 2002

SEVERN TRENT SERVICES

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

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Fax 314 298 8757
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July 15, 2002

STL LOT NUMBER: **F2G110119**

Joan Kessner
Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

Dear Joan Kessner,

This report contains the analytical results for the Hex Chromium sample requested 7/11/02. The sample was received under chain of custody by Severn Trent Laboratories (STL) on May 5, 2002. This sample is associated with your B02-050 project.

The sample was analyzed outside holding time due to lab error.

All applicable quality control procedures met method-specified acceptance criteria.

This report shall not be reproduced except in full, without the written approval of the laboratory. This report is incomplete without the Case Narrative. Results are reported "as received" (i.e. wet weight) unless otherwise noted.

If you have any questions, please feel free to call me at (314) 298-8566.

Sincerely,

Marti Ward
Project Manager

cc: Project File

ACCREDITED IN ACCORDANCE WITH nelac

SAMPLE SUMMARY

F2G110119

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E4HCR	001	B14DL0	04/25/02	09:54

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

F2G110119

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Hexavalent Chromium	SW846 7196A	SW846 3060A

References:

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

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/03/02
Time: 14:29:43
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 216-Z-11 DITCH
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B02-050
AMOUNT REC"D: 4X60G,3X120G,20ML
STORAGE LOC: VE2,S33
LOT COMMENTS: Anions/Metals: CRDL standard required
MATRIX: SOLID
USAF MATRIX:
SAMPLE ID: B14DL0
QC PACKAGE: Report
SAMPLE COMMENTS:

QUOTE/SAR #: 47520
LAB ID: F-2E030265-001
WORK ORDER: E0WMP
RECEIVING DATE: 5/02/02
SAMPLING DATE: 4/25/02
ANALYTICAL DUE DATE: 6/11/02N
REPORT DUE DATE: 6/11/02
PRIORITY: 40
+ SAMPLING TIME: 9:54
RECEIVING TIME: 7:30

SDG# : W03744

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B,Trace)	06	5/03/02	0/00/00	10/22/02
METALS, TOTAL - Soi[illegible]				
MT6010_S AG,AS,BA,BE,BX,CD,CR,CU,MG,MN,MO,NI,PB,SE,VX,ZN				
(A-46-QM-01) E0WMP Protocol: A QC Program: STANDARD TEST SET				
Mercury (7471A, Cold Vapor) - Solids	06	5/03/02	0/00/00	5/23/02
METALS, TOTAL (Method Exclusive) - Solids				
M7471_S HG				
(A-70-09-01) E0WMP Protocol: A QC Program: STANDARD TEST SET				
Nitrate-Nitrite (353.1)	06	5/03/02	5/23/02	5/23/02
LEACHATE, DI (Routine)				
(A-82-HN-01) E0WMP-1-AC Protocol: A QC Program: STANDARD TEST SET				
Fluoride (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/30/02
LEACHATE, DI (Routine)				
(A-82-C8-01) E0WMP-1-AW Protocol: A QC Program: STANDARD TEST SET				
Nitrate as N (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/04/02
LEACHATE, DI (Routine)				
(A-82-C9-01) E0WMP-1-AX Protocol: A QC Program: STANDARD TEST SET				
Sulfate (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/30/02
LEACHATE, DI (Routine)				
(A-82-CY-01) E0WMP-1-A0 Protocol: A QC Program: STANDARD TEST SET				
Nitrogen, Ammonia (350.1, Automated)	06	5/03/02	0/00/00	5/23/02
LEACHATE, DI (Routine)				
(A-82-VM-01) E0WMP-1-A1 Protocol: A QC Program: STANDARD TEST SET				
Sulfide (9030)	06	5/03/02	5/23/02	5/24/02
LEACHATE, DI (Routine)				
(A-82-P3-01) E0WMP-1-A2 Protocol: A QC Program: STANDARD TEST SET				

Hydrocarbons, Extractable Petroleum (801 06 5/03/02 5/09/02 6/18/02
SONICATION - Low Level
(A-13-HS-01) E0WMP-1-A3 Protocol: A QC Program: STANDARD TEST SET

Volatile Organics, GC/MS (8260B) 06 5/03/02 0/00/00 5/09/02
PURGE AND TRAP - 5 mL purge
STL: SW-846 8260B
(A-15-QK-01) E0WMP-1-A4 Protocol: A QC Program: STANDARD TEST SET

PCBs (8082) 06 5/03/02 5/09/02 6/18/02
SONICATION w/ACID STRIP (PCB)
STL: HANFORD PCB GC:LIST-1(7)
(A-71-QH-01) E0WMP-1-A5 Protocol: A QC Program: STANDARD TEST SET

Moisture, Percent (160.3) 06 5/03/02 0/00/00 8/02/02
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION
(A-88-WM-01) E0WMP-1-A6 Protocol: A QC Program: STANDARD TEST SET

Base/Neutrals and Acids (8270C) 06 5/03/02 5/09/02 6/18/02
SONICATION - Low Level
STL: SW-846 8270C
(A-13-QL-01) E0WMP-1-A7 Protocol: A QC Program: STANDARD TEST SET

Hydrocarbons, Volatile Petroleum (8015 M 06 5/03/02 0/00/00 5/09/02
PURGE AND TRAP - 5 mL purge
STL: HANFORD LBH GC:GASOLINE(1)
(A-15-WU-01) E0WMP-1-A8 Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/03/02
Time: 14:29:43
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 216-Z-11 DITCH
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B02-050
AMOUNT REC"D: 4X60G,3X120G,20ML
STORAGE LOC: VE2,S33
LOT COMMENTS: Anions/Metals: CRDL standard required
MATRIX: SOLID
USAF MATRIX:
SAMPLE ID: B14DL0
QC PACKAGE: Report
SAMPLE COMMENTS:

QUOTE/SAR #: 47520
LAB ID: F-2E030265-001-D
WORK ORDER: E0WMP MSD
RECEIVING DATE: 5/02/02
SAMPLING DATE: 4/25/02
ANALYTICAL DUE DATE: 6/11/02N
REPORT DUE DATE: 6/11/02
PRIORITY: 40
+ SAMPLING TIME: 9:54
RECEIVING TIME: 7:30

SDG# : W03744

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Hydrocarbons, Extractable Petroleum (801	06	5/03/02	5/09/02	6/18/02
SONICATION - Low Level				
(A-13-HS-01) E0WMP-1-CL Protocol: A QC Program: STANDARD TEST SET				
Volatile Organics, GC/MS (8260B)	06	5/03/02	0/00/00	5/09/02
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260B				
(A-15-QK-01) E0WMP-1-CG Protocol: A QC Program: STANDARD TEST SET				
PCBs (8082)	06	5/03/02	5/09/02	6/18/02
SONICATION w/ACID STRIP (PCB)				
STL: HANFORD PCB GC:LIST-1(7)				
(A-71-QH-01) E0WMP-1-CJ Protocol: A QC Program: STANDARD TEST SET				
Base/Neutrals and Acids (8270C)	06	5/03/02	5/09/02	6/18/02
SONICATION - Low Level				
STL: SW-846 8270C				
(A-13-QL-01) E0WMP-1-CL Protocol: A QC Program: STANDARD TEST SET				
Hydrocarbons, Volatile Petroleum (8015 M	06	5/03/02	0/00/00	5/09/02
PURGE AND TRAP - 5 mL purge				
STL: HANFORD LBH GC:GASOLINE(1)				
(A-15-WU-01) E0WMP-1-CN Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B Trace)	06	5/03/02	0/00/00	10/22/02
METALS, TOTAL - Soils				
MT6010_S AG,AS,BA,BE,BX,CD,CR,CU,MG,MN,MO,NI,PB,SE,VX,ZN				
(A-46-QM-01) E0WMP Protocol: A QC Program: STANDARD TEST SET				
Mercury (7471A, Cold Vapor) - Solids	06	5/03/02	0/00/00	5/23/02
METALS, TOTAL (Method Exclusive) - Solids				
M7471_S HG				
(A-70-09-01) E0WMP Protocol: A QC Program: STANDARD TEST SET				

PSL20300
Page 1

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/03/02
Time: 14:29:43
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 216-Z-11 DITCH
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B02-050
AMOUNT REC"D: 4X60G,3X120G,20ML
STORAGE LOC: VE2,S33
LOT COMMENTS: Anions/Metals: CRDL standard required
MATRIX: SOLID
USAF MATRIX:
SAMPLE ID: B14DL0
QC PACKAGE: Report
SAMPLE COMMENTS:

QUOTE/SAR #: 47520
LAB ID: F-2E030265-001-S
WORK ORDER: E0WMP MS
RECEIVING DATE: 5/02/02
SAMPLING DATE: 4/25/02
ANALYTICAL DUE DATE: 6/11/02N
REPORT DUE DATE: 6/11/02
PRIORITY: 40
+ SAMPLING TIME: 9:54
RECEIVING TIME: 7:30

SDG# : W03744

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Sulfate (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-CY-01) E0WMP-1-A9 Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	8/02/02	8/30/02
Nitrogen, Ammonia (350.1, Automated) LEACHATE, DI (Routine) (A-82-VM-01) E0WMP-1-CA Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	0/00/00	5/23/02
Sulfide (9030) LEACHATE, DI (Routine) (A-82-P3-01) E0WMP-1-CC Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	5/23/02	5/24/02
Hydrocarbons, Extractable Petroleum (801 SONICATION - Low Level (A-13-HS-01) E0WMP-1-CD Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	5/09/02	6/18/02
Volatile Organics, GC/MS (8260B) PURGE AND TRAP - 5 mL purge STL: SW-846 8260B (A-15-QK-01) E0WMP-1-CF Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	0/00/00	5/09/02
PCBs (8082) SONICATION w/ACID STRIP (PCB) STL: HANFORD PCB GC:LIST-1(7) (A-71-QH-01) E0WMP-1-CH Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	5/09/02	6/18/02
Base/Neutrals and Acids (8270C) SONICATION - Low Level STL: SW-846 8270C (A-13-QL-01) E0WMP-1-CK Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	5/09/02	6/18/02
Hydrocarbons, Volatile Petroleum (8015 M PURGE AND TRAP - 5 mL purge STL: HANFORD LBH GC:GASOLINE(1)	06	5/03/02	0/00/00	5/09/02

TL St. Louis

(A-15-WU-01) E0WMP-1-CM Protocol: A QC Program: STANDARD TEST SET

PSL20300
Page 2

SEVERN TRENT LABORATORIES, INC
CLIENT ANALYSIS SUMMARY
STL St. Louis

Run Date: 5/03/02
Time: 14:29:43
User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: 216-Z-11 DITCH
REPORT TO: Joan Kessner
P.O. NUMBER: MRC-SBB-A-19981
SITE: B02-050
AMOUNT REC"D: 4X60G,3X120G,20ML
STORAGE LOC: VE2,S33
LOT COMMENTS: Anions/Metals: CRDL standard required
MATRIX: SOLID
USAF MATRIX:
SAMPLE ID: B14DL0
QC PACKAGE: Report
SAMPLE COMMENTS:

QUOTE/SAR #: 47520
LAB ID: F-2E030265-001-S
WORK ORDER: E0WMP MS
RECEIVING DATE: 5/02/02
SAMPLING DATE: 4/25/02
ANALYTICAL DUE DATE: 6/11/02N
REPORT DUE DATE: 6/11/02
PRIORITY: 40
+ SAMPLING TIME: 9:54
RECEIVING TIME: 7:30

SDG# : W03744

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace) METALS, TOTAL - Solids MT6010_S AG,AS,BA,BE,BX,CD,CR,CU,MG,MN,MO,NI,PB,SE,VX,ZN (A-46-QM-01) E0WMP Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	0/00/00	10/22/02
Mercury (7471A, Cold Vapor) - Solids METALS, TOTAL (Method Exclusive) - Solids M7471_S HG (A-70-09-01) E0WMP Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	0/00/00	5/23/02
Nitrate-Nitrite (353.1) LEACHATE, DI (Routine) (A-82-HN-01) E0WMP-1-CR Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	5/23/02	5/23/02
Fluoride (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C8-01) E0WMP-1-DV Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	8/02/02	8/30/02
Nitrate as N (300.0, Ion Chromatography) LEACHATE, DI (Routine) (A-82-C9-01) E0WMP-1-DW Protocol: A QC Program: STANDARD TEST SET	06	5/03/02	8/02/02	8/04/02

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 5/03/02
Page 1 CLIENT ANALYSIS SUMMARY Time: 14:29:43
STL St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 47520
PROJECT MANAGER: MARTI WARD LAB ID: F-2E030265-001-X
PROJECT #: 216-Z-11 DITCH WORK ORDER: E0WMP SMPDUP
REPORT TO: Joan Kessner RECEIVING DATE: 5/02/02
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/25/02
SITE: B02-050 ANALYTICAL DUE DATE: 6/11/02N
AMOUNT REC"D: 4X60G,3X120G,20ML REPORT DUE DATE: 6/11/02
STORAGE LOC: VE2,S33 PRIORITY: 40
LOT COMMENTS: Anions/Metals: CRDL standard required + SAMPLING TIME: 9:54
MATRIX: SOLID RECEIVING TIME: 7:30
USAF MATRIX:
SAMPLE ID: B14DL0 DUP
QC PACKAGE: Report SDG# : W03744
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Sulfate (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/30/02
LEACHATE, DI (Routine)				
(A-82-CY-01) E0WMP-1-DX Protocol: A QC Program: STANDARD TEST SET				
Nitrogen, Ammonia (350.1, Automated)	06	5/03/02	0/00/00	5/23/02
LEACHATE, DI (Routine)				
(A-82-VM-01) E0WMP-1-D0 Protocol: A QC Program: STANDARD TEST SET				
Sulfide (9030)	06	5/03/02	5/23/02	5/24/02
LEACHATE, DI (Routine)				
(A-82-P3-01) E0WMP-1-D1 Protocol: A QC Program: STANDARD TEST SET				
Nitrate-Nitrite (353.1)	06	5/03/02	5/23/02	5/23/02
LEACHATE, DI (Routine)				
(A-82-HN-01) E0WMP-1-D2 Protocol: A QC Program: STANDARD TEST SET				
Fluoride (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/30/02
LEACHATE, DI (Routine)				
(A-82-C8-01) E0WMP-1-D3 Protocol: A QC Program: STANDARD TEST SET				
Nitrate as N (300.0, Ion Chromatography)	06	5/03/02	8/02/02	8/04/02
LEACHATE, DI (Routine)				
(A-82-C9-01) E0WMP-1-D4 Protocol: A QC Program: STANDARD TEST SET				

00144 CWC 2641

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B02-050-16 | Page 1 of 1

Hanford Inc.	Company Contact: Duane Jacques	Telephone No.: 372-9651	Project Coordinator: TRENT, SJ
R. Fahlberg/R. Nielson			Price Code: 8N
Project Designation: 216-Z-11 Ditch Borehole Samples	Sampling Location: 200 West		SAF No.: B02-050
			Air Quality ☐
Ice Chest No.: ERC-01-062	Field Logbook No.: EL-1517-	COA: B20CW5674C	Method of Shipment: ~~Hand deliver~~ - Govt Vehicle; FEDEX
Shipped To: Severn Trent Incorporated, Richland; ST LOUIS	Offsite Property No.: A02060		Bill of Lading/Air Bill No.: 791187794-9298

Data Turnaround: 45 Days

4.15.02 4.25.02

POSSIBLE SAMPLE HAZARDS/REMARKS

Radioactive

TIC TOB14DMO

Special Handling and/or Storage

COOL 4C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	aG		aG	aG	aG	aG	aG			
No. of Container(s)	1		1	1	1	1	1			
Volume	120mL	60mL	120mL	60mL	60mL	60mL	120mL			
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	See item (4) in Special Instructions.	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G			

Sample No.	Matrix *	Sample Date	Sample Time										
B14DL0	SOIL	4/25/02	0954	X	X	X	X	X	X	X		B14DMO	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Nielson	4/25/02 1700	Rec # 1B	4/25/02 1700
Rec # 1B 3728	5.2.02 0730	R Thorer	5.2.02 0730
R Thorer	5.2.02 0730	FEDEX	
FEDEX			05.03.02 0900

SPECIAL INSTRUCTIONS

See COC comments on SAF

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Boron, Copper, Magnesium, Manganese, Molybdenum, Nickel, Vanadium, Zinc}; Mercury - 7470 - (CV)

(2) IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Sulfides - 9030

(3) VOA - 8260A (TCL); VOA - 8260A (Add-On) ~~{Trichlorofluoromethane}~~; VOA - 8260A (App IX Add-On) {Tetrahydrofuran} RJN 4/15/02

(4) Semi-VOA - 8270A (TCL); Semi-VOA – 8270A (Add-On) {1,2,4-Trimethylbenzene, Cyclohexanone, Tributyl phosphate}

Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/2/02 RT (VOA)

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 (03/01/2002)

#E2F110119 W03765A 12 STL St. Louis

W03744

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B02-050-16 | Page 1 of 1

Bechtel Hanford Inc.

Collector R. Fahlberg/R. Nielson	**Company Contact** Duane Jacques	**Telephone No.** 372-9651	**Project Coordinator** TRENT, SJ
Project Designation 216-Z-11 Ditch Borehole Samples	**Sampling Location** 200 West		**SAF No.** B02-050
Ice Chest No. EPC-01-062	**Field Logbook No.** EL-1517-	**COA** B20CW5674C	**Method of Shipment** ~~Hand deliver~~ - ~~Company vehicle~~ BTS-2-02 FED EX
Shipped To ~~Richland~~ BTS-1-02 ~~Severn Trent Incorporated, Richland~~ ST Louis	**Offsite Property No.** A0202Ø0		**Bill of Lading/Air Bill No.** 791187794-9298

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

POSSIBLE SAMPLE HAZARDS/REMARKS
Radioactive Tie TO B14DM0

Special Handling and/or Storage
Cool 4C

SAMPLE ANALYSIS

Preservation	~~None~~ HNO3	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C			
Type of Container	6	aG	aG	aG	aG	aG	aG			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	120mL	60mL	120mL	60mL	60mL	60mL	120mL			
	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	See item (4) in Special Instructions.	TPH-Diesel Range - WTPH-D; TPH-Gasoline Range - WTPH-G			

BTS-2-02

Sample No.	Matrix *	Sample Date	Sample Time									
B14DL0	SOIL	4/25/02	0954	X	X	X	X	X	X	X		B14DM0

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Nielson	4/25/02 1700	Ref # 1B	4/25/02 1700
Ref 1B 3728	5.2.02 0730	R. Thorne	5.2.02 0730
R. Thorne ETC	5.2.02 0730	FED EX	
FED EX		Sue Wilson	05.03.02 0900

Sign/Print Names

SPECIAL INSTRUCTIONS
See COC comments on SAF

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Boron, Copper, Magnesium, Manganese, Molybdenum, Nickel, Vanadium, Zinc}; Mercury - 7470A (CVAA)
(2) IC Anions - 300.0 {Fluoride, Nitrogen in Nitrate, Sulfate}; Ammonia - 350.1; NO2/NO3 - 353.1; Sulfides - 9030
(3) VOA - 8260A (TCL); VOA - 8260A (Add-On) {~~Trichloromonofluoromethane~~}. VOA - 8260A (App IX Add-On) {Tetrahydrofuran}
(4) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {1,2,4-Trimethylbenzene, Cyclohexanone, Tributyl phosphate}

RJN 4/15/02

BTS-2-02

Personnel not available to relinquish samples from the 3728 Ref # 1B on 5/2/02

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

Title | Date/Time

LABORATORY SECTION Received By | Disposed By | Date/Time

FINAL SAMPLE DISPOSITION Disposal Method

BHI-EE-011 (03/01/2002)

OT #F2F110119 W03765A 13 IL St. Louis

ERC Radiological Counting Facility Analysis Report

RCF Number RCF10218 Sample Date & Time 4/25/2002 0954

Project ID: 200 WEST SAF Number: B02-050 Date Analyzed 4/29/2002 12:2

Sample ID: B14DM0

Gamma Energy Analysis

Nuclide	Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40	< 9.3E+00			9.3E+00
Co-60	< 9.1E-01			9.1E-01
Cs-137	< 5.8E-01			5.8E-01
Eu-152	< 1.9E+00			1.9E+00
Eu-154	< 2.6E+00			2.6E+00
Eu-155	< 1.6E+00			1.6E+00
Am-241	4.0E+01	+/-	3.7E+00	1.7E+00

TIE TO B14DL0

Self absorption curve applied.

Total GEA (pCi/g)	4.0E+01	+/-	3.7E+00

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	73pCi 2.3E+01 (5)	+/-	~~2.1E+00~~ 17pCi	8.3E+00	1.1E+01
Gross Beta	2.0E+01	+/-	1.6E+00		

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 T.J.Snider 4/30/2002

Report To: ID Jacques, SJ Trent
Fax: 373-7711, 372-9292

Report Printed: Tuesday, April 30, 2002

Contractor	OFF-SITE PROPERTY CONTROL	CONTROL NO. (To be obtained from PROPERTY MANAGEMENT)
BHI-HANFORD		A0Z02QQ

PART I - TO BE COMPLETED BY ORIGINATOR

Department: ~~Engineering Support~~ **Field Analytical Support** ~~Field Sampling Support~~

The following items are to be shipped from [X] Contractor [ ] Vendor

Routing **FED EX** [X] Prepaid [ ] Collect

Shipped to / Company / Address / City / Country: **SEVERN TRENT INC. 13715 RIDER TRAIL NORTH EARTH CITY, MO 63045 ATTENTION: MARTI WARD** (314) 298-8566 State Zip Code

Off-site Custodian

On-site Custodian HID

Qty.	Property No.	Description (*include Manufacture Name, Model, Serial No.*)	Acquisition Cost
	2516	ERC 01-062 SAF # B02-050 (1)	(1)

[ ] Classified [X] Unclassified [ ] Shipped Under DOE Contract [ ] Shipped Under Contractor's Use Permit Contract

Necessity for the off-site use of this property

[ ] Required for Project Work. List Project No. #1) 7911-8794-9298

[ ] Business Trip

[ ] Off-site Assignment

[ ] Shipment to Subcontractor. List Subcontract No. _____

[ ] Other *(Please specify)*

ENVIRONMENTAL SAMPLES PACKAGED IN POLYCOOLER WITH WET ICE AND DRY SORB

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release NA | RM Survey No. NA | Date

Location of and Contact for Property *(Name/Phone No./Bldg./Area)*: **RIKKI THOREN/521-8003/3728 BUILDING/300 AREA**

Date Ready for Shipment	Cost Code to be Charged	Approximate Date This Property will be Returned
5/2/02	B20CW5674K	

Originated By / Property Representative Signature: R. Thoren | Date: 5/2/02

Authorized By / Property Management Approval | Date

PART II - TO BE COMPLETED BY SHIPPING

Authorized Shipping Signature: [signature] | Date: 5-2-02

SEVERN TRENT SERVICES

Lot No.: F2E080265
W03744

Condition Upon Receipt Form
St. Louis Laboratory

Client: Bechtel Hanford Date: 05.03.02 Time: 0900

Quote No: 47520 Initiated by: SV

Shipper/No: FedX 791187949298 COC/RFA Numbers: B02-050-16

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: 4°	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:

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: Sue Ross Date: 05.03.02

Project Management Review: M Ward Date: 5.3.02

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

WET CHEMISTRY

BECHTEL HANFORD, INC.

Client Sample ID: B14DL0

General Chemistry

Lot-Sample #...: F2G110119-001 **Work Order #...:** E4HCR **Matrix.....:** SOLID
Date Sampled...: 04/25/02 **Date Received..:** 07/11/02
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.40	mg/kg	SW846 7196A	07/11/02	2193333

Dilution Factor: 1 MDL.....: 0.28

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F2G110119 **Work Order #...:** E4HCR-SMP E4HCR-DUP **Matrix.....:** SOLID

Date Sampled...: 04/25/02 **Date Received..:** 07/11/02

% Moisture.....: 100

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium						SD Lot-Sample #: F2G110119-001		
	ND	ND	mg/kg	0	(0-35)	SW846 7196A	07/11/02	2193333

Dilution Factor: 1

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: F2G110119 **Matrix.....:** SOLID
Date Sampled...: 04/25/02 **Date Received..:** 07/11/02

Percnt Moisture: 100

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium			Work Order #...: E4HCR1AC			MS Lot-Sample #: F2G110119-001		
	ND	40.0	40.8	mg/kg	102	SW846 7196A	07/11/02	2193333
			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.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F2G110119 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium		Work Order #: E4LMH1AA		MB Lot-Sample #:	F2G120000-333	
	ND	0.40	mg/kg	SW846 7196A	07/11/02	2193333
		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 #...: F2G110119 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium		Work Order #: E4LMH1AC		LCS Lot-Sample#: F2G120000-333			
	50.0	51.2	mg/kg	102	SW846 7196A	07/11/02	2193333
		Dilution Factor: 1					

NOTE(S):

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