DOCUMENT RELEASE FORM

(1) Document Number: RPP-47274	(2) Revision Number: 0	(3) Effective Date: 08/19/2010	
(4) Document Type: ☐ Digital Image ☐ Hard copy ☒ PDF ☐ Video	(a) Number of pages (including the DRF) or number of digital images: 251		
(5) Release Type: ☒ New ☐ Cancel	☐ Page Change	☐ Complete Revision	
(6) Document Title: 2010 Completion Report for the 241-S/SX Tank Farm Direct Push Barrier Characterization			
(7) Change/Release Description: Initial release			
(8) Change Justification: N/A			

(9) Associated Structure, System, and Component (SSC) and Building Number:			
(a) Structure Location: N/A	(c) Building Number: N/A	(e) Project Number: N/A	
(b) System Designator: N/A	(d) Equipment ID Number (EIN): N/A		

(10) Impacted Documents:	(a) Document Type	(b) Document Number	(c) Document Revision
	N/A	N/A	N/A

(11) Approvals:

(a) Author (Print/Sign): Harold A. Sydnor	Date: 08/19/2010
(b) Responsible Manager (Print/Sign): Susan J. Eberlein	Date: 08/19/2010
(c) Reviewer (Optional, Print/Sign): Kathi J. Dunbar	Date: 08/19/2010
(d) Reviewer (Optional, Print/Sign):	Date:

(12) Distribution:

(a) Name	(b) MSIN	(a) Name	(b) MSIN
H.A Syndor	E6-31	K.D. Reynolds	G2-02
C.L. Tabor	E6-31	DOE Reading Room	H2-53
A.M Templeton	E6-31		
K.J. Dunbar	E6-31		
L.A. Fort	E6-31		
J.G. Field	E6-31		
R.W. Lober	H6-60		

Release Stamp: AUG 31 2010 DATE: STA: 15 HANFORD RELEASE ID: 3

(13) Clearance	(a) Cleared for Public Release	(b) Restricted Information?	(c) Restriction Type:
	☒ Yes ☐ No	☐ Yes ☒ No	

(14) Clearance Review (Print/Sign): NANCY A FOUAD / Nancy A Fouad Date: 8-31-10

A-6003-881 (REV 2)

2010 Completion Report for the 241-S/SX Tank Farm Direct Push Barrier Characterization

H. A. Sydnor / R. Z. Steffler
Washington River Protection Solutions, LLC / EnergySolutions Federal Services, Inc., Northwest
Richland, WA 99352
U.S. Department of Energy Contract DE-AC27-08RV14800

EDT/ECN: DRF UC:
Cost Center: Charge Code:
B&R Code: Total Pages: 251

Key Words: 241-S, 241-SX, Direct Push, Interim Barrier, Vadose Monitoring

Abstract: This report details the intallation of vadose moitor equipment.

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

AUG 3 1 2010
DATE:
STA: 15
HANFORD RELEASE
ID: 3
Release Stamp

Nancy A Fouad 8-31-10
Release Approval Date

Approved For Public Release

RPP-47274
Revision 0

2010 Completion Report for the 241-S/SX Tank Farm Direct Push Barrier Characterization

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-08RV14800

washingtonriver protectionsolutions

P.O. Box 850
Richland, Washington 99352

RPP-47274
Revision 0

2010 Completion Report for the 241-S/SX Tank Farm Direct Push Barrier Characterization

R. Z. Steffler
Energy*Solutions* Federal Services, Inc., Northwest Operations

Date Published
August 2010

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
Office of River Protection under Contract DE-AC27-08RV14800

washingtonriver protectionsolutions

P.O. Box 850
Richland, Washington

Release Approval Date

RPP-47274
Revision 0

TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

CONTENTS

1.0 INTRODUCTION 1
2.0 SUMMARY OF ACTIVITIES 1
3.0 DIRECT PUSHING, SAMPLING AND LOGGING DETAILS 3
3.1 DIRECT PUSHING 3
3.2 SOIL SAMPLING 3
3.3 GLOBAL POSITIONING SATELLITE SURVEYING 5
3.4 GEOPHYSICAL LOGGING 5
4.0 BOREHOLE DECOMMISSIONING 5
5.0 ENVIRONMENTAL, SAFETY AND HEALTH 7
6.0 REFERENCES 7

APPENDICES

A FSWO-DOW-031 *DESCRIPTION OF WORK: 241-S/SX TANK FARM DIRECT PUSH BARRIER CHARACTERIZATION*, REV. 0 ..... A-i
B GLOBAL POSITIONING SYSTEM COORDINATES AND MAP ..... B-i
C DRILLING AND SAMPLING DAILY WORK RECORDS ..... C-i
D SMALL DIAMETER GEOPHYSICAL LOGGING FOR 241-S TANK FARM BARRIER CHARACTERIZATION STUDY ..... D-i
E CHAIN OF CUSTODY FORMS AND FIELD LOGBOOK ENTRIES ..... E-i
F WASHINGTON STATE DEPARTMENT OF ECOLOGY DOCUMENTS ..... F-i
G SAFETY DOCUMENTATION ..... G-i

TABLES

Table 1. Sample Intervals. 4
Table 2. Borehole Information. (2 sheets total) 6

TERMS

DOW	Description of Work
Energy*Solutions*	Energy*Solutions* Federal Services, Inc.
ID	inside diameter
OD	outside diameter
RPP	River Protection Project
WAC	*Washington Administrative Code*
WRPS	Washington River Protection Solutions, LLC

This page intentionally left blank.

2010 COMPLETION REPORT FOR THE 241-S/SX TANK FARM DIRECT PUSH BARRIER CHARACTERIZATION

1.0 INTRODUCTION

The U.S. Department of Energy assigned the River Protection Project (RPP) Washington River Protection Solutions, LLC (WRPS) Richland, Washington, to collect and provide subsurface data from inside S/SX Tank Farm located in the 200 West Area of the Hanford Site. WRPS contracted Energy*Solutions* Federal Services, Inc., Northwest Operations (Energy*Solutions*) to perform the field activities required to gather this data. This data was intended to provide information about the distribution and movement of contaminants in the vadose zone under and adjacent to the tank farms, and it will be used for eventual retrieval of stored tank waste and closure planning for the single-shell tanks.

FSWO-DOW-031, *Description of Work: 241-S/SX Tank Farm Direct Push Barrier Characterization*, Rev. 0 (see Appendix A) provides a detailed description of the scope of work performed. Energy*Solutions* was responsible for the provision of equipment and personnel to conduct the direct push activities, soil sample collection, and safety oversight. The following were included in the overall Energy*Solutions* work scope: Providing for global positioning surveys, providing subcontract geophysical logging services, providing technical support and preparing final reports. The following appendices contain copies of documentation generated during the performance of the above work scope.

Appendix A, FSWO-DOW-031, *Description of Work: 241-S/SX Tank Farm Direct Push Barrier Characterization*, Rev. 0
Appendix B, Global Positioning System Coordinates and Map
Appendix C, Drilling and Sampling Daily Work Records
Appendix D, *Small Diameter Geophysical Logging for 241-S Tank Farm Barrier Characterization Study*
Appendix E, Chain of Custody Forms and Field Logbook Entries
Appendix F, Washington State Department of Ecology Documents
Appendix G, Safety Documentation

2.0 SUMMARY OF ACTIVITIES

February 4, 2010, drilling equipment and support items were staged at the first S/SX Tank Farm investigative location. FSWO-DOW-031, Rev. 0 was prepared and submitted the month prior. The description of work provides detailed work instructions and information for conducting characterization efforts inside the S/SX Tank Farm.

A hydraulic hammer unit was used for placing five exploration boreholes to refusal, or the approximate target depth of 46 meters (150.1 feet) below ground surface for geophysical logging. Sample boreholes were pushed adjacent to each exploratory borehole.

In the process of reviewing the excavation permit, an environmental representative for WRPS determined that borehole C7741 should be relocated approximately 1 meter (3.3feet) west of the original location, increasing the distance from an existing encasement. Borehole C7741 met refusal at 4.9 meters (16 feet). The designation of that borehole is C7741A. C7741 was again attempted 1 meter (3.3 feet) west of C7741A.

With the exception of C7741A, each of the investigative boreholes outlined in the DOW was utilized for geophysical logging. Extremely hard geological layers caused the push rod to break in borehole C7743, creating an obstruction that prevented the lowering of detectors below 36.6 meters (120 feet). After failed attempts to retrieve the broken push rod, the Vadose Project Technical Point of Contact chose to decommission the borehole, leaving the broken rod in the ground. Borehole C7743 was decommissioned with approximately 10.36 meters (34 feet) of push rod abandoned in the subsurface.

Each exploratory location was selected based on ground-penetrating radar data and as-built infrastructure drawings. The initial investigation included geophysical logging from total depth to surface, using a Bismuth Germanium Oxide spectral gamma scintillation detector and a neutron-neutron moisture probe. The logging data is intended to aid in defining the extent of subsurface contamination. Logging results showed minimal Cs-137 levels in boreholes C7741, C7743, and C7745, while boreholes C7737 and C7739 had increased Cs-137 levels near the surface. The maximum concentration of 27 pCi/g of Cs-137 was located in borehole C7737 at a depth of 0.3 meters (1.0 feet). C7739 displayed a maximum concentration of 15 pCi/g of Cs-137 at a depth of 2.74 meters (9 feet). Only naturally occurring isotopes and Cs-137 were detected in the boreholes. Only one rod was taken out of service and disposed of due to radiological contamination. Detailed results from the geophysical logging efforts are provided in Appendix D.

Offset boreholes were then pushed for sampling purposes approximately 0.6 meters (2 feet) from each exploratory location. Sample depths were chosen based on previous geophysical logging data. As with the logging boreholes, some sample boreholes met refusal, or push rods broke before all sampling was completed. Those boreholes are also identified with an “A” following their identification number. Borehole C7740A is a result of complications that impeded the completion of C7740. Borehole C7740 was abandoned due to broken push rods and obstructions that prevented its completion. Borehole C7740A was also abandoned after the drillers met refusal at 35.36 meters (116 feet) below ground surface. WRPS representatives chose to forgo any further sample attempts from these two locations. Sampling information is provided in Table 1 and Appendix E.

The hydraulic hammer unit and associated personnel initially began mobilization and site setup February 3, 2010. They commenced pushing the first borehole for this task two days later. In an attempt to increase productivity, two hydraulic hammer units and crews were used on the project for one week. The work scope was completed June 14, 2010, with demobilization commencing the following three days. With mobilization and demobilization, there were 89 field days that the hydraulic hammer units and crews were dedicated to the S/SX Tank Farm activities. There were 341.25 hours of down time associated with this task. For exact dates and explanations of down time, refer to the Drilling and Sampling (Percussion) Daily Work Records in Appendix C.

3.0 DIRECT PUSHING, SAMPLING AND LOGGING DETAILS

3.1 DIRECT PUSHING

Per FSWO-DOW-031, Rev. 0, exploration hole placement and sampling was accomplished with the use of a hydraulic hammer system mounted on a tractor-type carrier. For investigative purposes, a 6.35 centimeter (2.5-inch) outside diameter (OD) x 4.45 centimeter (1.75-inch) inside diameter (ID) casing was driven at predetermined locations to specified depths, or refusal. Once a push location was geophysically logged, the data was reviewed by WRPS personnel and sample locations and depths were selected. At designated boreholes, a second location within 0.6 meter (2 feet) of the exploratory hole was then pushed for sample retrieval.

3.2 SOIL SAMPLING

Soil sampling with the rotary hammer unit was accomplished with the dual-wall sampling system. With the dual-wall system, once sample depth has been reached, the inner rod with the dummy drive tip is removed, and the drive tip is replaced with a sampler. The sampler consists of a 6.67 centimeter (2.625-inch) OD x 4.76 centimeter (1.875-inch) ID outer sample barrel, which holds a 4.13 centimeter (1.625-inch) OD x 48.63 centimeter (18.75-inch) long inner sample barrel. The inner sample barrel houses three 3.18 centimeter (1.25-inch) OD x 15.24 centimeter (6-inch) long stainless steel sample liners. Once the sampler and inner rod have been lowered and seated into the outer drive rod, the two are simultaneously advanced far enough to ensure that the sampler is completely filled with material. Unless refusal is met, the sampler is typically driven 0.61 meters (2 feet). Table 1 shows locations, intervals, sample numbers and percent of sample recovered. For sample chain of custody forms and logbook entries, refer to Appendix E.

Table 1. Sample Intervals.

Borehole Number	Depth in Feet	Sample Number	Percent Recovery
C7738	45.0 – 47.0	B24HH9	100%
	62.0 – 64.0	B24HJ0	100%
	96.0 – 98.0	B24KV1	100%
	127.0 – 129.0	B24KV2	100%
	159.0 – 161.0	B24KV3	100%
C7740	40.0 – 42.0	B24YW4	100%
	96.0 – 98.0	B24YW5	100%
C7742	40.0 – 42.0	B24YW0	93%
	96.0 – 98.0	B24YW1	100%
	135.0 – 137.0	B24YW6	100%
C7744	37.0 – 39.0	B24YW8	100%
	96.0 – 98.0	B24YW9	100%
	127.0 – 129.0	B24YX0	100%
C7746	44.0 - 46.0	B24YX2	100%
	94.0 – 96.0	B24YX3	100%
	144.0 – 146.0	B24YX4	100%

Samples were obtained and analyzed in accordance with WRPS Sample Authorization Form V10-004 and V10-005. Samples were analyzed for inductively coupled plasma metals, anions, alkalinity, pH, radioisotopes and several other analytes.

The sample tip, drive head, sample liners, and inner sample barrel were cleaned by 222-S lab technicians using standard *Resource Conservation and Recovery Act of 1976* protocol cleaning methods in accordance with LO-080-157, *Cleaning of Containers and Sample Collection Equipment.* This cleaning ensured that no cross contamination was introduced from previous use of the equipment or from the manufacturing process. Copies of the chain of custody forms and associated documentation are provided in Appendix E.

3.3 GLOBAL POSITIONING SATELLITE SURVEYING

With the use of a Trimble[1] 5800 Global Positioning Satellite Survey system and per FSWO-DOW-031, Rev. 0, the original locations of the exploratory boreholes were identified using paint and stakes. Once the task was completed and the boreholes decommissioned, each exploratory and sample borehole was recorded for accuracy. These recorded coordinates were placed on a map showing their locations in direct relation to the underground storage tanks in the vicinity. The coordinates, elevation and a map showing completed push locations/boreholes are provided in Appendix B.

3.4 GEOPHYSICAL LOGGING

Pacific Northwest Geophysics and Three Rivers Scientific conducted the geophysical logging data collection and analysis services on the exploration 6.35 centimeter (2.5-inch) probe boreholes. For the geophysical logging, a portable small diameter logging system was used to collect spectral gamma and moisture data from the bottom of the borehole to the ground surface. Calibration details, survey results and data interpretation, as well as copies of the collected and processed log data, are provided in Appendix D.

4.0 BOREHOLE DECOMMISSIONING

Decommissioning of all the boreholes was conducted in accordance with the *Washington Administrative Code* (WAC) 173-160 requirements. While decommissioning the sample boreholes, the tubing was back pulled while granular bentonite was simultaneously added to the tubing until it reached the surface. Logging boreholes required decommissioning while simultaneously placing resistivity probes.

Several different methods and types of probes were used during this scope of work. Probes were placed by knocking the drive tip out of the bottom of the tubing, and then the tubing was back pulled and filled with bentonite to near the desired probe placement depth. In C7737, C7739 and C7741, all requiring multilevel probes, a mixture of silica sand and salt was then added, encasing the probe. Additional salt and sand was added to the borehole, encasing the probe with approximately 0.3 meters (1 foot) of salt and sand below and above the probe. Granular bentonite was then placed from above the salt and sand to near the next probe depth. This process was repeated for each multilevel probe installation. Once the probes were installed, granular bentonite was added from above the silica sand to surface while back pulling the remaining tubing.

Borehole C7743 had two single resistivity probes installed at depths of 29.6 meters (97 feet) and 11.0 meters (36 feet) below ground surface, in the same manner as the

[1]Trimble is a registered trademark of Trimble Navigation Ltd., Sunnyvale, California.

multilevel probes. Approximately 5.7 liters (1.5 gallons) of water was used to hydrate the silica sand that encompassed these probes.

A multilevel probe designed by Hydro Geophysics, Inc., was installed in borehole C7745. The Hydro Geophysics, Inc., multilevel probe design incorporated braided wire at each probe depth to increase surface area contact with the soil. Installation was done by back pulling the tubing and filling the borehole with bentonite to near the desired probe placement depth. Approximately 0.3 meter (1 foot) of silica sand was placed below each probe. Approximately 0.9 meter (3 feet) of diatomaceous earth was then added, encompassing the probe. 3.8 liters (1 gallon) of water was then used to hydrate the diatomaceous earth. Another 0.3 meters, (1 foot) of silica sand was added, then more bentonite. This process was repeated until all probe sections were encased. Once the probes were installed, granular bentonite was added from above the last silica sand layer to surface while back pulling the remaining tubing.

Each probe installed borehole had a protective steel casing cemented in place approximately 30.48 centimeters (12 inches) deep at the surface to protect the protruding probe wiring. Per WRPS personnel, exploratory hole C7741A did not have resistivity probes installed due to its shallow refusal depth.

Table 2 shows the logged and sample boreholes, coordinates, pushed depths and resistivity probe placement depths.

Table 2. Borehole Information. (2 sheets total)

Borehole # and Type	Northing (In meters)	Easting (In meters)	Elevation (In meters)	Hole Depth (In feet)	Probe Depth
C7737 Logging	134319.21	566829.28	203.073	167.5	159.0, 140.0, 120.0, 100.0, 80.0, 60.0 and 40.0 ft.
C7738 Sampling	134320.00	566829.30	203.015	161.0	NA
C7739 Logging	134319.08	566857.61	203.151	156.0	152.0, 133.0, 113.0, 93.0, 73.0, 53.0 and 33.0 ft.
C7740 Sampling	134319.70	566857.30	203.086	112.0	NA
C7740A	134320.40	566857.40	203.101	116.00	NA
C7741 Logging	134338.30	566872.40	203.103	156.0	152.0, 133.0, 113.0, 93.0, 73.0, 53.0 and 33.0 ft.

Table 2. Borehole Information. (2 sheets total)

Borehole # and Type	Northing (In meters)	Easting (In meters)	Elevation (In meters)	Hole Depth (In feet)	Probe Depth
C7741A	134339.10	566872.30	203.183	16.0	NA
C7742 Sampling	134339.40	566871.50	203.078	137.0	NA
C7743 Logging	134374.07	566869.53	202.974	153.7	97.0 and 36.0 ft.
C7744 Sampling	134373.90	566870.10	202.889	129.0	NA
C7745 Logging	134374.07	566830.57	203.469	155.0	153.0, 130.5, 110.5, 90.6, 70.6, 50.55, 30.55 and 10.4 ft.
C7746 Sampling	134374.20	566829.90	203.448	146.0	NA

5.0 ENVIRONMENTAL, SAFETY AND HEALTH

During the S/SX Tank Farm activities, the job site was surveilled by Energy*Solutions* Operations Safety for safety and health compliance. The work scope conducted under the subject statement of work was completed with no lost time or reportable *Occupational Safety and Health Act of 1970* injuries; however, one first aid case was reported. There were no incidences of equipment or personnel radiological contamination.

6.0 REFERENCES

LO-080-157, *Cleaning of Containers and Sample Collection Equipment*, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," *Washington Administrative Code*, as amended.

Resource Conservation and Recovery Act of 1976, 42 USC 6901 et seq.

Occupational Safety and Health Act of 1970, 29 USC 651 et seq.

This page intentionally left blank.

APPENDIX A

FSWO-DOW-031, *DESCRIPTION OF WORK: 241-S/SX TANK FARM DIRECT PUSH BARRIER CHARACTERIZATION*, REV. 0

This page intentionally left blank.

FSWO-DOW-031
Rev. 0

DESCRIPTION OF WORK
241-S/SX TANK FARM DIRECT PUSH BARRIER CHARACTERIZATION

January 2010

Prepared for
Washington River Protection Solutions, LLC

by
Remediation and Well Services
Energy*Solutions* Federal Services, Inc., Northwest Operations

CONTENTS

1.0 INTRODUCTION AND BACKGROUND 1
1.1 INTRODUCTION 1
1.2 TANK FARM BACKGROUND 2
2.0 METHODOLOGY 4
3.0 PUSH LOCATIONS 5
3.1 PUSH LOCATION DOCUMENTATION 5
3.2 PUSH LOCATION TABLES AND NUMBERING 6
4.0 WORK TASKS 6
4.1 SITE SETUP 6
4.2 PUSH POINT CONTROL 7
4.3 GEOPHYSICAL LOGGING 7
5.0 SAMPLING 8
5.1 SAMPLING PROCESS 8
5.2 CLEANING 8
5.3 RINSEATE SAMPLES 9
5.4 EXPLORATION AND SAMPLING PUSH HOLE DECOMMISSIONING 9
6.0 ENVIRONMENTAL, SAFETY, AND HEALTH PROGRAM 9
6.1 ENVIRONMENTAL, SAFETY, AND HEALTH PROGRAM KEY ELEMENTS 10
6.2 WRPS REQUIRED ENVIRONMENTAL, SAFETY, AND HEALTH ELEMENTS 11
7.0 QUALITY ASSURANCE 11
8.0 REFERENCES 11

FIGURE

Figure 1. 241-S/SX Tank Farm Direct Push Borehole Locations. 3

TABLE

Table 1. Coordinates for Up to Five Exploration Direct Pushes. 6

TERMS

DOE	U.S. Department of Energy
DOW	description of work
Ecology	State of Washington Department of Ecology
Energy*Solutions*	Energy*Solutions* Federal Services, Inc., Northwest Operations
ES&H	Environmental, Safety, and Health
ID	inside diameter
OD	outside diameter
RCRA	*Resource Conservation and Recovery Act of 1976*
SST	single-shell tank
WAC	*Washington Administrative Code*
Well ID	Well identification
WMA	waste management area
WRPS	Washington River Protection Solutions, LLC

FSWO-DOW-031, Rev. 0

DESCRIPTION OF WORK:
241-S/SX TANK FARM DIRECT PUSH BARRIER CHARACTERIZATION

1.0 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

The U.S. Department of Energy (DOE) Office of River Protection and the State of Washington Department of Ecology (Ecology) (the regulator for *Resource Conservation and Recovery Act of 1976* [RCRA] treatment, storage, and disposal facilities) have agreed that a RCRA Corrective Action Project be created with explicit milestones. These milestones are part of the *Hanford Federal Facility Agreement and Consent Order* (part of the M45 milestone series).

The intent of the single-shell tank (SST) waste management areas (WMA) characterization program is to collect samples that have or have not contacted tank waste. These SST farms are designated as radiological buffer areas or contamination areas. The Tank Farm Vadose Zone Project is managing the RCRA Corrective Action Program. This program includes collection of subsurface vadose zone data.

The DOE assigned the River Protection Project Single-Shell Tank Program the tasks of transferring waste from the SSTs to double-shell tanks, and developing and implementing a strategy to retrieve SST and miscellaneous underground storage tank waste. The Single-Shell Tank Program Vadose Zone Project was given responsibility for collecting and providing subsurface data from the SST farm facilities. This contributes to preparation for the eventual retrieval of the storage tank waste. The data that is being collected is intended to provide an understanding of the distribution and movement of contaminants in the vadose zone under and adjacent to the tank farms. The intent of the SST WMA's characterization program is to collect samples that have or have not contacted tank waste.

A multi-discipline team consisting of Washington River Protection Solutions, LLC (WRPS, also known as the Tank Operating Contractor) personnel, including Energy*Solutions* Federal Services, Inc., Northwest Operations (Energy*Solutions*) and other lower-tier subcontractors is necessary to implement the field activities of the site-specific work plans. This description of work (DOW) identifies specific actions for characterization efforts in support of barrier design and placement for 241-S/SX Tank Farm.

This work is being conducted at the direction of the WRPS Vadose Zone Characterization Group. This DOW provides the work instructions for conducting the characterization and sampling efforts.

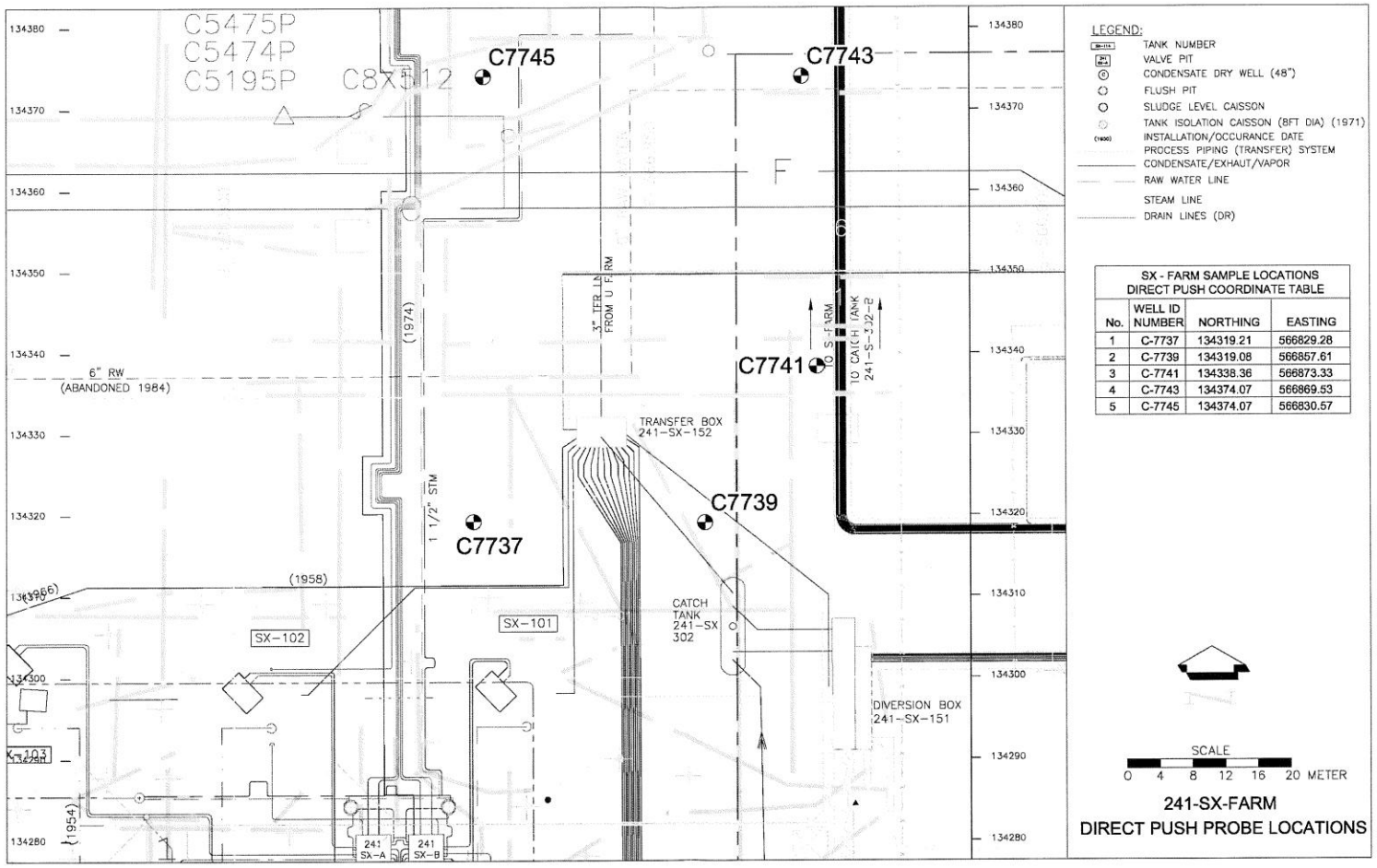
1.2 TANK FARM BACKGROUND

The Hanford Site has 149 underground SSTs that store hazardous radioactive waste. These tanks are grouped into 12 tank farms. The tanks sit below grade with at least 2m (7 ft) of soil cover that shields operating personnel from radiation exposure. Tank pits are located on top of the tanks and provide access to the tanks, pumps, and monitoring equipment. Many of the tanks have leaked, and there have been leaks in the associated infrastructure (e.g., pipelines, diversion boxes). Some of the leaked waste has been shown to have impacted groundwater and exceeded compliance standards.

Figure 1 below is a general location map of the 241-S/SX Single-Shell Tank Farm. This map shows the proposed exploration push locations and details of the known below-ground infrastructure.

031
FSWO-DOW-~~027~~, Rev. 0
SET
1-21-20

Figure 1. 241-S/SX Tank Farm Direct Push Borehole Locations.



SX - FARM SAMPLE LOCATIONS
DIRECT PUSH COORDINATE TABLE

No.	WELL ID NUMBER	NORTHING	EASTING
1	C-7737	134319.21	566829.28
2	C-7739	134319.08	566857.61
3	C-7741	134338.36	566873.33
4	C-7743	134374.07	566869.53
5	C-7745	134374.07	566830.57

1.1.2 Physical Setting

The SST WMA tank farms were constructed in excavations into the near-surface sediments that overlie the Columbia River Basalt Group. Columbia River basalt forms the basement bedrock. Up to approximately 150 m (500 ft) of continental sediments overlie basalt. From oldest to youngest, these deposits include the following.

- Several facies of the Miocene-to-Pliocene age, fluvial-lacustrine Ringold Formation.
- Variably cemented and pedogenically altered deposits of the Plio-Pleistocene unit, which developed on the eroded and weathered surface of the Ringold Formation.
- A relatively loose, fine-grained silty-to-sandy unit designated the Hanford formation/Plio-Pleistocene unit interval.
- Deposits from Pleistocene age cataclysmic floods (i.e., Hanford formation) that blanket the study area with mostly sand- and silt-dominated facies, capped by a sequence of gravel-dominated facies.

2.0 METHODOLOGY

To obtain information about the vertical and horizontal extent of contamination, a hydraulic hammer-driven probe system mounted on a tractor-type carrier has been selected. For this application, the locations for investigation (exploration) are selected through an iterative process as outlined in Section 3.0. Targeted sample depths are determined by review of neutron-neutron moisture and bismuth germinate oxide spectral gamma geophysical logging data. At the direction of the WRPS Technical Lead, up to three samples will be collected in sampling probeholes adjacent to each exploratory probehole.

2.1 EXPLORATORY PROBEHOLES

Initially, five investigative sites are outlined for exploratory push investigation and geophysical log data collection. All of the exploratory push locations will be advanced to approximately 46 m (150 ft) below ground surface or refusal. This depth is targeted in order to investigate the vadose zone from the surface to the cemented portion of the Lower Cold Creek Unit (cemented caliche). All pushes (sample or exploratory) greater than 9.14 m (30 ft) in total depth require an Ecology-approved variance (*Washington Administrative Code* [WAC] 173-160, "Minimum Standards for Construction and Maintenance of Wells").

The exploratory probeholes are investigated by use of a single tubing string that is 6.4 cm (2.5-in.) outside diameter (OD) x 4.45 cm (1.75-in.) inside diameter (ID) (e.g., the exploratory push). All push holes will be decommissioned per applicable WAC 173-160 requirements (e.g., filled with bentonite or bentonite/cement grout as required) as the push tubing is extracted.

2.2 SAMPLE PROBEHOLES

There are five proposed sites in the 241-S/SX Tank Farm area that are planned as potential sampling locations. The decision to place a sampling boring adjacent to the exploratory push will be made by the WRPS Vadose Technical Lead in consultation with site professionals after a review of the geophysical data. Collection of as many as 20, or more, soil samples is planned for the S/SX Direct Push Barrier Characterization. The precise sampling depths and sites selected for sample collection will be based on review of the geophysical logging data collected from the exploratory push.

Sampling is conducted using a "dual-wall" system. This system consists of outer (drive) casing that is 6.67 cm (2.625-in.) OD x 4.76 cm (1.875-in.) ID and inner tubing that is 3.81 cm (1.5-in.) OD x 2.54 cm (1.0-in.) ID. The dual-wall sampling system holds three stainless steel liners that are 3.17 cm (1.25-in.) OD x 2.7 cm (1.08-in.) ID. The predetermined sample depth is driven using a "dummy" tip and the following sampling steps are performed.

- Remove the dummy tip.
- Place sampler on inner string and lower into place at the bottom of the drive casing.
- Drive sampler approximately 60.96 cm to 66.04 cm (24 in. to 26 in.) to fill liners.
- Remove sampler from casing and package/transport materials.
- Replace tip and lock in place.
- Advance casing to next sample interval.

This process is repeated until all sample depths have been achieved or the tubing meets refusal. Upon completion of the final sample extraction, or upon meeting refusal, the dummy tip or sampler is removed and the borehole is decommissioned per WAC 173-160 requirements.

3.0 PUSH LOCATIONS

3.1 PUSH LOCATION DOCUMENTATION

Figure 1 above is a general location map of the 241-S/SX Tank Farm fenced and immediate surrounding area. Specific push locations are also identified in Figure 1. These locations were selected through an iterative process using ground-penetrating radar scan data and as-built infrastructure drawing reviews. The two data sets were compared and sites for placement of push locations were selected based on the highest level of confidence achievable on review of specific locations and ground scan trace comparisons. The final location coordinates of the selected sites (determined from the ground-penetrating radar and as-built review) were plotted with computer-aided drafting (see Figure 1 above). Push locations will be documented on Well Information Reports/Field Activity Reports. In addition to the coordinate position of the probe location, the push depth, geophysical log data and other pertinent information derived during the activity (e.g., depth of contamination as identified from geophysical log interpretation, degree of

contamination observed on push rods during extraction) are included in the Field Activity Reports and Ecology-required documentation.

3.2 PUSH LOCATION TABLES AND NUMBERING

All exploratory and sampling push location activities will be tracked and documented on Field Activity Reports by referencing the Well identification (Well ID) number provided in Table 1. If the collection of a sample is attempted, a unique Well ID number will be used to track the push location on the Field Activity Report, and the sample will be identified with that Well ID number on the sample label and the shipping documentation. Each sample depth/location is identified as an offset from the exploratory push that identified the depth of interest (e.g., target sampling depth). That is, if, during the exploratory push, a zone of interest is identified at a listed coordinate position, the sampling push unique number is determined by combining the original identification number plus one (e.g., if a zone of interest is identified during pushing at location 1 [in Table 1, Well ID C7153] the Well ID of the subsequent sampling push is C 7154). The unique Well ID numbers for all of the exploratory push locations are listed, and unique sample push Well ID numbers have been assigned and reserved for use during the 241-S/SX investigations by the Hanford Site Well Coordinator. All sampling and exploration push activities will be documented in the Field Activity Reports and sampling chain of custody forms, and all exploration push locations will be identified prior to conducting the exploration push by use of global positioning survey equipment. Sampling location coordinates will be collected by use of global positioning survey equipment after conclusion of the sampling activity.

Table 1. Coordinates for Up to Five Exploration Direct Pushes.

No.	Well ID	Northing	Easting
1	C-7737	134319.21	566829.28
2	C-7739	134319.08	566857.61
3	C-7741	134338.36	566872.33
4	C-7743	134374.07	566869.53
5	C-7745	134374.07	566830.57

4.0 WORK TASKS

4.1 SITE SETUP

The push equipment will be mobilized and a controlled work area set up surrounding the preselected and marked locations (See Table 1 and Figure 1 above). A pre-survey of the tractor and equipment will be conducted (per tank farm procedure) prior to moving the equipment into the work zone. As noted above, ground-penetrating radar scans and as-built drawing reviews

and comparisons have been completed to properly select the push points. The equipment consists of a tractor-mounted mobile unit with a hydraulically powered hammer and mast system. Support equipment to be used during field activities will be mobilized into the work area as needed. A forklift will transport needed support equipment to and from the push locations. Tank farm personnel will provide support, as necessary, for guiding the equipment onto location and for subsequent movement of the unit to the listed push locations.

Tank farms radiological control technicians and nuclear chemical operators will be onsite to support work during activities that create potential personnel exposure. Contamination control measures will consist of laying spill protection material beneath the equipment (when required). Spill protection can consist of placement of rubber matting, felt and/or plastic sheeting on and around the direct push unit when necessary and prudent. Control of the work area and control of potential contamination are aided by restricting site entries by unnecessary personnel. Tank farms health physics personnel will provide direction and support to ensure radiological protection is maintained for all personnel associated with the work.

4.2 PUSH POINT CONTROL

During advancement of the push hole, casing (push rods) will be driven into the subsurface by use of the hydraulic hammer impact system. The push locations have been positioned to avoid impacting known/mapped structures. The mapped points will be investigated with all due caution and push advance rates and resistance will be carefully observed to preclude damage to any tank farm infrastructures should the as-built drawings be in error. If rod advance indicates that obstructions are present, push advance will stop, the direct push equipment and work area will be placed in safe condition and the Vadose Technical Lead (Harold Sydnor) or his designee and the tank farm shift supervisor will be notified. If during push operations the push point is deemed to be "at refusal" as defined by trained operators of the direct push equipment (refusal is defined as a minimum of one inch of advance per minute of impact operations), the depth will be noted in the Field Activity Report and the next sequential task as defined in Section 2, "Methodology," will be performed.

All activities using the hammer unit will conform to the manufacturer's operating manual and applicable procedures that relate to the specific phase of work. As the push rods are extracted from the exploratory and sampling holes, the onsite health physics technician will monitor for radiological contamination. WRPS tank-farm-qualified Nuclear Chemical Operators will perform any decontamination required. The sealing requirements for decommissioning of the push holes are defined in the appropriate sections of WAC 173-160.

4.3 GEOPHYSICAL LOGGING

At refusal or target total depth of the exploratory investigations, Pacific Northwest Geophysics will conduct logging operations to gather geophysical information. The following logging suites will be used.

1. Bismuth germanium oxide @ 100 seconds/0.5 ft.
2. Additional logging with the "Red" and/or "Green" Geiger/Muller equipment, if necessary, based on observed bismuth germanium oxide results.
3. Moisture logging.

Logging data will be collected from the total depth to surface. The logging analyst, Energy*Solutions* site personnel and the WRPS Vadose Technical Lead will review the field log data. Based on the log data sets, sampling intervals may be selected. Logging activities will be conducted in accordance with applicable Pacific Northwest Geophysics and Energy*Solutions* procedures and the Energy*Solutions* Quality Assurance and Data Management Plans.

5.0 SAMPLING

5.1 SAMPLING PROCESS

The sampling process will entail a multiple sampling methodology as described in Section 2.0.

After retrieving the sampler to surface, the sampling system will be disassembled and the stainless steel liners will be removed for packaging and shipment to the designated laboratory. If opening of the retrieved sampler would result in more than the allowable dose rates per the Radiation Work Permit, the samplers will be placed in transportation drums and either opened under controlled conditions at the designated laboratory or placed in a disposal container.

5.2 CLEANING

Quality control requires that all materials (e.g., sample liners, material retaining baskets [finger baskets], sample caps) used to perform sampling activities will be cleaned using U.S. Environmental Protection Agency guidelines/specifications as referenced in the RCRA. Cleaning and packaging of samplers, liners, etc. is the responsibility of the 222S Laboratory personnel. WRPS Nuclear Chemical Operators will transport the clean sampling equipment to the job site. Materials used for push advance purposes (e.g., push rods, tips) will be high-pressure washed using an approved non-phosphate cleaner. The push materials will be visibly free of dirt, grease and other possible contamination, which would potentially provide for cross-contamination of retrieved samples. After being cleaned, the materials will be protected from unwanted contamination from surface chemicals and push operation-related chemicals. This protection will be accomplished by covering the materials with plastic or other acceptable materials, if necessary. The cleaned and protected materials will be tracked by use of cleaning certification documentation.

5.3 RINSEATE SAMPLES

Field equipment rinseate blanks may be required for analysis purposes. This determination and collection of these rinseate samples is the responsibility of WRPS and their designated personnel.

5.4 EXPLORATION AND SAMPLING PUSH HOLE DECOMMISSIONING

Applicable WAC requirements contained in WAC 173-160 will be used to control and guide actions for decommissioning the sampling and exploratory probeholes. Each probe and sampling hole will be filled with bentonite, a bentonite slurry and/or grout (neat cement or cement-bentonite mixture) during the push rod extraction process. At the direction of the WRPS Vadose Technical Lead resistivity electrodes may be placed in selected exploration push boreholes. These electrodes will be sealed in place with sand and bentonite decommissioning materials and will have surface well head protection cemented in place, as per WAC 173-160 requirements.

6.0 ENVIRONMENTAL, SAFETY, AND HEALTH PROGRAM

The primary concern for Energy*Solutions* and the client (WRPS) is the safety of personnel assigned to perform activities related to the 241-S/SX Barrier investigation/characterization. These issues are addressed and all Energy*Solutions*, WRPS, and applicable *Occupational Safety and Health Act of 1970* safety and health requirements are applied and adhered to during the field operations. An activity-specific Job Hazard Analysis outlines the specific activity hazards and the mitigation methodologies. The documentation governing the operation of the direct push rig, sampling, and decommissioning activities (AHA-09-008, *S Barrier Direct Push Deployment Hydraulic Hammer Unit Operations,* Rev. 0, or most current revision) is included as a portion of the WRPS Tank Farm Work Package.

Energy*Solutions* Safety or WRPS Tank Farm Industrial Hygiene and Safety personnel, or both, will survey the job site for safety and health compliance. Energy*Solutions* personnel and safety representatives will provide onsite inspections and visits during drilling, sampling and decommissioning or construction activities to ensure compliance with the guidance outlined in the Activity Hazard Analysis. Routine inspection reports will be provided to the WRPS Vadose Technical Lead. Inspection will be conducted routinely, based on activities underway at the job site.

Energy*Solutions* subscribes to the Integrated Safety Management System and has implemented an Integrated Safety Management System approach into all of its work tasks. These requirements flow down, not only internally to Energy*Solutions* employees but also to Energy*Solutions* subcontractors. All of the following are in effect and will be observed, enforced and followed.

- Safety rules and procedures for safe job performance.
- Radiological Work Permit.
- WAC 173-160, as amended.
- *Occupational Safety and Health Act of 1970.*
- Client-identified standards.

These requirements are communicated to everyone associated with the project (visitors included) using the Energy*Solutions* Activity Hazard Analysis. The Activity Hazard Analysis is part of the Energy*Solutions* Environmental, Safety, and Health (ES&H) Program.

This program encompasses environment, safety and health, including pollution prevention and waste minimization. All work for this project will be analyzed in accordance with the five core functions of the Energy*Solutions* Integrated Safety Management System.

- Define the scope of work.
- Identify the work hazards and ES&H requirements.
- Analyze the work hazards and implement controls.
- Perform the work activity within the developed controls.
- Provide feedback on the adequacy of controls and safety management improvement.

The specific procedures used to accomplish these core functions are found in the Energy*Solutions* ES&H Program.

6.1 ENVIRONMENTAL, SAFETY, AND HEALTH PROGRAM KEY ELEMENTS

- Line management is responsible for the protection of employees, the public, and the environment.
- Clear and unambiguous lines of authority and responsibility for ensuring ES&H are established and maintained at all organizational levels.
- Personnel have "stop work" authority.
- Personnel possess the experience, knowledge, skills and abilities that are necessary to discharge their responsibilities.
- Resources are effectively allocated to address ES&H, programmatic, and operational considerations. Protecting employees, the public, and the environment is a priority whenever activities are planned and performed.
- Before work is performed, the associated hazards are evaluated and an agreed-upon set of ES&H standards and requirements is established which, if properly implemented, provides adequate assurance that employees, the public and the environment are protected from adverse consequences.
- Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and associated hazards. Emphasis should be on designing the work and/or controls to reduce or eliminate the hazards and to prevent accidents, unplanned releases, and exposures.

6.2 WRPS REQUIRED ENVIRONMENTAL, SAFETY, AND HEALTH ELEMENTS

WRPS has provided a Field Work Supervisor who is trained to the comprehensive list of WRPS, DOE and Hanford Site-specific procedures and requirements applicable to conducting work within the confines of the S/SX Tank Farm. While executing the work scope detailed in this DOW, Energy*Solutions* will comply with all applicable directives and orders resulting from WRPS requirements. The application of these requirements will be directed by the WRPS Field Work Supervisor.

7.0 QUALITY ASSURANCE

All work on the Hanford Site is subject to the requirements of DOE Order 5700.6C, *Quality Assurance*. A Quality Assurance program has been described in applicable sections of FS-WO-QAPP-001, *Federal Services Hanford Quality Assurance Program Plan*, and FSWO-QAP-001, *Quality Assurance Procedures*.

All work will be performed in accordance with approved procedures and this work plan.

8.0 REFERENCES

AHA-09-008, 2009, *S Barrier Direct Push Deployment Hydraulic Hammer Unit Operations,* Rev. 0, Energy*Solutions* Technical Services, Richland, Washington.

DOE Order 5700.6C, 1991, *Quality Assurance*, U.S. Department of Energy, Washington, D.C.

Ecology, EPA, and DOE, *Hanford Federal Facility Agreement and Consent Order*, 6 vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended.

FS-WO-QAPP-001, *Federal Services Hanford Quality Assurance Program Plan*, Energy*Solutions* Federal Services, Western Operations, Richland, Washington.

FSWO-QAP-001, *Quality Assurance Procedures*, Energy*Solutions* Federal Services, Western Operations, Richland, Washington.

Occupational Safety and Health Act of 1970, 29 USC 651 et seq.

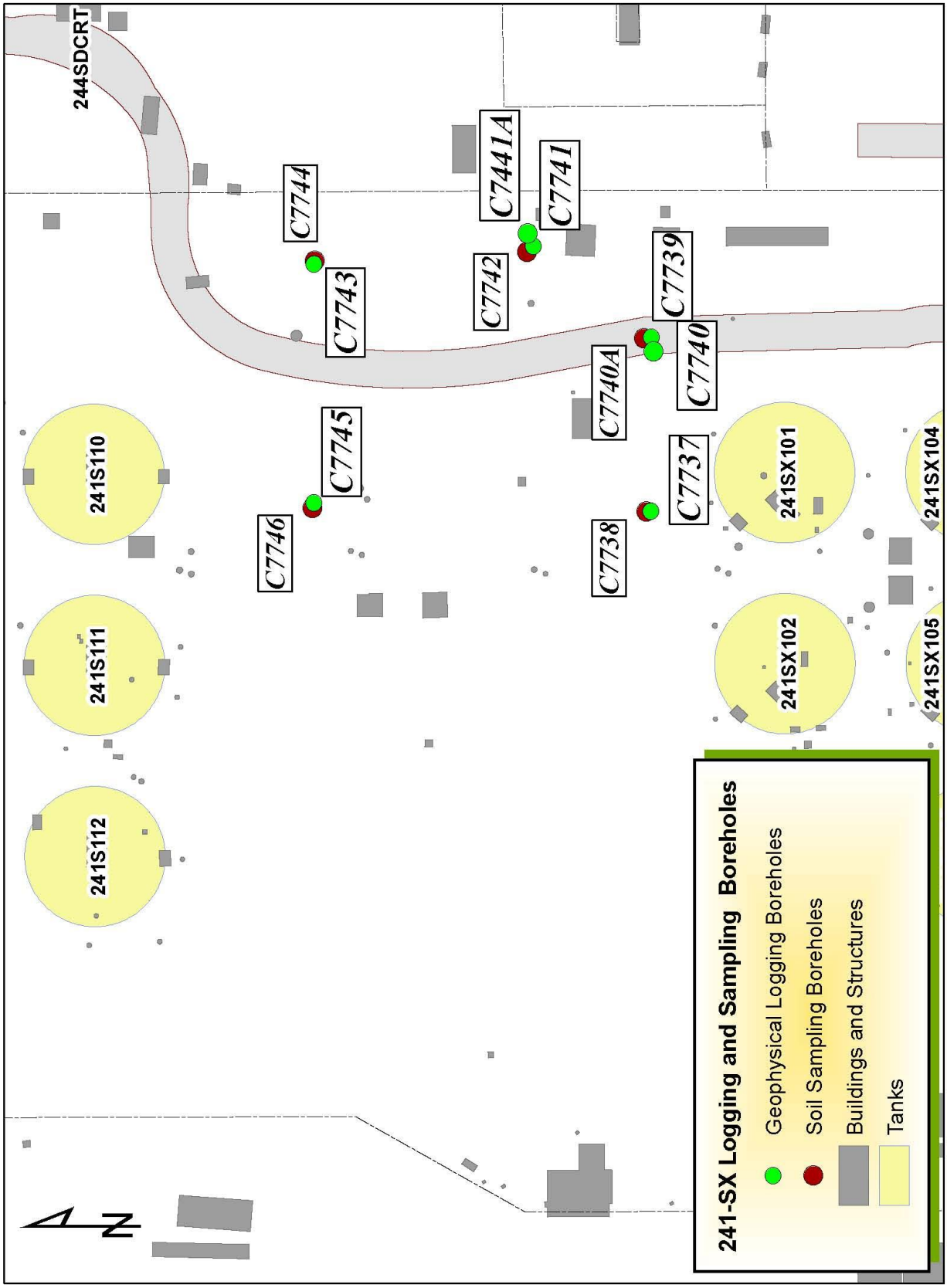
Resource Conservation and Recovery Act of 1976, 42 USC 6901 et seq.

WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," *Washington Administrative Code*, as amended.

APPENDIX B

GLOBAL POSITIONING SYSTEM COORDINATES AND MAP

This page intentionally left blank.


244SDCRT
C7744
C7441A
C7741
C7743
C7742
C7739
C7740
C7740A
C7745
C7746
C7737
C7738
241S110
241S111
241S112
241SX101
241SX102
241SX104
241SX105
241-SX Logging and Sampling Boreholes
Geophysical Logging Boreholes
Soil Sampling Boreholes
Buildings and Structures
Tanks
N

Name	Northing	Easting	Elevation	Feature Co	Description	Layer	Point Style	Horizontal Quality
GABLEMT	141087.6	579577.8	328.796			Default	<By Layer>	Survey quality
C7738	134320	566829.3	203.015			Default	<By Layer>	Survey quality
C7740A	134320.4	566857.4	203.101			Default	<By Layer>	Survey quality
C7742	134339.4	566871.5	203.078			Default	<By Layer>	Survey quality
C7744	134373.9	566870.1	202.889			Default	<By Layer>	Survey quality
C7746	134374.2	566829.9	203.448			Default	<By Layer>	Survey quality
C7741A	134339.1	566872.3	203.183			Default	<By Layer>	Survey quality
C7740	134319.7	566857.3	203.086			Default	<By Layer>	Survey quality
C7745	134374	566830.7	203.469			Default	<By Layer>	Survey quality
C7743	134374	566869.6	202.974			Default	<By Layer>	Survey quality
C7739	134319.2	566857.6	203.151			Default	<By Layer>	Survey quality
C7737	134319.3	566829.3	203.073			Default	<By Layer>	Survey quality
C7741	134338.3	566872.4	203.103			Default	<By Layer>	Survey quality

APPENDIX C

DRILLING AND SAMPLING DAILY WORK RECORDS

This page intentionally left blank.

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Move HHUXL #3 and support equipment to probe boring #C7741 and set-up. **DATE:** 02-03-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 01

START CARD NO. **DECOMMISSION NO.** **RWP:** CO-541, Rev. 4 **AHA-**

SAMPLING SUMMARY **SITE/EQUIPMENT INSPECTION:** *Yes* (No) *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s *Interval* *%*

1. N/A
2.
3.
4.

BOREHOLE SUMMARY

Borehole # C7741 *Tubing* (2 1/2") *@* G.S. *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ___

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ___

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: CRANE & RIGGING REVIEW FOR HAMMER.
0625	TRAVEL TO MOSAY "C" FARM.
0700	ONSITE AT MOSAY. STANDBY FOR KICK-OFF FOR "S" FARM.
1100	LUNCH.
1130	TRAVEL TO "S" FARM. STANDBY FOR KICK-OFF.
1300	KICK-OFF FOR "S" FARM BY B. CLARK-WRPS.
1420	STANDBY TO ACCESS FARM. TRAVEL TO OFFICE. COMPLETE PAPERWORK AND
—	TIME CARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Weakley, Walkup
NCO: SEIDEL, WILLIAMS
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 45 F, partly cloudy.

DOWNTIME: 9 HRS. - PRE-JOB

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION:

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 02/04/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Move HHUXL #3 and support equipment to probe boring #C7741 and set-up. **DATE:** 02-04-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN- 3906 **U-DIG #:** 10001270 **REPORT #:** 02

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 4 **AHA-**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No

HHU CASE#1 *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7741 *Tubing* (2½") @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	safety meeting at office, subject = communication in tank farms
0620	Travel to 'S' farm
0700	on site at 'S' farm, Pre-job meeting
0730	gather equipt. to enter farm and set up, inspect rig.
0800	Entered farm, moved Rig and equipment to C7741
\	set up 3½' west of orginal location, per WRPS instruction,
\	moved pipe to location, set up control zone around Rig,
\	moved in generators + air sampler housings, survey out
10:00	stand by for air samplers + change to RWP for
\	alpha survey requirements. clean-up + put away materials
\	from C-farm while standing by.
12:00	Lunch
12:30	Continue stand-by for air samplers, continue clean-up,
\	travel to office, paperwork, time cards.
15:30	End of shift
	NA

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Weakley, Olson
NCO: Siedell, Williams
HPT: Young, Witus
FWS: Clark

WEATHER: 48 F, partly cloudy.

DOWNTIME: 5 hr for air samplers.

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 02/04/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin 2.5" exploratory boring at #C7741 | **DATE:** 02-08-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 03

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 5 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7741A *Tubing* (2.5") @ G.S. *to* 16.0 *ft bgs; S.U.* 2.3'
Borehole # C7741A *Tubing* (2.5") @ 16.0' *to* G.S. *ft bgs; S.U.* N/A
Borehole # C7741 *Tubing* (2.5") @ G.S. *to* 54.0 *ft bgs; S.U.* 4.3'

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: HEARING PROTECTION.
0630	TRAVEL TO SMART AND ACE UNDER RWP CO-541, REV. 5.
0705	TRAVEL TO "S" TANK FARM.
0715	ONSITE AT "S" FARM. STANDBY FOR AIR SAMPLERS AND PRE-JOB
0830	PRE-JOB BY B. CLARK - WRPS AIR SAMPLERS ALSO ON SITE.
0845	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0910	DRIVE 2.5" PIPE WITH KNOCK-OUT TIP FROM G.S. TO 16.0' BGS, MET REFUSAL.
—	EXITED FARM. NOTIFIED WRPS. PER H. SYDNOR 16.0' PUSH IS TO BE DECOMMISIONED
—	AND DESIGNATION CHANGED TO #C7741A. HHUXL IS TO BE MOVED ONE METER
—	TO THE WEST AND ATTEMPTED AGAIN. PUSH DESIGNATION WILL BE #C7741.
1000	DRESS AND ENTER FARM. BACK-FILL 2.5" CASING FROM 16.0' BGS TO G.S. AND
—	DECOMMISSION #C7741A.
1030	MOVED HHUXL AND SUPPORT EQUIPMENT ~1.0 METER WEST AND SET-UP ON #C7741.
1050	DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM G.S. TO 24.0' BGS. EXITED FARM.
1230	LUNCH.
1300	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 24.0' BGS
—	TO 54.0' BGS, SECURED SITE AND EXITED FARM.
1435	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: AMOS/1224
ES SUPPORT: WALKUP, REPKO
NCO: WILLIAMS
HPT: YOUNG, MINCEY
FWS: CLARK

WEATHER: 49 F, partly cloudy. WITH SOME FOG

DOWNTIME: 1½ HRS. - AIR SAMPLERS AND PRE JOB

DISCARDED ITEMS:
1- SK. BENTONITE
1- removeable drive point

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. D. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark D. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 02/09/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue pushing 2.5" casing at exploratory boring #C7741 | **DATE:** 02-09-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 | **REPORT #:** 04

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 5 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.		
2.	N/A	
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7741 Tubing (2.5") @ 54.0' to 156.0' bgs; S.U. 4.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: WEIGHT LIMITS ON LIFTING.
0605	FUEL P.U. AND TRAVEL TO "S" TANK FARM.
0643	ONSITE AT "S" FARM. STANDBY FOR PRE-JOB
0745	PRE-JOB BY B. CLARK - WRPS.
0755	DRESS AND ENTER FARM. FUEL GENERATORS. INSPECT AND WARM HHUXL.
—	NO PROBLEMS NOTED.
0742	DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 54.0' BGS TO 90.0' BGS.
—	EXITED FARM TO LET CROSSOVER SUB. AND DRIVE HEAD COOL.
0910	BREAK.
0930	DRESS AND ENTER FARM. DROVE 2.5" CASING FROM 90.0' BGS TO 140.0' BGS.
—	STOPPED ONE TIME FOR ~ 20 MINUTES TO LET CROSSOVER SUB. AND
—	DRIVEHEAD COOL. EXITED FARM FOR LUNCH.
1105	LUNCH
1135	DRESS AND ENTER FARM. DROVE 2.5" CASING FROM 140.0' BGS TO REFUSAL
—	AT 156.0' BGS. STOPPED 2 TIMES FOR ~ 20 MINUTES TO LET CROSSOVER SUB.
—	AND DRIVEHEAD COOL. TOWERED DOWN AND BACKED HHUXL OFF HOLE.
—	SECURED SITE AND EXITED FARM.
1400	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT. NOTE: hydraulic hose fitting is under repair.
	N/A

OPERATOR/LICENSE: AMOS/1224
ES SUPPORT: WALKUP, REPKO
NCO: SEIDEL, WILLIAMS
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 47 F, partly cloudy, early morning fog

DOWNTIME: 1/2 HR.: PRE-JOB

DISCARDED ITEMS:
28 - LYNCH PINS
1 - 36" PIPE JAW
1 - 36" PIPE HEEL

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mark D. Walkup

REVIEWED BY: D. E. Sicoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Sicoglie **DATE:** 02/10/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin driving 2.5" casing at exploratory boring #C7739 | **DATE:** 02-10-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 05

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 5 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7739 *Tubing* (2.5") @ G.S. *to* 103.0 *ft bgs; S.U.* 7.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7741	156.0' - 94.0'	Gamma
2. N/A		
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: HHU CONTROL PANELS.
0620	TRAVEL TO SHOWER AND PICK UP M. WEAKLEY.
0655	TRAVEL TO "S" FARM.
0715	ONSITE AT "S" FARM. STANDBY FOR PRE-JOB.
0725	PRE-JOB BY B. CLARK-WRPS.
0740	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL.
0800	MOBILIZE HHUXL AND SUPPORT EQUIPMENT TO #C7739 AND SET-UP. NO
—	FORKLIFT AVAILABLE TO MOVE 2.5" PIPE. WILL MOVE BY HAND.
0900	UNABLE TO BEGIN PUSHING 2.5" CASING. STANDBY FOR NEW HYDRAULIC HOSE TO
—	REPLACE DAMAGED HOSE FROM PREVIOUS DAY. PNG PERFORMING GAMMA LOGGING
—	IN #C7741. EXITED FARM.
1000	DRESS AND ENTER FARM. REPLACE HYDRAULIC HOSE ON HHUXL.
1035	DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM G.S. TO 103.0' BGS. PNG COMPLETED
—	SPECTRAL GAMMA LOGGING FROM 156.0' BGS TO 94.0' BGS. SECURED SITE
—	AND EXITED FARM.
1230	LUNCH.
1300	TRAVEL TO SHOWER AND ATTEND MANDANTORY TANK FARM MEETING.
1415	TRAVEL TO OFFICE. COMPLETE PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Walkup, Weakley
NCO: WILLIAMS, SEIDEL
HPT: YOUNG, BOYDING
FWS: Clark PRICE/PNG

WEATHER: 49 F, partly cloudy, winds 5-10 mph

DOWNTIME: 10 mins.: PRE-JOB
1 Hr.: HYDRAULIC HOSE

DISCARDED ITEMS:
3 - LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: David E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 02/11/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Standby for entire shift. No NCO's or FWS			**DATE:** 02-11-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906	**U-DIG #:** 10001270	**REPORT #:** 06

START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 5 AHA-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** *Yes* (No)	*HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

Sample #'s	*Interval*	*%*
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7739 *Tubing* (2.5") *@* 63.0' *to* N/A *ft bgs; S.U.* 7.5'

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1. C7741	94.0' - N/A	GAMMA
2. N/A		
3. N/A		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Teamwork, trust and respect for co-workers.**
0730	All hands meeting at Shilo Inn, Richland, WA.
0930	Standby. No NCO's or FWS. (Training)
1100	Lunch.
1130	Standby. No NCO's or FWS. (Training) Completed paperwork and timecard at office.
1530	End of shift..

N/A

OPERATOR/LICENSE: Amos/1224 *ES SUPPORT: Walkup, Weakley* *NCO:N/A* *HPT: N/A* *FWS: N/A*	**WEATHER:** 47 F, cloudy with a good chance of rain. Winds ~15 mph. **DOWNTIME:** 9 HRS: NCO'S AND FWS	**DISCARDED ITEMS:** N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup	**REVIEWED BY:** D. E. Skoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Mark D. Walkup	**SIGNATURE:** David E Skoglie **DATE:** 02/12/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue pushing 2.5" casing at #C7739 | **DATE:** 02-12-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 07

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 5 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** *Yes No* | *HHU CASE#1 HHU CAT #2 HHUXL#3*

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7739 *Tubing* (2.5") @ 63.0' *to* 156.0 *ft bgs; S.U.* 2.3

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7741	94.0' - 14.0'	SG
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office
0615	Head to 200 West for prejob
0645	on site (Bill Clark notified us of new RWP Rev 6. Go to Aces station to Ace in
0730	AT S Farm, waiting for RCT's
0800	Prejob meeting (discussed RWP Rev 6)
0815	Dress in S Farm (Fuel Rig & Generator-s)
0830	Begin drilling
1030	Come out of farm Let head cool down
1045	Lunch
1115	Go back in Farm
1130	Begin drilling
1316	Refusal at 156' with 2.3 STK UP.
1330	Exit Zone, clean up site, Head to office
1430	End shift

N/A

OPERATOR/LICENSE: Repko/3005
ES SUPPORT: Amos, Weakley, Repko
NCO: Steve Williams, Greg Siedel
HPT: Paul Templeton, Bill Bernard
FWS: Bill Clark

WEATHER: 49 F, cloudy with a slight chance of rain.

DOWNTIME: .5 hrs

DISCARDED ITEMS: 15 Lynch Pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Olin Amos
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Olin A. Amos

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dave Skoglie **DATE:** 2/12/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin pushing 2.5" casing at #C7737. Complete spectral gamma logging at #C7741 | **DATE:** 02-16-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 08

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7737 *Tubing* (2 1/2") @ G.S. *to* 84.0 *ft bgs; S.U.* 2.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7741	14.0'-G.S.	GAMMA
2. C7739	156.0' - 95.0'	GAMMA
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: STRONG, COMPOSITE WORK TEAMS.
0610	TRAVEL TO SMART AND ACE UNDER RWP CO-541, REV. 6.
0645	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" FARM. STANDBY FOR WORK PACKAGE AND PRE-JOB.
0845	PRE-JOB BY B. CLARK. - WRPS.
0830	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
—	MOVE HHUXL AND SUPPORT EQUIPMENT TO C7737 AND SET-UP. (NO FORK-
—	LIFT AVAILABLE TO MOVE 2.5" CASING. CASING WAS MOVED BY HAND.) PNG
—	COMPLETING SPECTRAL GAMMA LOGGING IN #C7741.
0945	DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM G.S. TO 40.0' BGS. EXITED
—	FARM FOR LUNCH.
1030	LUNCH.
1120	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM
—	40.0' BGS TO 72.0' BGS. PNG COMPLETED SPECTRAL GAMMA LOGGING IN #C7741
—	AND BEGAN LOGGING IN #C7739. EXITED FARM TO LET CROSSOVER SUB. AND
—	DRIVE HEAD COOL.
1235	BREAK.
1300	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM
—	72.0' BGS TO 84.0' BGS. SECURED SITE AND EXITED FARM.
1440	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: AMOS/1224
ES SUPPORT: WALKUP, WEAKLEY
NCO: SEIDEL
HPT: WIDDIS, YOUNG
FWS: CLARK PNG-PRICE

WEATHER: 52 F, cloudy with a lot of rain!

DOWNTIME: 1 1/4 HRS.: WORK PACKAGE AND PRE-JOB

DISCARDED ITEMS:
1 - 2 1/2" DRIVE HEAD
15 - LYNCH PINS
2 - NYLATRON DOUGHNUTS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 02/17/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 2

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue pushing 2.5" casing at #C7737. Continue spectral gamma logging at #C7739

DATE: 02-17-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 09

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. N/A		
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7737 *Tubing* (2 1/2") @ 84.0' to 167.5 ft bgs; *S.U.* 2.8'

Borehole # N/A *Tubing* ( ) @ to ft bgs; *S.U.* ____

Borehole # N/A *Tubing* ( ) @ to ft bgs; *S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7739	95.0'-- 55	
2. N/A		
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: HOME USE OF VEHICLE RAMPS.
0615	TRAVEL TO "S" TANK FARM.
0645	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0705	PRE-JOB BY B. CLARK - WRPS.
0715	DRESS AND ENTER FARM, FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
—	FUELED GENERATORS. RNG PERFORMING SPECTRAL GAMMA LOGGING AT #C7739.
0740	DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 84.0' BGS TO 92.0' BGS. CROSSOVER
—	SUB. AND DRIVE HEAD ARE HOT. EXITED FARM TO LET COOL.
0820	LET DRIVE HEAD COOL.
0840	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 92.0' BGS
—	TO 108.0' BGS. RNG EXIT FARM. GAMMA LOGGING CONTINUING IN #C7739. RNG
—	OFFSITE AT 0910 HRS. TO OBTAIN PARTS TO START MOISTURE LOGGING IN #C7741.
—	CROSSOVER SUB. AND DRIVE HEAD ARE HOT. EXITED FARM FOR LUNCH.
1000	LUNCH.
1030	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 108.0' BGS TO
—	150.0' BGS. CROSSOVER SUB. AND DRIVE HEAD ARE HOT. EXITED FARM TO LET COOL.
1150	LET DRIVE HEAD COOL. RNG BACK ONSITE AT 1204 HRS.
1215	DRESS AND ENTER FARM. DROVE 2.5" CASING WITH KNOCK-OUT TIP FROM 150.0' BGS TO
—	REFUSAL AT ~~168.0~~ 167.5' BGS. RNG COMPLETED SPECTRAL GAMMA LOGGING IN #C7739 FROM
—	95.0' BGS TO 55.0'. NO MOISTURE LOGGING WAS COMPLETED BY RNG IN #C7741.
—	SECURED SITE AND EXITED FARM. (NOTE ~2.0' OF FILL IN BOTTOM OF CASING)
1420	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT. NOTE: SEE PAGE #2
	N/A

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: *Walkup, Weakley*
NCO: WILLIAMS, SERDEL
HPT: YOUNG, WIDDIS
FWS: CLARK
RNG: PRICE

WEATHER: 56 F, cloudy in the a.m., clearing in the afternoon

DOWNTIME: 20 MINS.: PRE-JOB

DISCARDED ITEMS: 17- LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mike W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 2/18/10

10/06/09 Rev 1

ENERGYSOLUTIONS

DAILY WORK RECORD – CONTINUATION PAGE

Page 2 of 2

Date	Boring #	Continuation of Report No.
02-17-10	C7737	09

TIME	WORK SUMMARY
N/A	NOTE: PNG went offsite at 0910 Hrs. to obtain additional equipment that was forgotten and was needed to run both the gamma logging equipment and the moisture logging equipment at the same time. While they were gone their gamma logging equipment was left running. Upon returning to the site at 1204 Hrs. PNG made an entry into the farm to check their equipment. It was discovered that their equipment had failed after only logging one foot of hole. The equipment was restarted and logging activities resumed.

N/A

Report By	M. W. WALKER	Reviewed By	D.E. SKoglie		
Title	ES Technical Preparer	Title	ES Technical Reviewer	Date	2/18/2010
Signature		Signature	David E. Skoglie		100609 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue spectral gamma logging at #C7739, begin moisture logging at #c7741 | **DATE:** 02-18-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 10

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. N/A		
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No | *HHU CASE#1* *HHU CAT #2* HHUXL#3

BOREHOLE SUMMARY

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____
Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____
Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7739	55' TO 0'	BGO
2. C7741	155' TO 0.5'	MOIST.
3. C7737	166' TO 148'	BGO

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: DRIVING, INTERSECTION SAFETY.
0620	TRAVEL TO "S" TANK FARM
0650	ARRIVED ON SITE, PRE-JOB BY B. CLARK WRPS.
—	PNG: R. PRICE WILL BE STARTING MOISTURE LOGGING @ C7737
—	AND CONTINUE BGO. LOGGING ON C7739
0730	PNG CHECKING WIRELESS CONNECTION IN FARM.
—	ES CREW ON STANBY WAITING FOR LOGGING RESULTS
0805	PNG. R. PRICE EXITED FARM, AND LEAVING S. FARM W/ HPT
—	TO PICKUP SOURCE FOR MOISTURE LOGGING
—	R. PRICE & HPT BACK ON SITE W/ SOURCE FOR MOISTURE
—	LOGGING. ES CREW PREPING FOR PROBE INSTALLATION
0900	R. PRICE ENTERING FARM W/SOURCE TO START
—	MOISTURE LOGGING ON C7737.
1145	LOGGING COMPLETED BGO (GAMMA) @ 7739
—	MOISTURE LOGGING ACTIVITIES MOVED FROM C7737 TO C7741
1220	STARTED BGO (GAMMA) LOGGING ACTIVITIES ON C7737
1400	MOISTURE LOGGING COMPLETED ON C7741 155' bgs TO 0.5 (GS.)
-	BGO (GAMMA) LOGGING ON C7737 166' bgs TO 148' bgs
1415	R. PRICE PNG: EXIT FARM
1420	SECURE SITE.
1430	LEAVING SITE FOR ENW THEN OFFICE.
1510	ARRIVED AT OFFICE.
1530	END OF SHIFT

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Ehrgott, Weakley
NCO: WILLIAMS, SEIDEL
HPT: YOUNG, WIDDIS
FWS: CLARK
PNG: R. PRICE

WEATHER: 51 F, mostly sunny with winds moderate at 5-10 mph

DOWNTIME: ES CREW ON STANDby WAITING FOR LOGGING RESULTS

DISCARDED ITEMS: NONE

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRGOTT
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mike Ehrgott

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Daniel E. Skoglie **DATE:** 2/18/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue spectral gamma logging at #C7737, continue moisture logging at #C7739 | **DATE:** 02-22-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 11

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7741 Tubing (2.5") @ 156.0' to 152.0 ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7737	148' - 58'	BGO
2. C7739	155' - 17'	MOIST.
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: DRIVING SAFETY.
0615	TRAVEL TO SHARP AND ACE UNDER RWP CO-541, REV. 6.
0645	TRAVEL TO "S" TANK FARM.
0710	ONSITE AT "S" FARM. STANDBY FOR PRE-JOB.
0720	PRE-JOB BY B. CLARK - WRPS.
0740	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
—	FUEL PORTABLE GENERATORS. RIG BGO LOGGING AT #C7737.
0800	MOVE HHUXL AND SUPPORT EQUIPMENT TO #C7741 AND SET-UP. EXITED FARM.
0840	STANDBY FOR WRPS TO MAKE DECISION ON PROBE INSTALLATION DEPTH. RIG AND
—	HPT OFFSITE AT 1040 HRS. TO GET SOURCE FOR MOISTURE LOGGING.
—	BACK ONSITE AT 1100 HRS. RIG PERFORMING MOISTURE LOGGING AT #C7739
1030	LUNCH.
1100	STANDBY FOR HPT'S TO RETURN FROM LUNCH. DIRECTION HAS BEEN RECEIVED
—	FROM WRPS TO INSTALL BOTTOM OF PROBE AT 153.0' BGS.
1300	HPT'S ONSITE. DRESS AND ENTER FARM. TAGGED BOTTOM OF HOLE. ~1.0' OF
—	MATERIAL IS IN PIPE. ATTEMPTED TO KNOCK OUT TIP WITH KNOCKER BAR. UNABLE
—	TO KNOCK TIP OUT. ONE 4' PIECE OF CASING (TOP JOINT) WAS CONTAMINATED
—	WITH 700 CPM. CASING WAS SLEEVED IN YELLOW PLASTIC AND SET ASIDE.
—	SECURED SITE AND EXITED FARM.
1445	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Walkup, Weakley
NCO: WILLIAMS.
HPT: WIDDIS, YOUNG
FWS: CLARK RIG: PRICE

WEATHER: 50 F, mostly sunny.

DOWNTIME: 3 HRS. SORIN.: HPT'S

DISCARDED ITEMS: 1 - 4' BOX BY PIN 2.5" ROD.

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David Skoglie **DATE:** 02/23/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue spectral gamma logging at #C7737, continue moisture logging at #C7739, begin decommissioning and probe installation at #C7741

DATE: 02-23-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 12

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7741 Tubing (2 1/2") @ 152.0' to G.S. ft bgs; S.U. N/A

Borehole # C7741 Tubing (2 1/2") @ G.S. to 152.0 ft bgs; S.U. 2.5'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7737	58.0'- G.S.	BGO
2. C7739	17.0'- G.S.	Mosture
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: ROAD RAGE.
0615	TRAVEL TO "S" TANK FARM.
0645	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0740	PRE-JOB BY B. CLARK - WRPS.
0800	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
—	FUEL PORTABLE GENERATORS. BNG COMPLETING BGO LOGGING AT #C7737 AND
—	MOISTURE LOGGING AT #C7739.
0820	BACK-PULLED 2.5" PIPE ~6.0' AND ATTEMPTED UNSUCCESFULLY TO KNOCK
—	TIP OUT AGAIN. DECISION WAS MADE TO PULL 2.5" PIPE OUT AND RE-ENTER
—	SAME BORING WITH CLEAN PIPE AND TIP.
0840	BEGAN BACK-PULLING 2.5" PIPE FROM ~151.6' BGS TO G.S. (KNOCK-OUT
—	TIP WAS STILL ATTACHED TO 2' BOX BY BOX) EXITED FARM.
1040	LUNCH.
1110	DRESS AND ENTER FARM. RUN 2.5" PIPE WITH NEW KNOCK-OUT TIP FROM G.S.
—	TO 76.0' BGS EXITED FARM TO LET CROSSOVER SUB. AND DRILL HEAD COOL.
1240	BREAK. LET EQUIPMENT COOL.
1310	DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 76.0' BGS
—	TO 80.0' BGS. TAGGED DEPTH TO BOTTOM AT 80.0' BGS. DROVE 2.5" PIPE WITH
—	KNOCK-OUT TIP FROM 80.0' BGS TO 152.0' BGS. SECURED SITE FOR END
—	OF SHIFT AND EXITED FARM.
1445	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Passey, Weakley
NCO: SEIDEL, WILLIAMS
HPT: WIDDIS, YOUNG
FWS: CLARK BNG: PRICE

WEATHER: 52 F, partly cloudy.

DOWNTIME: 55 MINS.: PRE-JOB

DISCARDED ITEMS:
1- KNOCK-OUT TIP
2- NYLATRON DOUGHNUTS
2- LYNCH PINS
1- PIN

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mark W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** ____

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Probe installation and decommissioning at #C7741 and moisture logging at #C7737 | **DATE:** 02-24-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 13

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7741 *Tubing* (2 1/2") @ 152.0' *to* 65 *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7737	165' - 0.5'	Moisture
2. N/A		
3. N/A		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: DON'T TAKE CHANCES AT WORK OR HOME.
0645	TRAVEL TO "S" TANK FARM.
0715	ONSITE AT "S" TANK FARM.
0720	PRE-JOB BY B. CLARK-WRPS.
0740	RNG OFFSITE WITH HPT TO GET SOURCE FOR MOISTURE LOGGING #C7737.
0750	ESES DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. HOUR METER
—	NOT WORKING, NO OTHER PROBLEMS NOTED. FUEL PORTABLE GENERATORS.
0805	RNG ONSITE WITH SOURCE. DRESS AND ENTER SITE. BEGIN MOISTURE LOGGING
—	ON #C7737.
0815	BACK-PULL 2.5" PIPE, DECOMMISSION AND COMPLETE MULTI-LEVEL PROBE
—	INSTALLATION FROM 152.0' BGS TO 32.0' BGS. SEE ATTACHED PAPERWORK FOR
—	PROBE INSTALLATION DEPTHS AND BENTONITE, SAND AND SALT INTERVALS.
—	EXITED FARM FOR LUNCH.
1135	LUNCH
1205	STANDBY FOR HPT'S TO RETURN FROM LUNCH.
1245	HPT'S ONSITE. DRESS AND ENTER FARM. BACK-PULL 2.5" PIPE, DECOMMISSION
—	AND COMPLETE MULTI-LEVEL PROBE INSTALLATION FROM 32.0' BGS TO 65.
—	SEE ATTACHED PAPERWORK FOR PROBE INSTALLATION DEPTHS AND BENTONITE,
—	SAND AND SALT INTERVALS. RNG COMPLETED MOISTURE LOGGING AT #C7737 AND
—	HAD ALL SUPPORT EQUIPMENT SURVEYED OUT OF FARM. SECURED SITE FOR END
—	OF SHIFT AND EXITED FARM.
1430	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Passey, Walkup
NCO: SEIDEL, WILLIAMS
HPT: YOUNG, LOVDAIS
FWS: CLARK
RNG: PRICE

WEATHER: 53 F, rainy day and breezy, winds 15-20 mph.

DOWNTIME: 40 MINS.: HPT'S

DISCARDED ITEMS:
1: KNOCK-OUT TIP
8: SKS. BENTONITE
4: SKS. SAND
3/4: CONTAINERS SALT
1: 160' MULTI-LEVEL PROBE

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 2/25/10

10/06/09 Rev 1

200 FT MULTI LEVEL RESISTIVITY PROBE WORK SHEET BOREHOLE NO: C-7741

DIMENSIONS		PRELIMINARY AS-BUILT		CONSTRUCTION MATERIAL/TAG	
PLANNED		ACTUAL		MATERIAL	TAG
0 ft				SURFACE PROTECTION @ 1 FT BGS	
				Bentonite from ____ to ____	☐
- 20 ft -	-	ft -		Sand from ____ to ____	☐
				Bentonite from ____ to ____	☐
- 40 ft -	-	ft -		Sand from ____ to ____	☐
				Bentonite from 1 to 29.5	✓
- 60 ft -	33	ft -	40 / 2	Sand from 29.5 to 35	✓
				Bentonite from 35 to 49.5	✓
- 80 ft -	53	ft -	18 / 2	Sand from 49.5 to 55	✓
				Bentonite from 55 to 69.5	✓
- 100 ft -	73	ft -	18 / 2	Sand from 69.5 to 75	✓
				Bentonite from 75 to 89.5	✓
- 120 ft -	93	ft -	18 / 2	Sand from 89.5 to 95	✓
				Bentonite from 95 to 109.5	✓
- 140 ft -	113	ft -	18 / 2	Sand from 109.5 to 115	✓
				Bentonite from 115 to 129.5	✓
- 160 ft -	133	ft -	18 / 2	Sand from 129.5 to 135	✓
				Bentonite from 135 to 148.5	✓
- 180 ft -	Probe = 152'	ft -	17.5 / 1.5	Sand from 148.5 to 154	✓
				Bentonite from ____ to ____	☐
				TOTAL DEPTH ____ ft bgs	

NOTE 1: Resistivity Probe measurements are to the bottom of the probe.

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Probe installation and decommissioning at #C7739 | **DATE:** 02-25-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 14

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7739 Tubing (2 1/2") @ 156.0' to GS ft bgs; S.U. N/A

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: WORK SAFELY, GO HOME SAFE.
0640	TRAVEL TO "S" TANK FARM.
0640	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0700	PRE-JOB BY B. CLARK - WRPS.
0715	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0730	MOVE HHUXL AND SUPPORT EQUIPMENT TO # C7739 AND SET-UP.
0810	BACK-PULLED 2.5" PIPE TO 152.0' BGS. SUCCESSFULLY KNOCKED OUT TIP WITH
—	KNOCKER BAR. BACK-PULL, DECOMMISSION AND COMPLETE MULTI-LEVEL
—	PROBE INSTALLATION FROM 152.0' BGS TO 129.0' BGS. SEE ATTACHED PAPERWORK
—	FOR PROBE INSTALLATION DEPTHS AND BENTONITE, SAND AND SALT INTERVALS.
—	EXITED FARM.
0900	BREAK
0915	DRESS AND ENTER FARM. BACK-PULL 2.5" PIPE, DECOMMISSION AND COMPLETE MULTI-
—	LEVEL PROBE INSTALLATION FROM 129.0' BGS TO 48.0' BGS. SEE ATTACHED PAPERWORK
—	FOR PROBE INSTALLATION DEPTHS AND BENTONITE, SAND AND SALT INTERVALS.
—	EXIT FARM FOR LUNCH
1100	LUNCH.
1130	STANDBY FOR HPT'S.
1215	HPT'S ONSITE. DRESS AND ENTER FARM. BACK-PULL 2.5" PIPE, DECOMMISSION AND
—	COMPLETE MULTI-LEVEL PROBE INSTALLATION FROM 48.0' BGS TO GS. SEE ATTACHED
—	PAPERWORK FOR PROBE INSTALLATION DEPTHS AND BENTONITE, SAND AND SALT INTERVALS.
—	SECURED SITE FOR END OF SHIFT AND EXITED FARM.
1430	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
1530	END OF SHIFT.

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Weakley, Walkup
NCO: SEIBEL, WILLIAMS
HPT: YOUNG, HIBBIS
FWS: CLARK

WEATHER: 57 F, partly cloudy and winds variable at 5-15 mph.

DOWNTIME:
20 MINS.: PRE-JOB
3/4 HR.: HPT'S

DISCARDED ITEMS:
1: KNOCK-OUT TIP
1: SKS. BENTONITE
1: SKS. SAND
3/4: CONTAINERS SALT
1: 160' MULTI-LEVEL PROBE

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dan Skoglie
DATE: 2/26/10

10/06/09 Rev 1

Probe #1 (160')

200 FT MULTI LEVEL RESISTIVITY PROBE WORK SHEET

BOREHOLE NO: C

C7799

DIMENSIONS	PRELIMINARY AS-BUILT	CONSTRUC MATERIA	
PLANNED	ACTUAL	MATERIA	
0 ft		SURFACE PROTECTION @ 1 FT BG	
		Bentonite from ____ to ____	☐
- 20 ft -	- ft - NA	Sand from ____ to ____	☐
		Bentonite from ____ to ____	☐
- 40 ft -	- ft - NA	Sand from ____ to ____	☐
	40'	Bentonite from 0 to 29½	✓
- 60 ft -	- 33 ft - 2	Sand from 29½ to 35	✓
	18	Bentonite from 35 to 49½	✓
- 80 ft -	- 53 ft - 2	Sand from 49½ to 55	✓
	18	Bentonite from 55 to 69½	✓
- 100 ft -	- 73 ft - 2	Sand from 69½ to 75	✓
	18	Bentonite from 75 to 89½	✓
- 120 ft -	- 93 ft - 2	Sand from 89½ to 95	✓
	18	Bentonite from 95 to 109½	✓
- 140 ft -	- 113 ft - 2	Sand from 109½ to 115	✓
	18	Bentonite from 115 to 129½	✓
- 160 ft -	- 133 ft - 2.0	Sand from 129½ to 135	✓
	17.7	Bentonite from 135 to 148½	✓
- 180 ft - PROBE	- 152 ft - 1.5	Sand from 148½ to 154	✓
	Total length = 161.2		
		Bentonite from ____ to ____	☐
		TOTAL DEPTH ____ ft bgs	

NOTE 1: Resistivity Probe measurements are to the bottom of the probe.

DATE 11/18 INITIALS K-D / M.R.

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Probe installation and decommissioning at #C7737 | **DATE:** 02-26-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 15

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7737 Tubing (2½") @ 168 to 0 ft bgs; S.U. 2.3

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0630	AT office hold safety meeting, disscussed safety inspections
0638	at S Farm waiting for prejob, Annette onsite for safety inspection
0725	Site down due to rain, RCT's can't survey material until rain stops. Annette leaves site
1100	Lunch
1130	waiting on rain
1430	End of shift

NA

OPERATOR/LICENSE: Amos/1224
ES SUPPORT: Weakley, Passey
NCO: Stone Williams
HPT: 0
FWS: Clark
Safety: Anette

WEATHER: 53 F, and nasty rain possible for most of the day.

DOWNTIME: 8hrs. due to weather

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Olin Amos
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Olin Amos

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 2/26/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Probe installation and decommissioning at #C7737 | **DATE:** 03-01-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 16

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7737 Tubing (2½") @ G S to 168' ft bgs; S.U. 2.3

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING TOPIC: RIGHT TOOL FOR RIGHT JOB
0630	TRAVEL TO ~~S-TANK FARM~~ ME SMURF TO ACE IN.
0715	TRAVEL TO S-TANK FARM
0730	STANDBY FOR PER-JOB
0745	PRE-JOB BY B. CLARK
0810	DRESS & ENTER FARM
–	INSPECT & WARM up EQUIPMENT & FUEL.
0830	BACK PULL C7737 2½" FROM 168' bgs TO 160' bgs, PULL
–	TAG TAPE IN STILL ABOUT ~3' SILT SOIL DIRT IN BOTTOM.
–	CONTINUED TO BACK PULL 2½"
0940	BACK PULLED TO 100' bgs EXIT FARM
0945	DRESS AND ENTER FARM. CONTINUE BACK PULLING
1100	COMPLETED BACKPULLING 2½" FROM 100' bgs TO G.S.
–	KNOCK OUT TIP STILL CONNECTED TO TIP HOLDER.
1115	EXIT FARM, RCT SURVEYED OUT TIP & TIP HOLDER.
–	LUNCH, WAITING TO HERE BACK FROM H. SYDNOR ON
–	DEPTH TO SET PROBE.
1200	DRESS AND ENTER FARM.
–	DRIVE 2½" Rod FROM G.S. TO 168' bgs
1410	SECURE SITE AND EXIT FARM
–	WILL NEED TO GET DEPTH OF PROBE FROM H. Sydnor.
1430	LEAVING S-FARM FOR E.S. OFFICE.
1500	ARRIVE AT OFFICE PAPER WORK & TIME CARD
1530	END OF SHIFT. * NOTE PROBE DEPTH FOR C7737 159.0 bgs per Sydnor

OPERATOR/LICENSE: OLSON #1217
ES SUPPORT: EHRODIT, STEFFIER
NCO: SEIDEL,
HPT: YOUNG, WIDDIS
FWS: CLARK

WEATHER: 60 F, Partly cloudy and a great day!.

DOWNTIME: 15 min FOR PRE-Job

DISCARDED ITEMS:
1- KNOCKOUT TIP 2½"
1- TIP HOLDER 2½"

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRODIT
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mike Ehrodit

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/02/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Probe installation and decommissioning at #C7737		**DATE:** 03-02-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 17

START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** (Yes) No	*HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7737 *Tubing* (2 1/2") @ 168' *to* GS *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: CORRECT PPE.
0620	TRAVEL TO GREEN HUT AND GET 160.0' PROBE.
0700	TRAVEL TO "S" TANK FARM.
0715	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0730	PRE-JOB BY B. CLARK - WRPS.
0740	PREP. 160.0' MULTI-LEVEL PROBE FOR INSTALLATION.
0826	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL.
0844	BACK-PULLED 2.5" PIPE TO 164.0' BGS. SUCCESSFULLY KNOCKED OUT TIP WITH
—	KNOCKER BAR. BACK-PULL, DECOMMISSION AND COMPLETE MULTI-LEVEL PROBE
—	INSTALLATION FROM 164.0' BGS TO 92.0' BGS. BOTTOM PROBE WAS INSTALLED AT
—	159.0' BGS. SEE ATTACHED PAPERWORK FOR PROBE INSTALLATION DEPTHS AND
—	BENTONITE, SAND AND SALT INTERVALS. EXIT FARM FOR LUNCH.
1100	LUNCH.
1130	STANDBY FOR HPT'S.
1230	HPT'S ONSITE. DRESS AND ENTER FARM. BACK-PULL 2.5" PIPE, DECOMMISSION AND
—	COMPLETE MULTI-LEVEL PROBE INSTALLATION FROM 92.0' BGS TO G.S. SEE
—	ATTACHED PAPERWORK FOR PROBE INSTALLATION DEPTHS AND BENTONITE, SAND AND SALT
—	INTERVALS. SECURED SITE FOR END OF SHIFT AND EXITED FARM.
1435	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005 *ES SUPPORT:* Ehrgott, WEAVLEY *NCO:* WILLIAMS, SEIDEL *HPT:* WIBBIS, YOUNG *FWS:* CLARK	**WEATHER:** 63 F, Partly cloudy with light winds **DOWNTIME:** 1/4 HR: PRE-JOB	**DISCARDED ITEMS:** 1: KNOCK-OUT TIP 1: 160' MULTI-LEVEL PROBE 1: 4' 2 1/2" PIN BY BOX 4: SKS. SAND 7 1/2: SKS. BENTONITE 3 1/2: CONTAINERS SALT

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup	**REVIEWED BY:** D.E. Skoglie
TITLE: *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: M. W. Walkup	**SIGNATURE:** Daniel E. Skoglie **DATE:** 3/03/10

10/06/09 Rev 1

DEC/09/2009/WED 09:59 AM EnergySolutions FAX No. 5093712462 P. 002

200 FT MULTI LEVEL RESISTIVITY PROBE WORK SHEET BOREHOLE NO: C7737

DIMENSIONS	PRELIMINARY AS-BUILT		CONSTRUCTION MATERIAL/TAG	
PLANNED	ACTUAL		MATERIAL	TAG
0 ft			SURFACE PROTECTION @ 1 FT BGS	
			Bentonite from 0.5 to ____	☐
- 20 ft -	- ft -	☐ ____	Sand from ____ to ____	☐
			Bentonite from ____ to ____	☐
- 40 ft -	- ft -	☐ ____	Sand from ____ to ____	☐
			Bentonite from ____ to 36.5	☐
- 60 ft -	-40 ft -	☐ 2	Sand from 36.5 to 42	☑
			Bentonite from 42 to 56.5	☑
- 80 ft -	-60 ft -	☐ 18 / 2	Sand from 56.5 to 62	☑
			Bentonite from 62 to 76.5	☑
- 100 ft -	-80 ft -	☐ 18 / 2	Sand from 76.5 to 82	☑
			Bentonite from 82 to 96.5	☑
- 120 ft -	-100 ft -	☐ 18 / 2	Sand from 96.5 to 102'	☑
			Bentonite from 102 to 116.5	☑
- 140 ft -	-120 ft -	☐ 18 / 2	Sand from 116.5 to 122	☑
			Bentonite from 122 to 136.5'	☑
- 160 ft -	-140 ft -	☐ 18 / 2	Sand from 136.5' to 142.0'	☑
			Bentonite from 142 to 155.5	☑
- 180 ft -	-159 ft -	17.5 / 1.5	Sand from 155.5 to 161.0	☑
			Bentonite from ____ to ____	☐
			TOTAL DEPTH: ____ ft bgs	

NOTE 1: Resistivity Probe measurements are to the bottom of the probe.

DATE: 3/2/10 INITIALS: [illegible]

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin probe and logging push at #C7743 | **DATE:** 03-03-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 18

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7743 *Tubing* (2 1/2") *@* GS *to* 90.3 *ft bgs; S.U.* 2.80'

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: ELECTRICAL SAFETY.
0620	TRAVEL TO EN2D. OBTAIN HOTWORK PERMIT. APPLY HARDFACING TO TWO KNOCK-OUT
—	TIPS AND TIP HOLDERS FOR NEXT TWO PUSHES IN "S" TANK FARM. 1/2 HR. FIRE
—	WATCH WAS REQUIRED. WELDING EQUIPMENT WAS SECURED.
0730	TRAVELED TO "S" TANK FARM.
0750	ONSITE AT "S" TANK FARM. PRE-JOB BY B. CLARK-WRPS.
0810	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0834	MOBILIZE HHUXL AND ALL SUPPORT EQUIPMENT TO #C7743 AND SET-UP.
0910	DROVE 2 1/2" PIPE WITH KNOCK-OUT TIP FROM G.S. TO 38.0' BGS. CROSSOVER SUB.
—	AND DRIVE HEAD ARE HOT. EXITED FARM TO LET COOL.
0950	LET HEAD COOL.
1020	DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 38.0' BGS
—	TO 60.0' BGS. STOPPED ONE TIME FOR ~20 MINUTES TO LET CROSSOVER SUB. AND
—	DRIVE HEAD COOL. EXITED FARM FOR LUNCH.
1140	LUNCH.
1210	DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 60.0' BGS TO
—	76.0' BGS. EXITED FARM TO LET CROSSOVER SUB. AND DRIVE HEAD COOL.
1310	LET HEAD COOL.
1330	DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 76.0' BGS TO
—	90.3' BGS. TAGGED DTB AT 89.7' BGS. SECURED SITE FOR END OF SHIFT. EXITED FARM.
1415	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Weakley
NCO: WILLIAMS, SHARP
HPT: WIDOWS, YOUNG
FWS: CLARK

WEATHER: 57 F, mostly cloudy with light rain all day.

DOWNTIME: N/A

DISCARDED ITEMS: 14: LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dave Skoglie **DATE:** 3/4/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue probe and logging push at #C7743 | **DATE:** 03-04-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 19

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7743 *Tubing* (2 1/2") *@* 90.3' *to* 153.7 *ft bgs; S.U.* 0.6'

Borehole # ~~N/A~~ C7745 *Tubing* (2 1/2") *@* G.S. *to* 48.0 *ft bgs; S.U.* 2.3'

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE, TOPIC: USE OF HHU BREAKOUT WRENCH.
0625	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM.
0725	BRIEFED BY B. CLARK - LORES.
0725	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0750	DROVE 2 1/2" PIPE WITH KNOCK-OUT TIP FROM 90.3' BGS TO 152.0' BGS. STOPPED TWO
—	TIMES FOR ~1/2 HR. TO LET CROSSOVER SUB. AND DRIVE HEAD COOL. EXITED FARM.
0950	LET EQUIPMENT COOL.
1010	DRESS AND ENTER FARM. DRIVE 2 1/2" PIPE WITH KNOCK-OUT TIP FROM 152.0' BGS TO
—	REFUSAL AT 153.7' BGS. EXITED FARM.
1140	LUNCH
1210	DRESS AND ENTER FARM. MOBILIZE HHUXL AND ALL SUPPORT EQUIPMENT TO
—	#C7743 AND SET-UP
1306	DROVE 2 1/2" PIPE WITH KNOCK-OUT TIP FROM G.S. TO 48.0' BGS. SECURED SITE
—	FOR WEEKEND AND EXITED FARM.
1450	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Weakley
NCO: SHARP
HPT: WIDDOWS, YOUNG
FWS: CLARK, CRAFT

WEATHER: 61 F, partly cloudy and mild

DOWNTIME: N/A

DISCARDED ITEMS:
1: 4' 2 1/2" BOX BY PIN
10: LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mark W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 03/08/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue probe and logging push at #C7745 and begin gamma logging at #C7743. **DATE:** 03-08-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 20

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No **HHU CASE#1** **HHU CAT #2** (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7745 Tubing (1 1/2") @ 48.0' to 74.0 ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7743	~~0.5~~ ped 120 --- 42'	Gamma
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: SAFETY CONCERN PROTOCOL.
0610	TRAVEL TO SHARE AND ACE UNDER RWP CO-541, REV. 6.
0650	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM. STANDBY FOR PACKAGE AND PRE-JOB. R. PRICE-
—	PNG ONSITE AT 0720 HRS.
0815	PRE-JOB BY S. CLARK - HRPS.
0830	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
—	FUEL SUPPORT GENERATORS. PNG PERFORMING SPECTRAL GAMMA LOGGING AT #C7743.
0850	DRIVE 2.3" PIPE WITH V-NOCK-OUT TIP FROM 48.0' BGS TO 74.0' BGS. NOTE: PNG
—	WAS ABLE TO GET THEIR LOGGING TOOL TO ONLY 120.0' BGS THERE IS AN OBSTRUCTION
—	IN THE CASING. EXITED FARM TO LET CROSSOVER SUB. AND DRIVE HEAD COOL.
1015	DRESS AND ENTER FARM. SECURED SITE. SUSTAINED WINDS > 20 MPH. ENTERED
—	ROP-008. EXITED FARM.
1030	STANDBY. ROP-008.
1100	LUNCH.
1130	STANDBY. ROP-008. PNG CONTINUING SPECTRAL GAMMA LOGGING AT #C7743.
1410	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Weakley
NCO: SHARP
HPT: WIDDS, YOUNG
FWS: CLARK
PNG: PRICE

WEATHER: 63 F, partly cloudy and mild

DOWNTIME:
1 1/4 HRS.: PRE-JOB
4 1/2 HRS.: ROP-008 (WIND)

DISCARDED ITEMS:
5: LYNCH PINS
1: NYLATRON DONUT

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Daniel E. Skoglie **DATE:** 3/09/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue probe and logging push at #C7745 and continue gamma logging at #C7743. **DATE:** 03-09-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 21

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No **HHU CASE#1** **HHU CAT #2** (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7745 Tubing (2 1/2") @ 74.0' to 155.0 ft bgs; S.U. 3.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7743	42'-- G.S.	Gamma
2. C7743	120' - 32'	MOISTURE
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: WORKING SAFELY.
0630	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM. STANDBY FOR PACKAGE AND PRE-JOB. R. PRICE - RNG
—	ONSITE AT 0715 HRS.
0730	PRE-JOB BY B. CLARK - WRPS.
0745	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL, NO PROBLEMS NOTED. FUEL
—	SUPPORT GENERATORS. RNG PERFORMING SPECTRAL GAMMA LOGGING AT #C7743.
0810	DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 74.0' BGS TO 104.0' BGS - CROSSOVER
—	SUB. AND DRIVE HEAD ARE HOT. EXITED FARM TO LET COOL.
0940	BREAK TO LET EQUIPMENT COOL.
1005	DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM 104.0' BGS
—	TO 116.0' BGS. EXITED FARM.
1100	LUNCH.
1130	UNABLE TO ENTER FARM. CONSTRUCTION CREW TOOK ESES DOSIMETRY OUT OF
—	CHANGE TRAILER. TRAVEL TO SMURF TO GET NEW DOSIMETRY AND RE-ACE.
1210	BACK ONSITE. DRESS AND ENTER FARM. DROVE 2.5" PIPE WITH KNOCK-OUT TIP FROM
—	104.0' BGS TO 155.0' BGS. RNG COMPLETED SPECTRAL GAMMA LOGGING AT #C7743
—	AND STARTED MOISTURE LOGGING AT #C7743.
1335	MOBILIZED HHUXL AND SUPPORT EQUIPMENT TO SAMPLE BORING #C7738 AND SET-UP
—	RNG COMPLETED MOISTURE LOGGING TO 32.0' BGS AT #C7743. SECURED SITE FOR
—	END OF SHIFT AND EXITED FARM.
1430	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Passey
NCO: WILLIAMS, SHARP
HPT: WIDDIS, YOUNG
FWS: CLARK
RNG: PRICE

WEATHER: 49 F, partly cloudy and much cooler

DOWNTIME: 1/2 HR.: PRE-JOB
40 MINS.: DOSIMETRY

DISCARDED ITEMS: 10 - LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/10/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete moisture logging at #C7743 and begin spectral gamma logging at #C7745		**DATE:** 03-10-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 22
START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No) *HHU CASE#1 HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7743	32'-GS	Moisture
2. C7745	155'-GS	~~Gamma~~ (GR) moisture
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: SECURING EQUIPMENT BEFORE TRANSPORT.
0620	TRAVEL TO "S" TANK FARM.
0650	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB. R. PRICE - RNG ONSITE @ 0710 HRS
0720	PRE-JOB BY B. CLARK - WRPS.
0745	GATHERED UP SUPPLIES FOR CEMENTING IN COMPLETION CAPS.
0815	RNG DRESS AND ENTER FARM. COMPLETING MOISTURE LOGGING ON #C7743.
0900	ESSS DRESS AND ENTER FARM. EXCAVATED AND CEMENTED COMPLETION
—	CAPS IN PROBE HOLE #'S C7737, C7739 AND C7741. RNG COMPLETED MOISTURE
—	LOGGING ON #C7743 AND BEGAN MOISTURE LOGGING ON #C7745. EXITED FARM.
—	NOTE: M. WALKUP ATTENDED MEETING AT 0930 HRS. WITH P. TEMPLETON - HPT, B. CLARK - FWS
—	AND D. DUFFY - HPT SUPERVISOR. DECISION WAS MADE BY RADCON TO ALLOW USE OF PVC
—	TREMIE PIPE TO PLACE WATER WHEN INSTALLING MULTI-LEVEL RESISTIVITY PROBES.
1015	STANDBY FOR SAMPLING WORK PACKAGE.
1100	LUNCH.
1130	STANDBY FOR SAMPLING WORK PACKAGE.
1200	DRESS AND ENTER FARM. RUN CAMERA SURVEY IN #C7743. 3.5" PIPE IS
—	SEPARATED AT 120.6 BGS. RNG CONTINUING MOISTURE LOGGING AT #C7745.
—	EXITED FARM.
1230	STANDBY FOR SAMPLING WORK PACKAGE.
1430	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005 *ES SUPPORT:* Olson, Passey *NCO:* WILLIAMS, SHARP *HPT:* WIDDIS, YOUNG *FWS:* CLARK RNG: PRICE	**WEATHER:** 51 F, partly cloudy and winds 10-20 mph **DOWNTIME:** 1 HR.: PRE-JOB 4 3/4 HRS.: SAMPLE PACKAGE	**DISCARDED ITEMS:** 3: SKS. QUIKRETE 3: MONUMENTS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup	**REVIEWED BY:** D.E. Skoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE:	**SIGNATURE:** DATE: 3/11/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin spectral gamma logging at #C7745. Standby for sampling work package. **DATE:** 03-11-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 23

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes ~~No~~ *HHU CASE#1* *HHU CAT #2* HHUXL#3

BOREHOLE SUMMARY

Borehole # ~~N/A~~ C7743 *Tubing* (2 1/2") @ 157.0' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. C7745	155'-- 83'	Gamma
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: USE OF DUST MASKS.
0625	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB AND WORK PACKAGE. R. PRICE-PNG
—	ONSITE AT 0715 HRS.
0900	PRE-JOB BY T. CRAFT - WRPS.
0910	ESTS ON STANDBY. NO SAMPLING WORK PACKAGE. PNG DRESS AND ENTER FARM,
—	BEGIN SPECTRAL GAMMA LOGGING AT #C7745. TAPED 2 SINGLE PROBES FOR
—	INSTALLATION IN #C7743.
1045	RECEIVED DIRECTION FROM WRPS ON HOW TO PROCEED. DRESS AND ENTER FARM.
—	FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
1055	MOBILIZE HHUXL FROM #C7738 TO #C7743 AND SET-UP. EXITED FARM.
1130	LUNCH.
1200	STANDBY FOR WIND. GUSTING TO 25 MPH. UNABLE TO START PROBE INSTALLATION.
—	PNG CONTINUING SPECTRAL GAMMA LOGGING AT #C7745.
1430	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Passey, Ehrgott
NCO: WILLIAMS, SHARP
HPT: WIBBS, YOUNG
FWS: CRAFT
PNG: PRICE

WEATHER: 54 F, partly cloudy, chance of showers late and winds 5-15 mph.

DOWNTIME: 3 1/2 HRS.: WIND
2 HRS.: PRE-JOB
1 HR. 35 MINS.: SAMPLE PNG.

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/12/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue spectral gamma logging at #C7745. Begin decommissioning and single probe installation at #C7743.

DATE: 03-12-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford

EXCAVATION: DAN-3906 **U-DIG #:** 10001270

REPORT #: 24

START CARD NO. SE06208

DECOMMISSION NO. AE08107

RWP: CO-541, Rev. 6 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1.
2. N/A
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No)

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7743 *Tubing* (2 1/2") @ 153.7' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1. C7745	83'-- GS	Gamma
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: DONNING AND DOFFING RAD. PPE.
0625	TRAVEL TO "C" FARM FOR PRE-JOB. NO POWER AT "S" FARM.
0645	ONSITE AT "C" FARM. STANDBY FOR PRE-JOB.
0715	PRE-JOB BY B. CLARK - WRPS.
0725	TRAVEL TO "S" FARM.
0745	ONSITE AT "S" FARM.
0750	STANDBY, AOP-008 IS IN EFFECT. SUSTAINED WINDS > 26 MPH.
0800	PNG DRESS AND ENTER FARM. BEGIN GAMMA LOGGING AT #C7745.
1100	LUNCH
1130	STANDBY, AOP-008 STILL IN EFFECT. PNG CONTINUING GAMMA LOGGING AT
—	#C7745.
1200	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
1430	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Passey, Ehrgott
NCO: WILLIAMS
HPT: TEMPLETON, BARNARD
FWS: CLARK
PNG: PRICE

WEATHER: 60 F, partly cloudy, chance of showers late and south winds 10-20 mph.

DOWNTIME:
1/2 HR.: PRE-JOB
7 1/2 HRS.: AOP-008 WIND

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark W. Walkup

REVIEWED BY: D. E. Sloglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Sloglie **DATE:** 3/15/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin decommissioning and single probe installation at #C7743. **DATE:** 03-15-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 25

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. ~~6~~ 7 AHA-09-008, Rev. 0

SAMPLING SUMMARY — *Sample #'s* *Interval* *%*
1. N/A
2.
3.
4.

SITE/EQUIPMENT INSPECTION: (Yes) No — *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY
Borehole # C7743 *Tubing* (2 1/2") @ 153.7' *to* 38.0 *ft bgs; S.U.* 2.8
Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____
Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING — *Boring #* *Interval* *Type*
1. N/A
2.
3.

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: CONDUCT OF OPS.
0630	TRAVEL TO SAWARE AND ACE.
0715	TRAVEL TO "S" TANK FARM.
0730	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0945	PRE-JOB BY R. RIVERA - NCO.
0955	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
1015	CASING WAS BROKEN AT 120.0' BGS. CASING FROM 120.0' BGS TO 153.7' BGS (TD)
—	WAS FILLED WITH BENTONITE AND LEFT IN PLACE. BOTTOM OF 1ST SINGLE PROBE
—	WAS PLACED AT 97.0' BGS AND 2.5" CASING WAS BACK-FILLED TO 86.0' BGS
—	AND DECOMMISSIONED. EXITED FARM.
1200	LUNCH.
1230	STANDBY FOR HPT'S.
1310	HPT'S ONSITE. DRESS AND ENTER FARM. BACK-FILLED AND DECOMMISSIONED 2.5"
—	CASING FROM 86.0' BGS TO 38.0' BGS. SECURED SITE AND EXITED FARM.
	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	NOTE: Sand was placed in borehole C7743 from 99' bgs to 93' bgs to encompass probe. RZS
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ~~Pasley~~ Ehrgott, RZS
NCO: RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 61 F, partly cloudy and mild.

DOWNTIME: 2 1/4 HRS.: PRE-JOB
40 MINS.: HPT'S

DISCARDED ITEMS:
1: KNOCK-OUT TIP
1: 100' SINGLE PROBE
8: 2 1/2" BOX BY PIN 4' PIPES
1: 2 1/2" BOX BY BOX 2' SUB.
4: SKS BENTONITE
1: SKS. SAND
1: Exp. point holder

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dail E Skoglie **DATE:** 3/16/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete decommissioning and single probe installation at #C7743. **DATE:** 03-16-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 26

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 7 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY — *Sample #'s* *Interval* *%* — 1. 2. 3. 4. N/A

SITE/EQUIPMENT INSPECTION: (Yes) No — *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7743 *Tubing* (2 1/2") @ 38.0' *to* G.S. *ft bgs; S.U.* N/A

Borehole # C7738 *Tubing* (2 5/8") @ G.S. *to* 43.0 *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING — *Boring #* *Interval* *Type* — 1. 2. 3. N/A

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: DEFENSIVE DRIVING.
0615	TRAVEL TO "S" TANK FARM.
0645	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0740	PRE-JOB BY R. RIVERA-NCO.
0805	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0820	BACK-PULLED 2.5" PIPE FROM 38.0' BGS TO 30.0' BGS. INSTALLED 10-20 SAND FROM
—	38.0' BGS TO 36.0' BGS. INSTALLED SINGLE PROBE FROM 36.0' BGS TO 34.0' BGS. INSTALLED
—	10-20 SAND FROM 36.0' BGS TO 32.0' BGS. HYDRATED SAND WITH ~1.5 GALLONS OF
—	SALT AND WATER MIXTURE. BACK-PULLED 2.5" PIPE FROM 30.0' BGS TO G.S. AND COMPLETED
—	DECOMMISSIONING WITH GRANULAR BENTONITE.
0950	MOVE HHUXL AND ALL SUPPORT EQUIPMENT TO SAMPLE BORING #C7738 AND SET-UP.
—	EXITED FARM.
1115	LUNCH.
1145	DRESS AND ENTER FARM. DRIVE DUAL WITH DUMMY TIP FROM G.S. TO FIRST SAMPLE
—	INTERVAL AT 43.0' BGS. SECURED SITE AND EXITED FARM.
	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Repko, Ehrgott
NCO: RIVERA
HPT: YOUNG, DERENZERA
FWS: LEHMANN

WEATHER: 60 F, partly cloudy and southwesterly winds 10-20 mph
DOWNTIME: 55 MINS.: PRE-JOB

DISCARDED ITEMS:
1: 55' SINGLE PROBE
7: SKS. BENTONITE
IV: SKS. SAND
1: CONTAINER SALT

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/17/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Standby, no sampler support. **DATE:** 03-17-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 27

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 7 AHA-09-008, Rev. 0

SAMPLING SUMMARY — SITE/EQUIPMENT INSPECTION: *Yes* (No) — *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7788 *Tubing* (8 5/8") @ 45.0' *to* N/A *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: RIG INSPECTION FORMS.
0630	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0900	PRE-JOB BY B. CLARK - WRPS.
0915	STANDBY, NO SAMPLER SUPPORT. COMPLETE MINOR MAINTENANCE ON HHUXL.
1100	LUNCH.
1130	NO SAMPLER SUPPORT, STANDBY. TRAVELED TO OFFICE. COMPLETED PAPERWORK
—	AND TIME CARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Repko, Ehrgott, Passey
NCO: RIVERA
HPT: YOUNG
FWS: CLARK

WEATHER: 59 F, partly cloudy and southwesterly winds 5-15 mph

DOWNTIME: 9 HRS: NO SAMPLERS

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Michael D. Walkup

REVIEWED BY: D.E. Sikoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dan E. Sikoglie **DATE:** 3/18/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C7738 (STANDBY) | **DATE:** 03-18-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 28

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 7 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** *Yes* (No) | *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

Sample #'s	*Interval*	*%*
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 *Tubing* (2 5/8") @ 45.0' *to* N/A *ft bgs; S.U.* 5.9'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: ELECTRICAL CORD INSPECTION.
0615	TRAVEL TO "S" TANK FARM.
0645	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB. AND SAMPLERS.
0800	PRE-JOB BY B. CLARK-WRPS.
0815	STANDBY FOR SAMPLERS. DRESS AND ENTER FARM. FUEL AND INSPECT HHUXL NO
—	PROBLEMS NOTED. FUELED SUPPORT GENERATORS. REPLACED REPAIRED BREAK-OUT WRENCH.
—	EXIT FARM.
0900	STANDBY, NO SAMPLERS.
1100	LUNCH.
1130	STANDBY, NO SAMPLERS. TRAVEL TO OFFICE. COMPLETE PAPERWORK AND TIME CARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Repko, Ehrgott, Passey
NCO: WILLIAMS
HPT: WOODS, BARNARD
FWS: CLARK

WEATHER: 58 F, mostly sunny and winds 5-15 mph

DOWNTIME:
9 HRS: NO SAMPLER SUPPORT

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dale Skoglie **DATE:** 3/18/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C7738 | **DATE:** 03-22-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 29

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 7 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No) | *HHU CASE#1* | *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7738 *Tubing* (2 5/8") @ 45.0' *to* N/A *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: USE OF POWER TOOLS.
0615	TRAVEL TO "S" TANK FARM.
0645	ONSITE AT "S" TANK FARM. STANDBY FOR PACKAGE AND PRE-JOB. NO SAMPLER
—	SUPPORT AVAILABLE.
1100	LUNCH.
1130	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ~~Repko~~ Ehrgott, PASSEY
NCO: WILLIAMS, RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 59 F, mostly cloudy and winds 10-20 mph

DOWNTIME: 9 HRS: NO SAMPLERS

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.F. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David F. Skoglie **DATE:** 3/23/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 2

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C7738 | **DATE:** 03-23-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 30

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 7 | AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1. 45'-47' SEE PG. 2 FOR SAMPLE #'S		
2. 62'-64' SEE PG. 2 FOR SAMPLE #'S		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 45.0' to 64.0 ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: 1st AID KIT INSPECTION IN COMPANY VEHICLES.
0655	TRAVEL TO "S" TANK FARM.
0725	ONSITE AT "S" TANK FARM. STANDBY FOR SAMPLERS AND PRE-JOB.
0845	SAMPLERS ONSITE. PRE-JOB BY B. CLARK-WRPS.
0905	DRESS AND ENTER FARM. INSPECT AND WARM HHUXL. NO PROBLEMS NOTED.
0925	BACK-PULL INNER STRING AND DUMMY TIP.
0950	RUN INNER STRING AND SAMPLER IN. DRIVE SAMPLE FROM 45.0' BGS TO 47.0' BGS AT
—	1012 HRS. AND RETRIEVE. 100% RECOVERY. (NOTE: WRPS ONSITE AT 0950 HRS. DOING
—	MANAGEMENT ASSESSMENT. OFFSITE AT 1116 HRS.) SEE PAGE #2 FOR SAMPLE #'S.
1025	RUN INNER STRING AND DUMMY TIP IN. DRIVE DUAL WALL FROM 47.0' BGS TO SECOND
—	SAMPLE INTERVAL AT 62.0' BGS. EXIT FARM.
1145	LUNCH.
1215	STANDBY FOR HPT'S.
1315	HPT'S ONSITE. RE-ACE UNDER RWP CO-541, REV. 8.
1330	DRESS AND ENTER FARM. BACK-PULL INNER STRING AND DUMMY TIP.
1349	RUN INNER STRING AND SAMPLER IN. DRIVE SAMPLE FROM 62.0' BGS TO 64.0' BGS AT
—	1358 HRS. AND RETRIEVED. 100% RECOVERY. SEE PAGE #2 FOR SAMPLE #'S. SECURED
—	SITE AND EXITED FARM. IT WAS NOTED THAT CROSSOVER SUB. HAS CRACKED.
1415	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
—	SAMPLING NCO'S ONSITE: HARRIS, CAMPBELL AND SNOOK.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ELLIGOTT, PRASSEY, STEFFEN
NCO: WILLIAMS, RIVERA
HPT: WEBBS, YOUNG
FWS: CLARK

WEATHER: 62 F, mostly sunny, winds light and variable.

DOWNTIME:
1 HR., 20 MINS: SAMPLERS
1 HR: HPT'S

DISCARDED ITEMS:
6: SS LINERS
12: EVA CAPS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mike W. Walkup

REVIEWED BY: D E Skeglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skeglie **DATE:** 3/24/10

10/06/09 Rev 1

ENERGYSOLUTIONS

DAILY WORK RECORD – CONTINUATION PAGE

Page 2 of 2

Date	Boring #	Continuation of Report No.
03-23-10	C7738	30

TIME	WORK SUMMARY
1012	SAMPLE # 824HH9 45.0' BGS TO 47.0' BGS 100% RECOVERY.
	N/A
1358	SAMPLE # 824HJ0 62.0' BGS TO 64.0' BGS 100% RECOVERY.
	N/A

Report By	M.W. Wallace	Reviewed By			
Title	ES Technical Preparer	Title	ES Technical Reviewer	Date	
Signature		Signature			100609 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738 with Case HHU | **DATE:** 03-24-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 31

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU (CASE#1) HHU CAT #2 (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 64.0' to 68.0 ft bgs; S.U. 0.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	SAFETY MEETING AT OFFICE. TOPIC: SHOWING UP FOR WORK WITH PROPER PPE.
0630	TRAVEL TO "S" TANK FARM.
0700	ONSITE AT "S" TANK FARM. STANDBY FOR PRE-JOB.
0735	PRE-JOB BY B. CLARK-WRES.
0755	DRESS AND ENTER FARM. RIG HHUXL DOWN AND MOVE OFF OF HOLE #C7738.
—	REMOVE BROKEN CROSSOVER SUB. AND REPLACE. MOVE CASE HHU AND SUPPORT EQUIP-
—	MENT FROM "C" TO "S" FARM, SPOT CASE ON BORING # C7738 AND SET-UP. EXITED
~~1130~~	FARM FOR LUNCH.
1130	LUNCH.
1200	DRESS AND ENTER FARM. CONTINUE REPAIRS TO HHUXL. CLEANED PIPE FOR CASE
—	HHU (INNER STRING).
1315	RAN INNER STRING AND DUMMY TIP IN WITH CASE. DROVE DUAL WITH DUMMY TIP
—	FROM 64.0' BGS TO 68.0' BGS. WILL COMPLETE REPAIRS TO HHUXL IN THE MORNING.
—	SECURED SITE AND EXITED FARM.
1440	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott Passey and Repko,
NCO: WILLIAMS, RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 67 F, mostly sunny, winds light and variable from the north,

DOWNTIME: 35 MINS: PRE-JOB

DISCARDED ITEMS: 1: CROSSOVER SUB. FOR HHUXL.

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Michael D. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 3-25-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete repairs to HHUXL and let Baker-Lok cure. **DATE:** 03-25-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 32

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 8 **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) **HHU CASE#1** **HHU CAT #2** (HHUXL#3)

BOREHOLE SUMMARY

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Tis' the season, be aware of biological hazards.
0640	Travel to "S" Tank Farm. AFTER STOPPING AT ENW FOR TOOLS.
0830	Onsite at "S" Tank Farm.
0900	DRESS AND ENTER FARM. COMPLETE CLEANING OF SPINDLE AND INSTALLATION OF
—	CROSSOVER SUB. SECURED RIG AND EXITED FARM.
1030	LET BAKER-LOK SET.
1100	LUNCH
1130	LET BAKER-LOK SET. TRAVEL TO OFFICE. COMPLETE PAPERWORK AND TIME CARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: SNOOK, VILLARREAL
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 61 F, partly cloudy with a chance of showers. Winds 10-2- mph

DOWNTIME: N/A

DISCARDED ITEMS: 1". BAKER-LOK

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler **DATE:** 3-26-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738. **DATE:** 03-25-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 32

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 8 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

(HHU CASE#1) HHU CAT #2 HHUXL#3

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 68.0' to 88.0 ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Tis' the season, be aware of biological hazards.
0630	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm. STANDBY FOR PRE-JOB.
0745	PRE-JOB BY B. CLARK - WRPS.
0845	DRESS AND ENTER FARM, FUEL, INSPECT AND WARM CASE HHU. NO PROBLEMS NOTED.
—	FUEL SUPPORT GENERATORS.
0930	DROVE DUAL WITH DUMMY TIP FROM 68.0' BGS TO 80.0' BGS. EXITED FARM TO LET
—	CROSSOVER SUB. AND DRIVE HEAD COOL.
0935	LET EQUIPMENT COOL.
1000	DRESS AND ENTER FARM. DROVE DUAL WALL WITH DUMMY TIP FROM 80.0' BGS TO 88.0'
—	BGS. SECURED SITE AND EXITED FARM.
1100	LUNCH.
1130	ROP-008 IN EFFECT, WINDS > 20 MPH. TRAVELED TO OFFICE. COMPLETED PAPER-
—	WORK AND TIME CARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Passey
NCO: WILLIAMS, RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 61 F, partly cloudy with a chance of showers. Winds 10-2- mph

DOWNTIME:
3/4 HR: PRE-JOB
4 HRS: WIND

DISCARDED ITEMS:
8: LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Michael W. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 3-26-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738 | **DATE:** 03-26-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 33

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | (HHU CASE#1) HHU CAT #2 HHUXL#3

BOREHOLE SUMMARY

Borehole #C7738 Tubing (2 5/8") @ 88.0' to N.A. ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Proper eye protection when working in windy conditions and maintaining eye wash stations.
0625	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm. PRE-JOB BY B. CLARK - WRPS.
0730	STANDBY. ADP-008 IN EFFECT. WINDS > 20 MPH.
1100	LUNCH.
1130	STAND BY, ADP-008 IN EFFECT. WINDS > 20 MPH.
1430	END OF SHIFT.

N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: N/A
HPT: TEMPLETON, BARNARD
FWS: CLARK

WEATHER: 61 F, partly cloudy with winds 15-25 mph and gusts to 35 mph

DOWNTIME: 8 HRS: WIND (ADP-008)

DISCARDED ITEMS: 1: 2 5/8" dummy & sample tip holder

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: R2 Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R. J. Steffler
DATE: 3-26-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly begin sampling activities at #C7740 | **DATE:** 03-26-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 33

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No) | *HHU CASE#1* | *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____
Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____
Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Proper eye protection when working in windy conditions and maintaining eye wash stations.
0625	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm. PAE-308 BY B. CLARK-WRPS
0730	STANDBY, ROP-008 IN EFFECT. WINDS > 20 MPH.
1100	LUNCH.
1130	STANDBY, ROP-008 IN EFFECT. WINDS > 20 MPH.
1430	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ~~Ehrgott, Passey~~
NCO: N/A
HPT: TEMPLETON, BARNARD
FWS: CLARK

WEATHER: 61 F, partly cloudy with winds 15-25 mph and gusts to 35 mph

DOWNTIME: 8 HRS: WIND (ROP-008)

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mike W. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 3-26-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Mobilize to #C7740 and set-up. Drive dual wall to first sample interval. **DATE:** 03-29-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 34

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 8 **AHA-**09-008, Rev. 0

SAMPLING SUMMARY — *Sample #'s* *Interval* *%*
1. N/A
2.
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No) *HHU CASE#1* *HHU CAT #2* (HHU/XL#3)

BOREHOLE SUMMARY
Borehole # C7740 *Tubing* (2 5/8") @ G.S. *to* N/A *ft bgs; S.U.* N/A
Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ___
Borehole # N/A *Tubing* ( ) @ *to* *ft bgs: S.U.* ___

GEOPHYSICAL LOGGING — *Boring #* *Interval* *Type*
1. N/A
2.
3.

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Rotating shafts and pto's.
0640	Travel to "S" Tank Farm.
0715	Onsite at "S" Tank Farm.
0720	STANDBY. ROP-008 IN EFFECT. WINDS > 20 MPH.
1100	LUNCH.
1130	STANDBY. ROP-008 IN EFFECT. WINDS > 20 MPH.
1630	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Passey, Steffler
NCO: SWEARIA
HPT: WIBBIS, YOUNG
FWS: CLARK

WEATHER: 64 F, partly cloudy with winds a chance of showers

DOWNTIME: 9 HRS : ROP-008 (WIND)

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/30/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738 | **DATE:** 03-29-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 34

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | (HHU CASE#1) HHU CAT #2 HHUXL#3

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 88.0' to N/A ft bgs; S.U. 2.8'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Rotating shafts and pto's.
0640	Travel to "S" Tank Farm.
0715	Onsite at "S" Tank Farm.
0716	STANDBY. ROP - 008 IN EFFECT. WINDS > 20 MPH.
1100	LUNCH.
1130	STANDBY. ROP - 008 IN EFFECT. WINDS > 20 MPH.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 64 F, partly cloudy with winds a chance of showers

DOWNTIME: 9 HRS: ROP-008 (WIND)

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKER
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mark W. Walker

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/30/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Mobilize to #C7740 3 RZS 5-17-10 and set-up. Drive dual wall to first sample interval. **DATE:** 03-30-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 35

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 8 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740 *Tubing* (2 5/8") *@* G.S. *to* 40.0 *ft bgs; S.U.* 2.3'

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) *@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Company vehicle 360 degree walk around.**
0645	Travel to "S" Tank Farm.
0715	Onsite at "S" Tank Farm.
0716	PRE-JOB BY T. CRAFT - WRRS.
0734	GATHER TOOLING FOR DUAL WALL SYSTEM.
0805	DRESS AND ENTER FARM. MOB. HHUXL AND SUPPORT EQUIPMENT TO #C7740 3 RZS 5-17-10
—	AND SET-UP. CLEAN 2 5/8" PIPE AND INNER STRING. SET-UP CONTROL ZONE
0950	DRIVE DUAL WALL WITH DUMMY TIP FROM G.S. TO FIRST SAMPLE INTERVAL AT 40.0' BGS.
—	EXITED FARM.
1145	LUNCH.
1215	DRESS AND ENTER FARM. MOBILIZE HHUXL AND SUPPORT EQUIPMENT FROM
—	#C7740 TO PROBE HOLE #C7745 AND SET-UP. SECURED SITE AND EXITED FARM.
	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
15:30	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ~~Passey~~, Ehrgott, SCHEULER
NCO: WILLIAMS, RIVERA
HPT: WIBBIS, YOUNG
FWS: CRAFT, HARTLEY

WEATHER: 60 F, partly cloudy with winds a chance of showers and winds 10-20 mph

DOWNTIME: N/A

DISCARDED ITEMS: 6 LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/31/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738 | **DATE:** 03-30-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 35

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | (HHU CASE#1) HHU CAT #2 HHUXL#3

Sample #'s	Interval	%
1. B24KV1	96'-98'	100%
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 88.0' to 98.0 ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Company vehicle 360 degree walk around.
0645	Travel to "S" Tank Farm.
0715	Onsite at "S" Tank Farm. PRE-JOB BY T. CRAFT - WRPS.
0740	DRESS AND ENTER FARM. INSPECT AND WARM CASE HHU. NO PROBLEMS NOTED.
0750	DRIVE DUAL WALL WITH DUMMY TIP TO THIRD SAMPLE INTERVAL AT 96.0' BGS.
—	PULL INNER STRING AND DUMMY TIP. INNER STRING SEPARATED AT 24.0' BGS. BACK-
—	PULL 2 5/8" WITH INNER STRING 24.0'. PULL REMAINING INNER STRING AND INSPECT.
1002	RUN INNER STRING AND DUMMY TIP BACK IN. RE-DRIVE DUAL WALL WITH DUMMY TIP
—	FROM 72.0' BGS TO ORIGINAL SAMPLE DEPTH OF 96.0' BGS. PULLED DUMMY TIP AND
—	INNER STRING. EXITED FARM.
1145	LUNCH.
1215	DRESS AND ENTER FARM. RUN INNER STRING AND SAMPLER IN. DROVE SAMPLE
—	FROM 96.0' BGS TO 98.0' BGS AT 1320 HRS. AND RETRIEVED. 100% RECOVERY.
—	SAMPLE # B24KV1.
1400	RUN INNER STRING AND DUMMY TIP IN. SECURED SITE AND EXITED FARM.
	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIME CARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: CAMPBELL, HARRIS
HPT: WEBBS, YOUNG
FWS: CLARK, HARTLEY

WEATHER: 60 F, partly cloudy with winds a chance of showers and winds 10-20 mph

DOWNTIME: N/A

DISCARDED ITEMS:
2: 4' BOX BY PLW INNER ROD
2: LYNCH PINS
3: SAMPLE LINERS
6: SAMPLE CAPS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Wainwright
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Michael W. Wainwright

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 3/31/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin probe installation at #C7745		**DATE:** 03-31-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 36

START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 8 **AHA**-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** *Yes* (No)	*HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s *Interval* *%*

1. N/A
2.
3.
4.

BOREHOLE SUMMARY

Borehole # C7745 *Tubing* (2 1/2") @ 155.0' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: If something looks wrong in your work area it probably is. Question it!**
0640	Travel to "S" Tank Farm, AFTER STOPPING AT ENW.
0740	Onsite at "S" Tank Farm. PRE-JOB BY B. CLARK - WRPS.
0850	EXPERIMENTED WITH DIATOMACEOUS EARTH FOR HYDRATION TO USE IN NEW
—	MULTI-LEVEL PROBE INSTALLATION INSTEAD OF SAND.
1030	STANDBY. DECISION WAS MADE NOT TO USE POOL GRADE DIATOMACEOUS EARTH
—	BECAUSE OF HIGH SILICA CONTENT. RESPIRATOR USE IS NOT COVERED IN THE
—	WORK PACKAGE.
1100	LUNCH.
1130	STANDBY FOR DIATOMACEOUS EARTH. TRAVELED TO OFFICE. COMPLETED PAPERWORK
—	AND TIME CARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005 *ES SUPPORT:* Ehrgott *NCO:* WILLIAMS, RIVERA *HPT:* WIDDIS, YOUNG *FWS:* CLARK	**WEATHER:** 62 F, partly cloudy with a chance of showers and winds 10-20 mph, gusting to 25 in the afternoon **DOWNTIME:** 4 1/2 HRS: DIATOMACEOUS EARTH	**DISCARDED ITEMS:** N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. WALKUP	**REVIEWED BY:** D.E. Skoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Michael D. Walkup	**SIGNATURE:** Daniel Skoglie **DATE:** 4/01/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738		**DATE:** 03-31-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 36

START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 8 **AHA**-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** (Yes) No	(HHU CASE#1) HHU CAT #2 HHUXL#3

Sample #'s	Interval	%
1.		
2.	N/A	
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 3/8") @ 98.0' to 127.0 ft bgs; S.U. 3.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: If something looks wrong in your work area it probably is. Question it!**
0640	Travel to "S" Tank Farm.
0710	Onsite at "S" Tank Farm. STANDBY FOR PRE-JOB.
0740	PRE-JOB BY B. CLARK - WRPS.
0750	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM CASE HHU. NO PROBLEMS NOTED.
0810	RUN REMAINING INNER ROD AND DUMMY TIP IN.
0820	DROVE DUAL WALL WITH DUMMY TIP FROM 98.0' BGS TO 108.0' BGS. EXITED
—	FARM TO LET CROSSOVER SUB. AND DRIVE HEAD COOL.
0950	LET EQUIPMENT COOL.
1015	DRESS AND ENTER FARM. DROVE DUAL WITH DUMMY TIP FROM ~~98.0'~~ 108' BGS TO 127'
—	SAMPLE INTERVAL AT 127.0' BGS. EXITED FARM.
1150	LUNCH.
1220	STANDBY FOR HPT'S.
1310	HPT'S ONSITE. DRESS AND ENTER FARM. BACK-PULL INNER STRING AND DUMMY
—	TIP. RAN INNER STRING AND SAMPLER IN. DID NOT DRIVE SAMPLE. SECURED
—	SITE AND EXITED FARM.
1450	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Olson/ 1217 *ES SUPPORT:* Passey, BERNO *NCO:* WILLIAMS, RIVERA *HPT:* WIDDIS, YOUNG *FWS:* CLARK	**WEATHER:** 62 F, partly cloudy with a chance of showers and winds 10-20 mph, gusting to 25 in the afternoon **DOWNTIME:** 1/2 HR: PRE-JOB 50 MINS: HPT'S	**DISCARDED ITEMS:** 4: LYNCH PINS 1: 36" SAW AND HEAD

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. Williams	**REVIEWED BY:** D.E. Skoglie
TITLE: *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Mike W. Williams	**SIGNATURE:** David E. Skoglie **DATE:** 4/01/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7738 | **DATE:** 04-01-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 37

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24HV2	127' - 129'	100
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | (HHU CASE#1) HHU CAT #2 HHUXL#3

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 127.0' to 139.0 ft bgs; S.U. 13.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Respirator use when handling products with silica in them.
0630	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm.
0701	PRE-JOB BY B. CLARK - WRPS
0730	DRESS AND ENTER FARM. FUEL, INSPECT AND WARM CASE HHU. NO PROBLEMS NOTED.
0750	DROVE SAMPLE FROM 127.0' BGS TO 129.0' BGS AT 0755 HRS. AND RETRIEVED. 100%
—	RECOVERY. SAMPLE # B24HV2.
0835	RAN INNER STRING AND DUMMY TIP IN. DROVE DUAL WALL FROM 129.0' BGS TO 149.0'
—	BGS. EXITED FARM.
1045	LUNCH.
1115	DRESS AND ENTER FARM. DROVE DUAL WALL WITH DUMMY TIP FROM 149.0' BGS TO FIFTH
—	AND FINAL INTERVAL AT 159.0' BGS. DID NOT PULL INNER STRING AND DUMMY TIP.
1120	MOVED CASE HHU FROM #C7738 TO MIDDLE "SX" GATE FOR SURVEY OUT ON MONDAY.
—	MOVED SUPPORT EQUIPMENT TO GATE FOR EXIT SURVEY. EXITED FARM.
1410	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Passey
NCO: SNOOK, HARKLEY, CAMPBELL
HPT: WIBBIS, YOUNG
FWS: CLARK

WEATHER: 59 F, partly cloudy with a chance of showers and winds 10-15 mph.

DOWNTIME: N/A

DISCARDED ITEMS: 7: LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-5-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin probe installation at #C7745 | **DATE:** 04-01-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 37

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** *Yes* (No) | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7745 *Tubing* (2 1/2") @ 155.0' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Respirator use when handling products with silica in them.**
0630	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm.
0701	RRE-308 BY B. CLARK - WRPS.
0730	STANDBY. WAITING ON FOOD GRADE DIATOMACEOUS EARTH.
1045	LUNCH.
1115	STANDBY. WAITING ON FOOD GRADE DIATOMACEOUS EARTH.
1245	MOVED HHUXL FROM #C7745 TO #C7738 AND SET-UP. EXITED FARM.
1410	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1500	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott
NCO: SHARP, RIVERA, VILLARREAL
HPT: TEMPLETON, BARNARD.
FWS: CLARK

WEATHER: 59 F, partly cloudy with a chance of showers and winds 10-15 mph.

DOWNTIME: 4 3/4 - WAITING FOR DIATOMACEOUS EARTH

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-5-10

10/06/09 Rev 1

TEMPO PRECISION MOLDED FOAM

Tempo Plastic Co., Inc., provides stock and custom protective packaging, particulate free, semi-flexible, long life protection for archival storage, in-house handling, or shipping. We also provide cleanroom - compatible, durable parts molded from copolymer foams, test reports for liquid particle counts and organic analysis are posted. We feature thin walls, smooth surfaces, high foam densities, which can be replacements for injection molded parts. We specialize in intricate shapes and offer static dissipative certification, responsiveness and low cost molds.

Menu
Home
About Us
Contact Us

Ceramic Shell Casting
Custom Molded Foam
Lost Foam Metalcasting
Low Cost Molds
Stock Protective Packaging
Static Dissipative Packaging
Lint Free Paperless Packaging
Engineers Corner
Conversion Charts
Dry Process & Mold Warranty
Foam Recycling
How Foam Expands
Lab Testing Results

Business Philosophy & Quality Improvement
Exhibits
Web Links
Site Map
WIP

Tempo can produce beads in these ranges using the corresponding mechanical screens.

(blue text are active links)

Back to Conversion Chart List

U.S. MESH	INCHES	MICRONS	MILLIMETERS
3	0.2650	6730	6.730
4	0.1870	4760	4.760
5	0.1570	4000	4.000
6	0.1320	3360	3.360
7	0.1110	2830	2.830
8	0.0937	2380	2.380
10	0.0787	2000	2.000
12	0.0661	1680	1.680
14	0.0555	1410	1.410
16	0.0469	1190	1.190
18	0.0394	1000	1.000
20	0.0331	841	0.841
25	0.0280	707	0.707
30	0.0232	595	0.595
35	0.0197	500	0.500
40	0.0165	400	0.400
45	0.0138	354	0.354
50	0.0117	297	0.297
60	0.0098	250	0.250
70	0.0083	210	0.210
80	0.0070	177	0.177
100	0.0059	149	0.149
120	0.0049	125	0.125
140	0.0041	105	0.105
170	0.0035	88	0.088
200	0.0029	74	0.074
230	0.0024	63	0.063
270	0.0021	53	0.053
325	0.0017	44	0.044
400	0.0015	37	0.037

TEMPO PRECISION MOLDED FOAM

Tempo Plastic Company
1227 N. Miller Park Court
Visalia, Ca 93291

Phone 559.651.7711
Fax 559.651.0123
Toll Free 1.800.350.7711

Email
Tempo@Tempo-Foam.com

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete sampling activities at #C7738 and decommission | **DATE:** 04-05-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 38

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1. N/A
2.
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No) | *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7738 *Tubing* (2 3/8") @ 159.0' *to* N/A *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Monthly fire extinguisher inspections need completed and signed off.**
0615	Travel to "S" Tank Farm.
0645	Onsite at "S" Tank Farm. STANDBY FOR PRE-SOB.
0815	PRE-SOB BY B. CLARK-WRRS.
0830	UNABLE TO SAMPLE DUE TO WIND. ON STANDBY.
1100	LUNCH.
1130	STANDBY. ACP-008 IN EFFECT. TRAVELED TO OFFICE. COMPLETED PAPERWORK
—	AND TIME CARD.
1530	EOD OF SHIFT.

N/A

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Passey
NCO: WILLIAMS, RIVERA
HPT: WIDDIS, YOUNG
FWS: CLARK

WEATHER: 57 F, partly cloudy with a chance of showers and winds 10-20 mph.

DOWNTIME: 9 HRS: WIND

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-6-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Mobilize to "C" Tank Farm and prep. for sampling. **DATE:** 04-05-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 38

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 8 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1. N/A
2.
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No) *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Monthly fire extinguisher inspections need completed and signed off.**
0615	Travel to "S" Tank Farm.
0645	Onsite at "S" Tank Farm. STANDBY FOR PRE-JOB.
0815	PRE-JOB BY B. CLARK - WRPS.
0830	DRESS AND ENTER FARM. MOVE CASE HHU TO RBA. HPT'S SURVEYING IT OUT
—	OF FARM.
1000	CASE HHU SURVEYED OUT AND TAKEN TO WASH PAD AT SMURF. HAND TOOLS, ETC.
—	SURVEYED OUT AND PLACED IN HORSE TRAILER.
1100	LUNCH.
1130	STANDBY. ROP-OOS IN EFFECT. TRAVELED TO OFFICE. COMPLETED PAPERWORK
—	AND TIMECARD.
1300	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott
NCO: SHARP, CAMPBELL, HARRIS
HPT: TEMPLETON
FWS: CLARK

WEATHER: 57 F, partly cloudy with a chance of showers and winds 10-20 mph.

DOWNTIME: 4 HRS : WIND

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: [signature] **DATE:** 4-6-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete sampling activities at #C7738 and decommission | **DATE:** 04-06-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 39

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 1/2") @ 159.0' to ft bgs; S.U. 3.3'

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Starting and stopping projects. Remained focused and pay attention to one another.
0630	TRAVEL TO S-FARM
0710	ARRIVED ON SITE FOR PRE-JOB
0715	ON STANDBY DUE TO WIND AOP-008 IN EFFECT
0800	B. CLARK ON SITE FOR PRE-JOB
0830	SAMPLERS ON SITE
—	ON STANBY FOR WIND AOP-008-IN EFFECT
—	PREFORM MAINTENANCE ON CONTROLLER BOXES FOR HHU.
—	PUT 11 KNOCKOUT TIPS & TIP HOLDERS TOGETHER (2 1/2")
1100	LUNCH AOP-14 (Lightening threat) in effect.
1130	STANDBY. AOP-008 IN EFFECT, UNABLE TO SAMPLE
1345	TRAVEL TO OFFICE, COMPLETED PAPERWORK & TIME CARD.
1530	END OF SHIFT

NOT USED

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Ehrgott, Walkup
NCO: Williams, Rivera
HPT: Widdis, Young
FWS: B. Clark

WEATHER: 59 F, partly cloudy with a chance of showers, winds 10-20 mph with higher gusts in the afternoon.

DOWNTIME: 9 HRS DUE TO WIND/Lightening threat.

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRGOTT
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Mike Ehrgott

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 4/7/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete sampling activities at #C7738 and decommission | **DATE:** 04-07-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 40

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24KV3	159'-161'	100%
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | HHU CASE#1 | HHU CAT #2 | (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 5/8") @ 152.0' to 161' ft bgs; S.U. 3.3

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Hot work permits, fire extinguisher training and fire watch training.**
0615	Travel to "S" Tank Farm.
0645	Onsite at "S" Tank Farm. ON STANDBY FOR PRE-JOB AND WORK PACKAGE
0740	WORK PACKAGE ON SITE WITH NCO S. SALOAK.
0745	RCT'S ON SITE. PRE-JOB & SIGN IN.
0750	ES CREW & RCT DRESS OUT & ENTER FARM.
0800	SAMPLERS ON SITE.
0805	ES CREW INSPECT AND WARM UP RIG.
—	NCO'S TRANSPORT 8 BAGS OF BENTONITE, AND SUPPORT SET UP.
0820	ES. CREW START TRIPPING OUT DUMMY TIP.
0900	TRIP IN SAMPLER TO 159' bgs
0940	DRIVE SAMPLER FROM 159' bgs TO 161' bgs. AND TRIP OUT.
1040	SAMPLERS PROCESSING SAMPLE TO TAKE TO LABS
—	SAMPLE # B24KV3, DEPTH 159' bgs TO 161' bgs (LAST SAMPLE) 100% RECOVERY.
—	START DECOMMISSIONING 2 5/8" ROD FROM 161' bgs.
1120	EXIT FARM FOR LUNCH. 2 5/8" BACKPULLED TO 140' bgs. C7738
1140	RCT'S LEFT SITE FOR SMURF BUILDING (FOR LUNCH)
1150	~~RCT'S~~ NCO'S LEFT SITE. RIVERA, SHARP
1250	RCT'S BACK ON SITE, ES.CREW DRESS OUT & ENTER FARM
—	CONTINUE TO BACKPULL AND DECOMMISSION FROM 140' bgs
1300	NCO'S BACK ON SITE
1410	BACKPULLED TO 80' bgs SECURE SITE & EXIT FARM. BENTONITE TO 82' bgs
1430	TRAVEL TO OFFICE
1530	END OF SHIFT

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Ehrgott, Olson
NCO: WILLIAMS, SHARP, RIVERA
HPT: WIDDIS, YOUNG
FWS:

WEATHER: 66 F, partly cloudy with a chance of showers, winds 10-20 mph from the southwest.

DOWNTIME: 1 HR, WAITING FOR PRE-JOB.
20 MIN: WAITING FOR RCT'S (LUNCH)

DISCARDED ITEMS:
3- SS SAMPLE LINERS
6- SS LINER CAPS
5- BAGS BENTONITE

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRGOTT
TITLE: ES TECHNICAL PREPARER
SIGNATURE: Mike Ehrgott

REVIEWED BY: RZ Steffler
TITLE: ES TECHNICAL REVIEWER
SIGNATURE: R.Z. Steffler
DATE: 4-8-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete decommissioning at #C7738 | **DATE:** 04-08-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 41

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 | AHA-09-008, Rev. 0

SITE/EQUIPMENT INSPECTION: Yes (No) | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 Tubing (2 3/8") @ 80.0' to N/A ft bgs; S.U. 2.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

WORK SUMMARY

TIME	
0600	**Safety meeting at office. Topic: Working in adverse weather conditions.**
0630	Quarterly safety meeting was held.
0800	Standby, AOP-008 in effect.
1100	Lunch
1130	Standby, AOP-008 in effect.
1530	End of shift.

N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO:
HPT:
FWS:

WEATHER: 58 F, partly cloudy with a chance of showers, winds 30-40 mph from the southwest.

DOWNTIME: 9 Hrs.---Wind

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Warner
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Warner

REVIEWED BY: R2 Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R. J. Steffler
DATE: 4-8-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete decommissioning at #C7738, move to sample hole #C7740 2 DCA | **DATE:** 04-09-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 | **REPORT #:** 42

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 8 AHA-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1. N/A		
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7738 *Tubing* (2 3/8") @ 80.0' *to* G.S. *ft bgs; S.U.* 0

Borehole # C7740 2 DCA *Tubing* (2 3/8) @ 40.0' *to* N/A *ft bgs; S.U.* 2.3

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Look and Live!**
0615	Travel to "S Tank Farm.
0645	Onsite at "S" Tank Farm. Standby for pre-job, work package. (1hr standby)
0745	Pre-job with crew, gather Fuel, bentonite, Dress in whites
0846	Start decommissioning on C-7738 from 80' bgs
0930	Decommissioned hole C-7738 from 80' bgs to G.S. 2 DCA
0931	move HHU Rig and supplies to sample hole C-7740 and setup.
1030	Exited farm for Lunch
1100	Dress in whites, clean up dual string threads, setup zone, setup air samplers.
1230	Exited farm. Standbye for no operator (Sampler) support (2hr)
—	Travel to office, Timecard, paperwork.
1430	End of shift.
	N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Weakley
NCO: Ruben Rivera, Steve Williams
HPT: Paul Templeton, Bill Bernard
FWS: Bill Clark

WEATHER: 59 F, partly cloudy with southwesterly winds at 5-15 mph.

DOWNTIME: 1-hr. Pre-job 3hrs - 2hr. No sampler support

DISCARDED ITEMS: 5-bags Bentonite

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Mark A. Repko
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark A. Repko

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 4/12/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C7740/2 DCL

DATE: 04-12-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #: 10001270** | **REPORT #: 43**

START CARD NO. SE06208 | **DECOMMISSION NO. AE08107** | **RWP: CO-541, Rev. 8** | **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1.
2. N/A
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No)

HHU CASE#1 *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7740 DCL 2 *Tubing* (2 5/8") @40.0' *to* N/A *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Accident prevention: Why it is important to you!**
0620	Travel to Smurf Building for Safety Stand-down meeting.
0700	Attend Stand-down meeting at Smurf.
0800	Standby. Safety Stand-down.
1100	Lunch.
1130	Standby. Safety Stand-down.
1530	End of shift.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott
NCO: N/A
HPT: N/A
FWS: N/A

WEATHER: 61 F, partly cloudy with a chance of showers and westerly winds at 5-15 mph.

DOWNTIME: 9 Hrs.: Safety Stand-down

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: D. E. Sloglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Sloglie **DATE:** 4/13/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C774 DCL 2 | **DATE: 04-13-10**

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #: 10001270** | **REPORT #: 44**

START CARD NO. SE06208 | **DECOMMISSION NO. AE08107** | **RWP: CO-541, Rev. 8** | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1.
2. N/A
3.
4.

SITE/EQUIPMENT INSPECTION: *Yes* (No)

HHU CASE#1 *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C774 DCL 2 *Tubing* (3 3/8") @ 48.0' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Working Together. SAFETY FIRST!**
0615	Travel to "C" Tank Farm.
0645	Onsite at "C" Tank Farm. Standby for work package review. Moved miscellaneous to Energy Northwest for storage. Obtained "Hot
-----	Work" permit from ENW and applied hard facing to various pieces of tooling.
1100	Lunch
1130	Standby for work package review.
1530	End of shift.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Weakley
NCO: Sharp, Williams
HPT: Young
FWS: Clark

WEATHER: 62 F, Partly cloudy with a chance of showers.

DOWNTIME: 9 Hrs.: Work package review.

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 4/13/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly begin sampling activities at #C7749 DCS 2		**DATE:** 04-14-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 45

START CARD NO. SE06208	**DECOMMISSION NO. AE08107**	**RWP:** CO-541, Rev. 8 AHA-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** *Yes* (No)	*HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

SAMPLING SUMMARY

Sample #'s	*Interval*	*%*
1.		
2.	N/A	
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7749 DCS 2 *Tubing* (2 5/8") @ 40.0' *to* N/A *ft bgs; S.U.* 3.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Work clothes and safety. "Dressing for Safety".**
0630	Travel to "C" Tank Farm.
0700	Onsite at "C" Tank Farm. STANDBY FOR WORK PACKAGE REVIEW.
1100	LUNCH.
1130	STANDBY FOR WORK PACKAGE. RE-ACED UNDER NEW RWP: CO-541, REV. 9.
—	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005 *ES SUPPORT:* Ehrgott *NCO:* N/A *HPT:* N/A *FWS:* CLARK	**WEATHER:** 68 F, partly cloudy with southwest winds 5-15 mph **DOWNTIME:** 9 HRS: WORK PACKAGE	**DISCARDED ITEMS:** N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. WALKUP	**REVIEWED BY:** D.E. Sloglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: M.W. Walkup	**SIGNATURE:** David E. Sloglie **DATE:** 4/15/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Standby for samplers at #C774~~0~~2 DEL | **DATE:** 04-15-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 46

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No) | *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C774~~0~~2 DEL *Tubing* (2 5/8") @ 40.0' *to* N/A *ft bgs; S.U.* N/A

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Using good hygiene on the job.**
0615	Travel to "C" Tank Farm.
0645	Onsite at "C" Tank Farm. STANDBY FOR PRE-JOB.
0800	PRE-JOB BY D. CLARK - WRPS.
0830	STANDBY, NO SAMPLER SUPPORT.
1100	LUNCH.
1130	STANDBY, NO SAMPLER SUPPORT. TRAVELED TO OFFICE. COMPLETED PAPERWORK AND
—	TIMECARD.
1530	END OF SHIFT.
	N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: ~~Ehrgott, Amos~~ (N/A)
NCO: N/A
HPT: N/A
FWS: CLARK

WEATHER: 73 F, partly cloudy with light and variable winds

DOWNTIME: 9 HRS: SAMPLERS

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M.W. WALKUP
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: [signature]

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: [signature] **DATE:** 4/15/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling at #C774~~0~~2 DEG

DATE: 04-19-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford

EXCAVATION: DAN-3906 **U-DIG #:** 10001270

REPORT #: ~~46~~ DEG 47

START CARD NO. SE06208

DECOMMISSION NO. AE08107

RWP: CO-541, Rev. 9 **AHA**-09-008, Rev. 0

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24YW0	40'-42'	93%
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C774~~0~~ DEG 2 Tubing (2 5/8") @ 40.0' to 54.0 ft bgs; S.U. 4.3'

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ___

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Safety and saving time.
0700	Travel to "S" Tank Farm.
0730	Onsite at "S" Tank Farm. STANDBY FOR WORK PACKAGE AND PRE-JOB.
0845	PRE-JOB BY B. CLARK. WRPS.
0900	WORK WAS SHUT DOWN FOR SAFETY ISSUES RAISED BY NCO'S. IS WORK
—	INTRUSIVE OR NOT?. WILL BE ADDRESSED BY FOS CLARK.
1045	ISSUE HAS BEEN TEMPORARILY RESOLVED. DRESS AND ENTER FARM. FUEL,
—	INSPECT AND WARM HHUXL. NO PROBLEMS NOTED. BACK-PULL INNER STRING
—	AND DUMMY TIP.
1142	RUN INNER STRING AND SAMPLER IN. DRIVE SAMPLE FROM 40.0' BGS TO 42.0' BGS AT
—	1156 HRS. AND RETRIEVE. ~93% RECOVERY. SAMPLE # B24YW0. EXITED FARM.
1230	LUNCH.
1300	DRESS AND ENTER FARM. RUN INNER STRING AND DUMMY TIP IN. DROVE DUAL WITH
—	DUMMY TIP FROM 42.0' BGS TO 54.0' BGS. SECURED FOR END OF SHIFT AND
—	EXITED FARM.
1425	TRAVELED TO OFFICE. COMPLETED PAPERWORK AND TIMECARD.
1530	END OF SHIFT.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Ehrgott, Amos
NCO: SHARP, WILLIAMS, RIVERA
HPT: WIDDIS
FWS: CLARK

WEATHER: 80 F, partly cloudy with light and variable winds

DOWNTIME:
2 HRS: WORK PACKAGE

DISCARDED ITEMS:
3: SS LINERS
6: LINER CAPS
7: LYNCH PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. WALKUP
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: M. W. Walkup

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David Skoglie **DATE:** 4/20/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling at #C774~~p~~2 DEA		**DATE:** 04-20-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 48
START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 9 AHA-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** (Yes) No	*HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1. N/A		
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C774~~p~~2 DEA *Tubing* (2 3/8") @ 54.0' *to* 96.0' *ft bgs; S.U.* 2.3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Protect Your Hands**
0615	Travel to "C" Tank Farm for pre-job.
0640	Onsite at "C" Tank Farm.
0735	Pre-Job at C-Tank Farm / Standby for Pre-Job, Re-directed to have
—	pre-Job back at S-Tank Farm, driving back to S-Farm.
0745	Arrive at S-Tank Farm. Pre-Job with everyone. Dress in whites, Fuel
—	rig and generators, equipment inspection. re-adjust master XXL.
0850	Start driving on C774~~p~~2 DEA from 54.0' bgs.
0910	Stop for Take cover drill.
0915	Start drilling on C774~~p~~2 DEA from 60.0' bgs.
0945	Rig head hot at 64.0 bgs, stop let it cool. Dress out of whites, Take break
1015	Dress in whites, start drilling at 64.0' bgs.
1112	Drove to 80' bgs, Let head cool, Take lunch.
1130	Lunch
1200	Dress in whites, Start drilling from 80.0 bgs.
1300	Drove to next sample interval at C774~~p~~2 DEA to 96.0' bgs, cleanup, shot off air
—	samplers, exit zone.
1330	Drive to office, paperwork
1530	End of shift.
	N/A

OPERATOR/LICENSE: Repko/3012 *ES SUPPORT:* Passey, *NCO:* Sharp, Rivera, Williams *HPT:* Dunya, Widdis *FWS:* Bill Clark	**WEATHER:** 67 F, partly cloudy with a chance of thunderstorms and winds from the southwest at 10-20 mph **DOWNTIME:** 1Hr - Pre-Job	**DISCARDED ITEMS:** 1-2 3/8 Drive head sub 14-Lynch pins 1-nitrile donut

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Mark A. Repko	**REVIEWED BY:** D.E. Shoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Mark A. Repko	**SIGNATURE:** David E. Shoglie **DATE:** 4/21/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling at #C7740 2 DCA

DATE: 04-21-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford

EXCAVATION: DAN-3906 **U-DIG #:** 10001270

REPORT #: 49

START CARD NO. SE06208

DECOMMISSION NO. AE08107

RWP: CO-541, Rev. 9 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No)

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740 Tubing (2 DCA) @ 900' to ft bgs; S.U. 2.3'

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Understanding Safety Signs.
0630	Drive to Sx-Tank Farm.
0705	Arrive at Sx-Tank Farm. Standby for Pre-Job
0750	Pre-Job with crew. no sampling support no sample today. Talked to
—	Fieldwork supervisor about staging 2½ casing by gate (1000') was told to wait
—	until needed. Standby for no operator sampling support today.
0930	Helped ES. Safety take pictures of winch assembly. cleanup horse Trailer.
1030	Done with pictures.
1031	Standby no sampling support.
1100	Lunch
1131	Standby no sampling support
1300	Drive to ESFS, paperwork, timecard
1530	End of shift.

N/A

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Passey, Zane
NCO: Williams, sharp,
HPT: Widdis, Laurendeau
FWS: Bill Clark

WEATHER: 60 F, partly cloudy with a chance of rain and winds from the southwest at 5-15 mph

DOWNTIME: 8hr. no sampling support

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Mark A. Repko
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark A. Repko

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 4/22/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling at #C7742 DCL

DATE: 04-22-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford

EXCAVATION: DAN-3906 **U-DIG #:** 10001270

REPORT #: 50

START CARD NO. SE06208

DECOMMISSION NO. AE08107

RWP: CO-541, Rev. 9 **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.		
2.	NA	
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No)

HHU CASE#1 *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7742 DCL *Tubing* (2 3/8") @ 96.0' *to* *ft bgs; S.U.* 2.3

Borehole # N/A *Tubing* (~) @ ~ *to* ~ *ft bgs; S.U.* ~

Borehole # N/A *Tubing* (~) @ ~ *to* ~ *ft bgs; S.U.* ~

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Why Take A Chance?**
0625	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm. - stand-by for pre-job and sampling support,
~	no work package. Install spill containment on flammable
~	storage, clean-up and load new rods into racks while standing
~	by.
1130	Lunch
1200	Continue stand-by for sampling support, clean-up and organize
~	equipment while standing by
1430	Travel to office, paperwork and time cards
1530	End of shift

NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson, Passey
NCO: Sharp, Rivera
HPT: Withus, Devenkee
FWS: Clark

WEATHER: 73 F, mostly sunny and winds from the southwest at 5-10 mph

DOWNTIME: 9 hr for sampling support

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler **DATE:** 4-23-10

10/06/09 Rev 1

RPP-47274, Rev. 0

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling at #C7740/2 DEL | **DATE: 04-23-10**

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 **U-DIG #: 10001270** | **REPORT #: 51**

START CARD NO. SE06208 | **DECOMMISSION NO. AE08107** | **RWP: CO-541, Rev. 9** **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24YW1	96-98'	100%
2. NA		
3. NA		
4. NA		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740/2 DEL *Tubing* (3 1/8") @ 96.0' *to* 98.0' *ft bgs; S.U.* ____

Borehole # N/A *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # N/A *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Safe Use Of Compressed Gas Cylinders.**
0620	Travel to "S" Tank Farm.
0700	Onsite at "S" Tank Farm., stand-by for pre-job, RCTS
0730	Pre-job, RCTS on site
0800	Ace in, enter change trailer, dress in, inspect rig,
\	screators back pull inner string, after setting up winch
\	system, install sampler, drove sample from 96' to 98' at
\	10:05 A.M pulled and processed sample (100% recovery) installed
\	dummy tip, re-positioned rig on hole, survey out.
12:00	Lunch
12:30	Dress in, noticed hole # did not appear to match
—	rig location, entered zone with map, checked location,
—	found rig set up on C-7742, checked other locations,
—	secure site survey out.
13:30	Travel to office, paperwork time cards
14:30	End of shift
	NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: Sharp
HPT: Minsey, Hollinsworth
FWS: Clark

WEATHER: 71 F, mostly sunny and winds from the southwest at 5-15 mph

DOWNTIME: .5 hr for pre
2 hr for wrong location.

DISCARDED ITEMS:
3 sample liners
6 liner caps

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-26-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling at #C7742 | **DATE:** 04-26-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 52

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7742 Tubing (2 5/8) @ 98' to 135' ft bgs; S.U. 3.3'

Borehole # N/A Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # N/A Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: CONDUCT OF OPERATIONS! Time to re-focus
0620	Travel to 'Smart' building
0650	Attend operators morning meeting, new requirement implemented of N.C.O. in
\	tank farm during all operations with drilling crew.
0730	Travel to S-farm, stand-by for pre-job
08:00	Pre-job
0930	Stand-by for filter change crew to clear change trailer
1000	Dress in, inspect rig, start generators, Drive from 98' to 108', survey out
1130	Lunch
1200	Dress in, reposition rig on hole, drove C-7742 from 108'
\	to 135', (sample depth), broke 2 5/8" drive head at 120',
\	replaced unit., Fuel generators and rig and survey out.
1430	Travel to office, paperwork and time-cards
1530	End of shift

NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson, Passey
NCO: Sharp, Rivera
HPT: Young, Minney
FWS: Clark

WEATHER: 72 F, mostly sunny and winds from the southwest at 5-10 mph

DOWNTIME: 1.5 hr for pre-job
.5 hr for other URPS work

DISCARDED ITEMS:
1 - 2 5/8" drive-head
12 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-27-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Standby for samplers at #C7742 | **DATE:** 04-27-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 53

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | *HHU CASE#1* | *HHU CAT #2* | *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C-7742 Tubing (2 5/8) @ 135' to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: What To Do In Case Of Fire.
0640	Travel to S-Farm
0710	Stand-by for sampling support
1130	Lunch
1200	Continue stand-by for sampling support, enter farm segregate rod
~	into racks of 55 per rack, mark holes and evaluate rig for
~	front jacks while standing by. Survey out.
1430	Travel to office, paperwork and time cards
1530	End of shift

NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson, Posey
NCO: Sharp, Rivera
HPT: Willus, Young
FWS: Clark

WEATHER: 63 F, mostly cloudy with a chance of showers. Winds from the south at 10-20 mph

DOWNTIME: 9 hr for sampling support

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-28-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Standby for samplers and wind at #C7742 | **DATE:** 04-28-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 54

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes* (No) | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C-7742 *Tubing* (2 5/8") @ 135' *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Recognizing Work Area Trip Hazards.
0630	Travel to S-farm
0700	Stand-by for high winds, pick-up bit for installing power
\	disconnect switch for lock & tag on Barreta Rig XL #3 at 200 East
\	tool crib, return to S-farm, enter farm and install switch
\	while standing by, survey out.
1130	Lunch
1200	Continue stand-by for wind, enter farm, move 2 1/2"
\	casing to central location and check out rig for jack
\	placement while stand-by for wind, survey out
1430	Travel to office, paperwork, time-cards
1530	End of shift
	NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson, Passey
NCO: Sharp, Rivera
HPT: Young, Willus
FWS: Clark

WEATHER: 59 F, mostly cloudy with a chance of showers. Winds from the south at 15-25 mph with gusts 30 mph and up.

DOWNTIME: 9 hr for wind

DISCARDED ITEMS: 1 Power disconnect switch

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-29-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly complete sampling activities at #C7742 | **DATE:** 04-29-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 55

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes (No) | *HHU CASE#1* | *HHU CAT #2* | (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C-7742 *Tubing* (2 5/8") @ 135' *to* *ft bgs; S.U.* ____

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Your Hearing---Keep it for a Lifetime.
0620	Travel to 'S' farm
0700	Arrive at 'S' farm, stand-by for high winds, return
\	to office, work on required reading while stand-by
\	for wind.
1130	Lunch
1200	Continue stand-by for high winds
1530	End of shift
	NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: Sharp, Rivera
HPT: Young, Wittus
FWS: Clark

WEATHER: 62 F, partly cloudy with winds from the west sustained at 20-30 mph.

DOWNTIME: 9 hr for wind

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 4-29-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly complete sampling activities at #C7742 | **DATE:** 05-03-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 56

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: *Yes No*

HHU CASE#1 HHU CAT #2 HHUXL#3

BOREHOLE SUMMARY

Borehole # C-7742 *Tubing* (2 5/8") @ 135' *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Protecting Your Eyes.
0630	Stand-by for high winds, no entry to Rad areas.
1130	Lunch
1200	continue stand-by for high winds
1530	End of shift
	NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: Sharp, Rivera
HPT: Withus, Young
FWS: Clark

WEATHER: 67 F, partly cloudy with winds from the west sustained at 25 mph with gusts by mid-day 50-60 mph.

DOWNTIME: 9 hr for high winds

DISCARDED ITEMS: NA

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler **DATE:** 5-4-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly complete sampling activities at #C7742		**DATE:** 05-04-10
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 57

START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541, Rev. 9 **AHA**-09-008, Rev. 0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** Yes No	*HHU CASE#1* *HHU CAT #2* *HHUXL#3*

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24YW6	135'-137'	100%
2.	NA	
3.		
4.		

BOREHOLE SUMMARY

Borehole # C-7742 Tubing (2 5/8") @ 135' to 137' ft bgs; S.U. 1.3'

Borehole # \ Tubing ( ) @ to ft bgs; S.U. ___

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Flammable liquid safety.
0630	Travel to S farm
0710	stand-by for pre-job - see in
0810	Pre-job meeting
0830	Dress into whites, enter farm, inspect rig and fire extinguishers,
\	fuel and start generators, back-pull dummy tip from 135' to 0',
\	install sampler to depth, survey out.
1030	stand-by for permission to drive sample
1045	Receive permission to drive sample, dress in, enter farm,
\	drive sample #B24YW6 from 135' to 137' at 1100 A.M., pulled sample,
\	cleaned threads on inner rod, survey out, processed sample.
1200	Lunch
1230	Stand-by for wind and rain
1430	Travel to office, paperwork and timecards
1530	End of shift
	NA

OPERATOR/LICENSE: Repko/3012 *ES SUPPORT:* Olson *NCO:* Sharp, Rivera *HPT:* Withus, Young *FWS:* ~~Clark~~ K.O Sharp	**WEATHER:** 59 F, partly cloudy with winds from the west at 15-25 mph with gusts 30-35mph. **DOWNTIME:** 1 hr for pre job .25 hr for direction 2 hr for wind train	**DISCARDED ITEMS:** 6 liner caps 3 sample liners

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson	**REVIEWED BY:** D.E. Skoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Kelly Olson	**SIGNATURE:** David E. Skoglie **DATE:** 5/05/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin decommissioning activities at #C7742, move and set up on C7740 | **DATE:** 05-05-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 58

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7742 Tubing (2 5/8") @ 137' to 0' ft bgs; S.U. \

Borehole # C7740 Tubing (2 5/8") @ 0' to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Driving Safely in Traffic.
0630	Travel to S-farm
0710	Arrive at S-farm, gather materials for decommissioning
0715	Pre job
0730	stand-by for Key to farm
0800	Dress in, inspect rig, fuel generators, move bentonite to site,
\	back-pull C7742 from 137' to 0' while filling bore-hole with
\	granular bentonite. survey out.
1130	Lunch
1200	Enter farm, move rig, zone, pipe and equipment
\	to C7740, set up for driving sample system, set up rig
\	2' west of C7739
1330	Exit farm when lightning seen to the south,
\	survey out.
1345	stand-by for lightning
1430	Travel to office, paperwork and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Repko/3012
ES SUPPORT: Olson
NCO: Rivera, Williams
HPT: Mincey, Wittvs
FWS: Sharp

WEATHER: 57 F, partly cloudy with winds from the southwest at 5-15 mph with slightly higher gusts.

DOWNTIME: .5 hr for Keys, .75 hr for lightning

DISCARDED ITEMS:
8 sacks bentonite (granular)
1 2 5/8" Tip holder

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/06/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Possibly sample at #C7740 | **DATE:** 05-06-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 59

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	N/A	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740 *Tubing* (2 3/8) @ 0 *to* 40 *ft bgs; S.U.* 2-3'

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

Borehole # N/A *Tubing* ( ) @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Use good rad-con techniques when donning and doffing SWP's.
0630	Drive to C-Tank Farm
0700	Arrived at C-Tank Farm. No E.S.F.S. employees to work on S-farm
—	work.
1200	Lunch (Finished work at C-Farm, Going to go work on S-Farm)
1230	Drove to S-Tank Farm,
1245	Dress in whites enter farm start driving dual wall from G.S.
1400	Drove dual wall from G.S. to 40 bgs., Clean up site, exit farm
1420	Drive to E.S.F.S, paperwork, Timecard
1530	End of shift.

N/A

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT: Mark Repko, Olin Amos
NCO: Sharp, Rivera, Williams
HPT: Mincey
FWS: N/A

WEATHER: 66 F, partly cloudy with winds from the southwest at 10-20 mph with slightly higher gusts.

DOWNTIME: N/A

DISCARDED ITEMS: N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Mark A. Repko
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mark A. Repko

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/07/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7740		**DATE: 05-07-10**
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #: 10001270**	**REPORT #: 60**

START CARD NO. SE06208	**DECOMMISSION NO. AE08107**	**RWP: CO-541, Rev. 9** **AHA-09-008, Rev. 0**
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** *Yes* *No*	***HHU CASE#1*** ***HHU CAT #2*** ***HHUXL#3***

SAMPLING SUMMARY

Sample #'s	*Interval*	*%*
1. B24YW4	40'-42'	100%
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7740 *Tubing* (3 1/8") @ 40.0' to 40.0' *ft bgs; S.U.* 3'

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

Borehole # N/A *Tubing ( ) @ to ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1. N/A		
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Grounding and GFCI's.**
0630	Travel to "C" Tank Farm.
0700	Standby for samplers and pre-job.
0820	Decision was made to sample at "S" Tank Farm instead of "C" Tank Farm surface sample.
0830	Travel to "S" Tank Farm.
0840	Pre-job at "S" Tank Farm.
0845	Dress and enter farm. Fuel and inspect HHUXL, no problems noted. Fuel generators. Pull inner string and dummy tip. Install
-----	inner string and sampler. Drove sample from 40.0' bgs to 42.0' bgs at 0948 Hrs. and retrieved. 100% recovery. Sample number
-----	B24YW4. Secured site and equipment. Exited farm.
1030	Standby for lack of personnel.
1100	Lunch.
1130	Standby for lack of personnel.
1430	End of shift.
	N/A

OPERATOR/LICENSE: Olson/1217 *ES SUPPORT: Walkup* *NCO: Williams, Sharp, Rivera* *HPT: Mincey* *FWS: N/A*	**WEATHER: 66 F, partly cloudy with winds from the southwest at 10-20 mph with slightly higher gusts.** **DOWNTIME: 2 Hrs. for pre-job and samplers, 4 Hrs. for lack of personnel.**	**DISCARDED ITEMS:** 3: SS Sample Liners, 6: Liner Caps

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson	**REVIEWED BY:** D E. Skoglie
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Kelly Olson	**SIGNATURE:** David E Skoglie **DATE:** 5/10/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7740 | **DATE:** 05-10-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 61

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7740 Tubing (2 5/8") @ 42' to 74' ft bgs; S.U. 3'

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Back Safety.
0630	Travel to 'S' farm
0700	Arrive at 'S' farm, stand-by for pre-job + package, Ace in
0800	Pre-job
0820	Dress into whites, Enter farm, inspect rig and generators,
\	drive C-7740 from 42' to 64' after installing dummy tip.
\	Exit zone for tools to re-set allen screw for drive head retainer
\	bearings and let head cool
1030	let head cool
1100	Re-set allen screw with lock tight, drive from 64' to 74'
\	(hard driving), survey out.
1215	Lunch
1245	Stand-by for rain, no rain shield for air sampler
\	Travel to office, paperwork, time-cards
1630	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Williams, Rivera
HPT: Wattus, Young
FWS: Sharp

WEATHER: 63 F, partly cloudy with winds from the southwest at 10-20 mph with slightly higher gusts.

DOWNTIME: 1 hr for pre-job
2.75 hr for rain

DISCARDED ITEMS:
8 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Ol

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/11/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7740 | **DATE:** 05-11-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 62

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7740 *Tubing* (2 5/8") @ 74' *to* 95' *ft bgs; S.U.* 3.3'

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Hot Work Permits. When and Where to use Them.
0630	Travel to 'S' farm
0710	Arrive at 'S' farm, Pre-job
0730	Dress into whites, enter farm, inspect rig and generators,
\	fuel equipment, drive from 74' to 80', broke 2 5/8" drive head,
\	while tapping out large pin with hammer Kelly was struck by metal
\	sliver in neck, applied towel to wound, exited to change trailer, HPT surveyed
\	wound, made appropriate contacts, bagged towel as bio-hazard, went to
\	200 West first aid where metal sliver was removed. return to
\	'S' farm.
1130	Lunch
1200	Mark Repkoe and Mike Passey dress into whites, Enter farm,
\	change out broken drive head, trouble removing upper broken
\	half from adaptor sub, drove sample hole C-7740 from 80'
\	to 95', head was hot, left one foot to drive to sample depth,
\	Exit zone, survey out.
1430	Travel to office, paperwork, and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko / Passey
NCO: Williams, Rivera
HPT: Witus, Young
FWS: Sharp

WEATHER: 69 F, partly cloudy with winds from the northwest at 5-10 mph.

DOWNTIME: 1 hr for repairs
4 hr for injury

DISCARDED ITEMS:
1-2 5/8" drive head
8 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/12/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7740 | **DATE:** 05-12-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 63

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

	Sample #'s	Interval	%
1.	B24YW5	96-98	100%
2.	\	\	\
3.	\	\	\
4.	\	\	\

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740 Tubing (2 5/8") @ 95' to 112' ft bgs; S.U. 2.3'

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Injury reporting when in a CA.
0630	Travel to 'S' farm
0710	Arrive at 'S' Farm, stand-by for pre-job, gather materials
0740	Pre-job
0745	Dress into whites, fuel rig and generators, inspect rig, grease head
0830	Drive C7740 from 95' to 96', pull dummy tip, install sampler,
\	drive sample #B24YW5 at 0917 A.M. from 96' to 98', pull
\	sampler, survey out, Process sample, 100% recovery.
0945	Exit zone for water break, attend meeting for corrective action
	to protect against injury while driving out drive head pin. Actions decided
	upon include use of 'softer hammer' (brass or plastic etc.) use of
	face shield, and personell moving behind rig for shielding.
1005	Dress into whites, install dummy tip, drive C7740 from
\	98' to 100', take pictures of winch rigging on XL rig, survey out.
1145	Lunch
1215	Dress into whites, enter farm, drive C7740 from 100' to
\	112', Broke outer string on sampling rod, verified rod
\	broken by pulling outer string and checking movement of inner
\	string in relation.
1400	Survey out of zone, notify management of break
1430	Travel to office, paperwork, Time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Ehrgott, Passey
NCO: Sharp, Rivera, Williams
HPT: Wittus, Young
FWS: Clark

WEATHER: 75 F, mostly sunny with winds from the southwest at 5-10 mph.

DOWNTIME: .5 hr for pre-job
.5 hr for break in pipe

DISCARDED ITEMS:
6 liner caps
3 sample liners
8 Lynch Pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dan E Skoglie **DATE:** 5/13/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Decommission #C7740 and begin driving #C7740A | **DATE:** 05-13-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 64

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7740 Tubing (2 5/8") @ 112' to 110' ft bgs; S.U. -4'

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Use of power tools in tank farms.
0630	Travel to "S" Farm
0710	Stand-by for pre-job / HPT's
0740	Pre-job
0800	Dress into whites, enter zone, inspect rig and generators,
"	back pull inner string and dummy tip, back pull broken
"	2 5/8" casing, found broken box top of 3rd joint down, top of break
"	approximatel, 6', installed ¼ to ½ sack granular bentonite, bentonite bridged
"	and filled to ground surface, Exit zone to discuss options.
1015	gather materials for attempting to clear bentonite and fish broken pipe.
11:30	Lunch
1200	Enter farm clean out bentonite above broken Rod with
"	auger, Tag top of break at 6' 1", Tag bottom of hole
"	at 108.5', installed taper tap pulled broken rod 2'
"	from 112' to 110' - Tap pulled loose, survey out of
"	zone
1430	Clean-up, Travel to office, paperwork and time-card
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Passey
NCO: Sharp, Rivera
HPT: Young, Lemmons, Daya
FWS: Clark

WEATHER: 81 F, mostly sunny with light and variable winds.

DOWNTIME: .5 hr for Pre-job
1.25 hr for break in pipe

DISCARDED ITEMS: 1 sack bentonite

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dan E Skoglie **DATE:** 5/17/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue fishing and decommissioning activities at #C7740 | **DATE:** 05-17-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 65

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C-7740 Tubing (2 5/8") @ 110' to 0 ft bgs; S.U. ✓

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Moving HHU's on highways.
0615	Travel to 'S' farm
0645	Arrive at 'S' farm, stand-by for pre-job
0745	Pre-job
0800	Dress into whites, enter farm, inspect rig and generators
~	Back-pull C-7740 to 98' with taper tap to remove broken
~	joint, removed broken joint, tagged 6' of fill inside 2 5/8" casing,
~	after trying to clear fill, back-pulled remaining 25 joints to
~	surface, cleaned bentonite and gravel out of last joint and bottom
~	assembly, survey out.
1030	water-break, gather equipment for cleaning and re-drill
1045	Dress into whites, clean pipe, break taper tap loose
~	while installing 2 5/8" drive head, drive head was dropped in
~	hole, measure head at 4', Dress out.
1200	Lunch
1230	Re-enter zone check position of head in hole, checked
~	energy N. Co. for magnets or fishing equipment.
~	call to locate magnet for fishing driving head, located
~	one at harbor freight.
1430	Travel to office, paperwork and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Rievera, Williams, Sharp
HPT: Witkus, Young
FWS: Clark

WEATHER: 91 F, mostly cloudy, chance of thunderstorms and winds from the southwest at 5-15 mph.

DOWNTIME: 1 hr for prejob
8 hr - fishing

DISCARDED ITEMS:
2 2 5/8" x 4' rods

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 5/18/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue fishing and re-drive #C7740 to sample depth | **DATE:** 05-18-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 66

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740 Tubing (2 5/8") @ 110 to 0' ft bgs; S.U. ✓

Borehole # C7740-A Tubing (2 5/8") @ 0' to 60' ft bgs; S.U. 2.3

Borehole # ✓ Tubing (/) @ ✓ to ✓ ft bgs; S.U. ✓

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Electrical LOTO.
0630	Travel to 'S' farm
0710	Arrive at 'S' farm, stand-by for pre-job
0730	Pre-job
0745	gather tools for fishing 2 5/8" drive-head, inspect rig,
	un-able to pull ~~pitter head~~ K-O drive head out, drove head to
	approximately 90' with Knucker bar, back-filled C-7740 to surface
	with granular bentonite, move 2' north of C-7740, set up on
	C-7740-A, drove to 28', survey out
1030	Break
1045	Dress into whites, Drive C-7740 from 28' to 44'
—	Survey out.
12:15	Lunch
12:45	Gather equipment, dress into whites, drive from 44'
	to 60' Bgs, letting head cool once, survey out
1430	Exit farm, travel to office, paperwork and time cards
1530	End of shift

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Rivera, Williams, Sharp
HPT: Withus, Young
FWS: Clark

WEATHER: 71 F, mostly cloudy, chance of rain and winds from the southwest at 10-20 mph.

DOWNTIME: .5 hr for pre-job

DISCARDED ITEMS:
6 sacks bentonite
2 2 5/8" drive-head

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/19/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue driving #C7740A to sample depth | **DATE:** 05-19-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 67

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No

HHU CASE#1 *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7740A Tubing (2 5/8") @ 60' to 84 ft bgs; S.U. 2.3'

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Seven Common Accident Causes.
0620	Travel to 'S' farm
0700	Arrive at 'S' farm pre-job
0730	Dress into whites, inspect and fuel sig and generators,
\	drive C7740A from 60 to 68' let head cool ½ hr drove
\	from 68' to 72', let head cool, Drove to 84', survey
\	out.
1130	Lunch
1200	stand-by for safety expo, travel to office
1530	End of shift.

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Sharp, Rievera, Williams
HPT: Withus
FWS: Clark

WEATHER: 79 F, partly cloudy, chance of rain and winds from the south at 5-10 mph

DOWNTIME: 3.5 hr for safety expo

DISCARDED ITEMS: 12 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 5/19/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue driving #C7740A to sample depth | **DATE:** 05-20-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 68

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION** (Yes) No | *HHU CASE#1* *HHU CAT #2* (*HHUXL#3*)

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7740A Tubing (2 5/8") @ 84' to 108 ft bgs; S.U. 2.3'

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Hot Water and Steam Cleaning.
0615	travel to "S" farm
0645	Arrive at "S" farm, Pre-job
0715	Gather equipment, Dress into whites, enter farm, inspect
\	rig and generators, drive C7740A from 84' to 100', let
\	head cool, Drove from 100' to 108', when adding next
\	joint found inner rod head broken, back pulled inner rod
\	found broken joint 64' down from Top, un-able to pull other rod
\	due to wind, survey out
1100	Lunch
1130	Stand-by for wind, Travel to office, paperwork and
\	time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Sharp, Rivera, Williams
HPT: Witts, Young
FWS: Clark

WEATHER: 65 F, partly cloudy, chance of rain and winds from the southwest at 10-20 mph

DOWNTIME: 4hr for wind

DISCARDED ITEMS:
1 inner rod (4' Joint)
8 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Ol

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 5/21/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Fish inner string and re-drive to sample depth at #C7740A | **DATE:** 05-21-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 69

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.		
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7740A Tubing (2 5/8") @ 108' to 40' ft bgs; S.U. 2.3'

Borehole # " " Tubing (2 5/8") @ 40' to 104' ft bgs; S.U. 2.3

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: The Three-Point Rule.
0615	Travel to 'S' farm
0645	Pre-job
0700	Stand-by for RCTs
0800	Enter farm, inspect rig, fuel generators, back-pull casing
	from 108' to 40', remove broken joint of inner rod, pull
	remaining inner rod + install new 'O' rings, install inner rod to
	40', re-drive from 40' to 68', hole collapsed at 48',
	hard driving, survey out.
1100	Lunch
1130	Dress into whites, drive C7740A from 68' to 104, (hole
	open from 75' to 95') head heated up, survey out.
1315	Travel to office, paperwork and time cards
1430	End of shift

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Williams
HPT: O'Dell, Clayton
FWS: Rivera

WEATHER: 63 F, mostly cloudy, chance of rain and winds from the southwest at 5-15 mph

DOWNTIME: 1 hr for RCTs

DISCARDED ITEMS: 12 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Ol

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 5/21/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Drive pipe to sampling depth at #C7740A and clean pipe for transport to "BY" Farm | **DATE:** 05-22-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 70

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7740A Tubing (2 5/8") @ 104' to 116' ft bgs; S.U. 2.3

Borehole # C7740A Tubing (2 5/8") @ 116' to 0 ft bgs; S.U. 0

Borehole # _____ Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: General Safety----It's Your Decision. , Travel to 'S' farm
0600	Arrive at 'S' farm - stand-by for Pre-job
0715	Pre-job
0730	Dress into whites, enter farm, inspect rig, drive C-7740A from
	104' to 116', when adding joint found inner rod had seperated
	at 116' survey out, discuss options, pipe being cleaned truveyed out.
900	Break
915	Reenter farm, back pull inner rod, found broken
	joint 64' down from top, back pull outer rod and
	clean threads from 116 to 60', survey out
1100	Lunch
1130	stand-by for RCTs
1200	RCTs on site, dress into whites, back-pull outer rod
	to 44', pull remaining inner rod, found crack on Box x
	Box joint for dummy tip, Tagged hole, hole caved to 49.5',
	pulled remaining outer rod, cleaned and capped rods,
	survey out.
1415	Travel to office, paperwork and time cards.
1500	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Weakley, Walkup
NCO: Snook, Williams, Sharp
HPT: Vonsblood, Clayton, Minney
FWS: Clark

WEATHER: 65 F, mostly cloudy, chance of rain and winds from the southwest at 10-20 mph

DOWNTIME: 1.25 hr for pre-job
.5 hr for RCT

DISCARDED ITEMS:
1 4' inner rod
8 Lynch pins
1 2' Box x Box inner rod

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/24/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 2

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Decommission #C7740A and clean pipe for transport to "BY" Farm | **DATE:** 05-23-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 71

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION:** (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7740A Tubing (2½") @ 116' to 0' ft bgs; S.U. 0'

Borehole # C7745 Tubing (2½") @ 155' to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
~~0600~~ 0530	Safety meeting at office. Topic: Was it an accident or was it an error?
0545	Travel to 'S' farm
0615	Arrive at 'S' farm, stand-by for RCTs and pre job
0700	RCTs on site - Pre-job
0715	Acc in, dress into whites, inspect rig, fuel rig and
\	generators, move 2½" rod to site, in order to decommission
\	Drove 2½" rod and expendable tip through bridged area until hole
\	became solid at 88', Back-pull 2½" to ground surface while
\	back-filling with granular bentonite, Move rig to C7745
\	and set up, begin set up on zone. Survey out
1230	Lunch
1300	Dress into whites, finish zone set-up, tag C-7745 at 155' b.g.s.,
\	Moved air samplers, cut up old plastic + felt, marked holes,
\	finish clean-up and moving equipment. survey out
1415	Travel to office, paperwork and time cards
1500	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Weekley, Barsoff
NCO: Snook, Williams, Siedell
HPT: Clayton, Mincey
FWS: Clark, Lehmann

WEATHER: 71 F, mostly cloudy, chance of rain and winds from the southwest at 10-20 mph

DOWNTIME: 45 min for pre-job

DISCARDED ITEMS:
6 bags bentonite
1 expendable tip

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/24/10

10/06/09 Rev 1

ENERGYSOLUTIONS

DAILY WORK RECORD – CONTINUATION PAGE

Page 2 of 2

PURPOSE: SURVEY & CLEAN DRILL PIPE

Date	Boring #	Continuation of Report No.
05-23-10	C7740A	71

TIME	WORK SUMMARY
0530	MEET AT OFFICE SAFETY TOPIC: GENERAL SAFETY
—	AND TRAVEL TO S-FARM
0605	ARRIVED ON SITE, STANDBY FOR PRE-JOB.
0700	RCT'S ON SITE
0705	PRE-JOB BY B. CLARK
0715	SET UP TO CLEAN PIPE AND PLACE INTO LINKS
—	BAG, OUTSIDE OF S-FARM. RCT'S SURVEY PIPE OUT
—	OF ZONE.
1020	COMPLETED SURVEY & CLEANING OF PIPE AND
—	PLACED IN LINKS BAGS, NCO'S PLACED RACKS
—	OF CLEAN PIPE INTO RMA. ~ 125-4' ROD & 5-2' ROD
—	2½" SURVEYED AND CLEANED. SUPPORT EQUIPMENT PLACED IN TRAILER
1100	M. EHRGOTT & M. WEAKLEY LEAVING S-FARM FOR OFFICE
1135	ARRIVE AT OFFICE PAPERWORK & TIMECARDS.
1200	SHIFT COMPLETED.
—	ES SUPPORT: EHRGOTT, WEAKLEY
—	NCO: SIEDELL, WILLIAMS
—	RCT'S MINCEY, CLAYTON
—	FWS B. CLARK

SURVEY & CLEAN PIPE

N/A

Report By	MIKE EHRGOTT	Reviewed By	D.E. Skoglie		
Title	ES Technical Preparer	Title	ES Technical Reviewer	Date	5/24/10
Signature	Mike Ehrgott	Signature	David E Skoglie		100609 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin multi-level probe installation in #C7745 and drive C7746 to sample depth

DATE: 05-24-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford

EXCAVATION: DAN-3906 **U-DIG #:** 10001270

REPORT #: 72

START CARD NO. SE06208

DECOMMISSION NO. AE08107

RWP: CO-541, Rev. 9 **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No

HHU CASE#1 *HHU CAT #2* (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7745 *Tubing* (2½") @ 155' *to* 148' *ft bgs; S.U.* 2.3

Borehole # C7746 *Tubing* (2⅝") @ 0' *to* 44' *ft bgs; S.U.* 2.3'

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at Sterlings. Topic: Protective headwear.**
0900	Quarterly safety meeting at 2345 Stevens, main office. Topic: Violence in the workplace. Presented by the Richland PD.
1000	Travel to 'S' farm
1040	Arrive at 'S' farm, stand-by for pre-job
1100	Pre-job
1130	Lunch
1200	stand-by for Farm Key
1230	Dress into whites, Enter tank farm, fuel generator, inspect rig,
\	Move remaining equipment; moved 2⅝" drill rods into farm, back-pull
\	C7745 from 155' to 153' in order to clear to swing west to sample
\	hole, swung 2½' west and set up on C7746, drove from 0' to 44'
\	(sample interval), swung back and re-set on C-7745, survey out.
1630	Gather materials for setting Probe at 200 East and 'green-hut', pick-up
\	tremie pipe, measure out Probe, Figure out intervals for sand,
\	Diatomite & Bentonite, set up additional generator and lights.
1900	Lunch
1930	Dress into whites, move materials and additional rod rack into farm,
\	Knock out expendable tip back-pull 2½ DEA" casing at C7745 from 153'
\	to 148' install sand to 153.5', Diatomite 153.5 to 153', install moisture probe, to 153'
\	install diatomite 153' to 151', install sand 151' to 150', install 151.5' ½" tremie
\	pipe to 148.5' (.5' below bottom of casing, installed 1.5 gal water via
\	tremie, Pull tremie pipe, Re-set rig on C-7746 for sampling in A.M.
2230	Pick up equipment at 'C' farm, travel to office, paperwork and time card
2400	End of shift.

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko,
NCO: Rievera, Williams, Sharp
HPT: Wilber, Young
FWS: Clark

WEATHER: 69 F, mostly sunny with winds less than 10 mph

DOWNTIME: 4 hr for safety meeting, .5 hr for Farm Key .25 hr for Pre-job

DISCARDED ITEMS:
1 expendable tip
1 200' mult.-level probe
1 sack Diatomite
1 sack sand
12 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David Skoglie **DATE:** 5/25/10

10/06/09 Rev 1

RPP-47274, Rev. 0

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Sample at #C7746, continue probe installation at #C7745 | **DATE:** 05-25-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 73

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B247X2	44'-46'	100%
2. \	\	\
3. \	\	\
4. \	\	\

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7746 Tubing (2 5/8") @ 44' to 56' ft bgs; S.U. 2.3

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Hazard Awareness---The Little Things Count.
0615	Travel to 'S' farm,
0645	Arrive at 'S' farm, stand-by for samplers
0830	Samplers on site - pre-Job
0845	Dress into whites, enter farm, inspect rig, fuel equipment,
\	Pull dummy tip, install sampler, drive sample #B247X2 at 0950
\	from 44' to 46' BGS, Pulled sample, installed dummy tip, Process
\	sample (100% recovery) set up for driving survey out.
1030	Load rod from outside onto rack to replace old rod in farm.
1045	Enter farm, bring in rods, drive C7746 from 44' to 52', survey out.
1215	Lunch
1245	Stand-by for Key to tank farm
1300	Dress in to whites, re-set rig on hole, drove from 52' to
—	56' (very hard driving) survey out
1430	Travel to office, paperwork and time cards
1530	End of shift.
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko,
NCO: Rievera, Sharp
HPT: Wittus, Young
FWS: Clark

WEATHER: 76 F, mostly sunny with winds light and variable

DOWNTIME: .25 hr for key
1.75 hr for samplers

DISCARDED ITEMS:
3 sample liners
6 sample caps
10 Lynch pins
2 nylated washers

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 5/26/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Sample at #C7746, continue probe installation at #C7745 | **DATE:** 05-26-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 74

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1. NA
2.
3.
4.

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7746 *Tubing (* 2 5/8" *)@* 56' *to* 62' *ft bgs; S.U.* .3

Borehole # \ *Tubing (* *)@* \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing (* *)@* \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. NA
2.
3.

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: General Safety---Controlling Stress.
0630	Travel to 200 East 'smerf building'
0700	sign new Rev. to RWP at 'smerf building', stand-by for RWP to go into system
0830	Rev into system, Aca in, Stand-by for rainy conditions,
–	set up cover over generators, RCTs took Alpha smears for
–	start up and brought in smears to dry in order to survey.
1130	Lunch
1200	continue stand-by for Rainy conditions
1230	Enter change trailer, dress into whites, enter farm, wipe down
–	generators, inspect rig, drive C7746 from 56' to 62' (hard driving)
1330	AOP14 in effect for lightening, exit farm, survey out
–	stand-by for lightning, travel to office, paperwork
–	and time cards.
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko,
NCO: Williams Rivera
HPT: Witters, Young
FWS: Lehman

WEATHER: 69 F, mostly cloudy with a chance of showers and winds from the south at 5-10 mph

DOWNTIME: 2 hr for RWP
3.5 hr for Rain
2 hr for lightning

DISCARDED ITEMS:
4 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler
DATE: 5-27-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Sample at #C7746, continue probe installation at #C7745 | **DATE:** 05-27-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 75

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 9 | **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7746 Tubing (2 5/8") @ 62' to 94 ft bgs; S.U. 13

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Why Take A Chance?
0615	Travel to 'S' farm
0650	Arrive at 'S' farm, Pre-job
0720	Dress into whites, Enter farm, inspect rig, fuel generators
~	Drive C7746 from 62' to 72' Lethead cool once at 66',
0930	Break let head cool
1000	Re-enter farm, drive C7746 from 72' to 80', survey out.
1130	Lunch
1200	Dress into whites, Drive from 80' to 94' (hard driving)
~	survey out (sample depth = 94')
1415	Travel to office, paperwork and time cards
1530	End of shift

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Ehrgott, Weekley
NCO: Sharp, Rivera
HPT: Wittur, Young
FWS: Clark

WEATHER: 69 F, mostly cloudy with a chance of showers and winds from the southwest at 5-15 mph

DOWNTIME: NA

DISCARDED ITEMS:
2 36" Hook jaws
2 36" heel jaws
2 18" Hook jaws
2 18" heel jaws
12 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: R2 Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.J. Steffler **DATE:** 6-1-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Sample at #C7746, continue probe installation at #C7745 | **DATE:** 06-01-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 76

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. B24YX3	94-96'	100%
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7746 Tubing (2 5/8") @ 94' to 96' ft bgs; S.U. 2.3

Borehole # \ Tubing ( ) @ \ to \ ft bgs; S.U. \

Borehole # \ Tubing ( ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Equipment Hazards---Report Unsafe equipment.
0615	Travel to 'Smerf bldg.', sign RWP, Travel to 'S' Farm
0715	Arrive at 'S' farm, stand-by for pre-job + Package
0800	Pre-job
0815	Stand-by for helper and Samplers, Rory unable to acc in due
\	to expired Bio-Assay and chest count.
0945	Helper and Samplers on site, acc in, dress into whites,
\	enter farm, inspect rig, fuel equipment, Pull dummy tip,
\	install sampler, drive sample # B24YX3 at 1130 from 94' to 96';
\	Pulled sampler, installed dummy tip, processed sample, survey
\	out.
1230	Lunch
1300	Dress into whites, move rods, clean threads, re-locate
\	rig over hole, problems with soft gravel shifting under
\	tracks survey out
1445	Travel to office, paperwork and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Steffler, Repko
NCO: Sharp, Williams, Rieves
HPT: Wittis, Mincey
FWS: Clark

WEATHER: 77 F, mostly cloudy with a chance of showers and winds from the southwest at 5-15 mph

DOWNTIME: .75 hr for pre-job
1.5 hr for samplers + helper

DISCARDED ITEMS:
3 sample liners
6 sample caps

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler **DATE:** 6-2-10

10/06/09 Rev 1

RPP-47274, Rev. 0

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7746, continue probe installation at #C7745 | **DATE:** 06-02-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 77

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1. NA		
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7746 *Tubing* (2 5/8") @ 96' *to* 112' *ft bgs; S.U.* 2.3

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. NA		
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Housekeeping Is Safe-Keeping At Work
0630	Travel to 'S' farm
0700	Arrive at 'S' farm, Pre job
0730	Stand-by for RCTs to take alpha-smears and dry smear for survey (due to rainy weather).
1000	Smears were dried and surveyed, Dress into whites
"	enter farm, inspect rig, drive C7746 from 96' to 112',
"	Noticed hydraulic spray from left side of hammer, shut down
"	rig, clean up, survey out.
1230	Lunch
1300	Enter farm, remove bad hose for repair, clean up
"	survey out
1430	Transport hose to town for repair, Travel to office, paperwork
"	and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Passey
NCO: Williams, Rivera, Siedell
HPT: Withus, Minces
FWS: Lehman

WEATHER: 69 F, mostly cloudy with rain showers throughout the day. Winds from the south at 10-20 mph.

DOWNTIME: 3 hr for smears (wet conditions)
2.5 hrs - HHU repair

DISCARDED ITEMS:
1 - 2 5/8" drive head
10 Lynch pins

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: RZ Steffler
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: R.Z. Steffler **DATE:** 6-3-10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete repairs to HHUXL and continue sampling activities at #C7746 | **DATE:** 06-03-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 78

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

	Sample #'s	Interval	%
1.	B24YX4	144-146'	100%
2.	\	\	\
3.	\	\	\
4.	\	\	\

SITE/EQUIPMENT INSPECTION: Yes No | **HHU CASE#1** **HHU CAT #2** **HHUXL#3**

BOREHOLE SUMMARY

Borehole # C7746 Tubing (2 5/8") @ 112' to 146' ft bgs; S.U. 2.3'

Borehole # C7746 Tubing (2 5/8") @ 146' to 0' ft bgs; S.U. /

Borehole # C7744 Tubing (2 5/8") @ 0' to 28 ft bgs; S.U. ___

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: When You Least Expect It...Lessons Learned.
0630	Travel to Energy N.W., removed cover from tent, looked for
\	possible replacement hoses, found two possible hoses
0745	Travel to "S" Farm
0815	Arrive at "S" Farm, Pre-job
0830	Dress into whites, inspect rig, install replacement hose
\	on hammer, drive C7746 from 112' to 144' sample depth,
\	letting head cool twice. survey out
1215	Lunch
1245	Dress into whites, enter farm, back-pull dummy tip, install
\	sampler, drive sample #B24YX4 at 1350, pulled sampler
\	processed sample, survey out.
1430	shift-change stand-by for new RCTs
1600	Dress into whites, Back pull C7746 from 146' to 0' while
\	adding granular bentonite, Clean tubing, Move Rig, zone, generators
\	etc to C7744, set up Zone and Rig, survey out.
2030	Lunch
2100	Dress into whites, set up Lighting, finish set-up, drive
\	C7744 from 0' to 28', very hard at 26', head heated up,
\	Cover generators in case of rain, survey out.
2245	Travel to office, paperwork, time cards
2400	End of shift (worked double shift per WRPS direction)
	\
	\

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Passey
NCO: Rivera, Siedell
HPT: Witfos, Mincey
FWS: Lehman

WEATHER: 69 F, mostly cloudy with a chance of showers and winds from the southwest at 10-20 mph

DOWNTIME: 2 hr for repairs
1.5 hr for shift change

DISCARDED ITEMS:
20 Lynch pins
1 2 5/8" Filler hose
2 nylatrol washers
6 sample caps
3 sample liners
10 sacks bentonite

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 6/5/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Begin sampling activities at #C7744. **DATE:** 06-04-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 79

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No

HHU CASE#1 *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7744 Tubing (2 5/8") @ 28' to 37' ft bgs; S.U. 1.3

Borehole # C7745 Tubing (2 1/2") @ 1748' DEA to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Hoisting and Rigging---Sling Failure.
0620	Travel to 'S' farm
0700	Arrive at 'S' farm, pre job
0230	Stand by for RCT to take Alpha smears and allow to dry in order to survey
0930	Surveys complete, dress into whites, inspect rig, drive C7744 from 28' to 37' (sample depth), very hard driving, Move Rig and set up on C7745, set up zone move generators etc, Survey out.
1230	Lunch
1300	Gather equipment, clean-up.
1330	Travel to office, paperwork and time cards
1430	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko
NCO: Rievera, Williams
HPT: Mincey, Kye Lorrien
FWS: Clark

WEATHER: 71 F, mostly cloudy with rain showers throughout the day. Winds from the southwest at 15-25 mph

DOWNTIME: 2.5 hr for smears, wet weather

DISCARDED ITEMS:
1 2 5/8" drive head
5 Lynch pins
1 Nylatrol washer

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/5/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue probe installation at #C7745 | **DATE: 06-05-10**

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 **U-DIG #: 10001270** | **REPORT #: 80**

START CARD NO. SE06208 | **DECOMMISSION NO. AE08107** | **RWP: CO-541, Rev. 10** **AHA-09-008, Rev. 0**

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

BOREHOLE SUMMARY

Borehole # C7745 *Tubing* (2½") @ 148' *to* 64' *ft bgs; S.U.* 2.3

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

Borehole # \ *Tubing* (\ ) @ \ *to* \ *ft bgs; S.U.* \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
~~0600~~ 0530	**Safety meeting at office. Topic: Human Performance Improvement.**
\	Travel to "S" Farm., pick up materials at 200 East
0615	Onsite at "S" Farm., stand by for RCT & Pre-job
0700	RCTs on site pre-job
0730	Dress into whites, inspect rig, fuel generators, back-pull C7745 from
\	148' to 124', install bentonite to 132', sand to 131, D.E. to 128, sand to 127'
\	install tremie to 125', install 1 gal H2O via tremie, pull tremie pipe,
\	back-pull 2.5" casing from 124' to 104' bgs, install bentonite to
\	112', sand to 111', D.E to 108', sand to 107', install tremie pipe to
\	105' BGS, install 1 gal water via tremie, survey out.
\	Probe depths = 151.5' to 153', 128.5' to 130.5, and 108.5' to 110.5'
1100	Lunch
1130	Dress into whites, Enter farm back pull C7745 from
\	104' to 84', install bentonite from ~~87.45'~~ 87.8' to 92.1, sand 92.1 to 91.1
\	D.E. from 91.1 to 88.45', sand 88.45 to 87.45, install tremie to
\	85', install one gallon water via tremie, Pull tremie, back pull
\	2.5" casing from 84' to 64', install bentonite from 87.45 to
\	72.1, sand 72.1' to 71.1, D.E from 71.1 to 68.1, sand to
\	62.1. install tremie to 65', add water, clean pipe,
\	survey out.
1415	Travel to office, paperwork and time cards
1500	End of shift
	\
	\

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Ehrgott
NCO: Williams, Villareal, Sharp
HPT: Mincey / Young
FWS: Clark

WEATHER: 72 F, partly cloudy and winds will be light and variable from the southwest.

DOWNTIME: .75 hr for pre-job

DISCARDED ITEMS:
4 sacks bentonite
1 sack Diatomite
1 sack sand

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D. E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dave Skoglie **DATE:** 6/7/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue probe installation at #C7745 | **DATE:** 06-06-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 81

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # C7745 Tubing (2½") @ 64' to 0 ft bgs; S.U. \

Borehole # C7744 Tubing (2½") @ 31' to \ ft bgs; S.U. \

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0530	**Safety meeting at office. Topic: Be Sun Savvy This Summer.**
0535	Travel to "S" Farm.
0615	Onsite at "S" Farm. , stand-by for pre-job, RCTS
0630	RCTS on site, pre-job, ace in operators, gather equipment.
0715	Dress into whites, Enter farm, inspect rig and generators,
\	fuel equipment, back pull C7745 from 64' to 44' bgs,
\	install bentonite from 67' to 52' sand 52' to 51', Diatomite from
\	51 to 48', sand to 47' (Probe set = 48.45 to 50.55') install tremie
\	to 45', add 1 gal water via tremie, Pull tremie pipe
\	Pull casing from 44' to 24' bgs, add bentonite from 47' to 32',
\	sand 32' to 31', diatomite 31' to 28', sand to 27' (Probe set =
\	28.45' to 30.55' bgs) install tremie pipe to 25', add 1 gal water,
\	Pull tremie, survey out
0930	Stand-by for weather (rain & wind)
1100	Dress into whites, back pull casing from ~~24'~~ 120' 24' to 4' bgs
\	install bentonite from 27' to 11.90', sand 11.90' to 10.90',
\	Diatomite from 10.90 to 7.85' sand 7.85 to 6.85, install 1
\	gal water, (Final probe set = 8.35 to 10.40'), back pull remaining
\	4' of casing, move Rig and equipment and set up on C7744
\	for sampling on Monday, set up rig, zone, air samplers etc.
1[illegible]	survey out
1330	Lunch
1400	Pick up equipment at Green hut, travel to office, paperwork, time cards
1500	End of shift

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Weakley
NCO: Williams, Siedell
HPT: Mincey, Clayton
FWS: Clark

WEATHER: 74 F, mostly cloudy with a chance of showers throughout the day, winds light and variable.

DOWNTIME: .25 hr for pre-job
1.5 hr for weather

DISCARDED ITEMS:
3 sacks bentonite
1 sack sand

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/7/10

10/06/09 Rev 1

C-7745 Probe installation
Completed on 6-6-10

casing to 150.3	#1 Probe = 153 to 151.5	154.5 - 153.5	sand	
148.6.S		153.5 - 151	D.E	#1
32 J.		151 - 150	sand	
		150 - 132	Bent.	
126.3	#2 Probe 130.5 to 128.5	132 - 131	sand	
124.6.S.		131 - 128	D.E.	#2
31 J.		128 - 127	sand	
		127 - 112	Bent	
106.3		112 - 111	sand	
104 6.S.	#3 Probe - 110.5 - 108.5	111 - 108	D.E.	#3
26 J		108 - 107	sand	
		107 - 92.1	Bent	
		92.1 - 91.1	sand	
86 ~~106~~.3	#4 Probe 90.6 - 88.95	91.1 - 88.45	DE	#4
		88.45 - 87.45	sand	
84.6.S		87.45 - 72.1	Bent	
29 J		72.1 - 71.1	sand	
66.3	#5 Probe ~~68.5~~ 70.6 - 68.95 - 88.95	71.1 - 68	D.E	#5
64.6.S.		68 - 67	Sand	
16 J.		67 - 52.05	Bent	
		52.05 - 51.05	sand	
46.3	#6 Probe 50.55 - 48.45	51.05 - 47.95	D.E	#6
44.6.S.		47.95 - 46.95	sand	
11 J.		46.95 - 32.05	Bent	
		32.05 - 31.05	sand	
26.3	#7 Probe - 30.55 - 28.45	31.05 - 27.95	DE	#7
24 6.S		27.95 - 26.95	sand	
6 J		26.95 - 11.90	Bent	
	#8 Probe 10.40 - 8.35	11.90 - 10.90	sand	
		10.90 - 7.85	DE	#8
6.3		7.85 - 6.85	sand	
4.6.S		6.85 - 0	Bent	
1 J				

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7744 | **DATE:** 06-07-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 82

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA**-09-008, Rev. 0

SAMPLING SUMMARY

	Sample #'s	Interval	%
1.	B24YW8	37-39'	100%
2.	\	\	\
3.	\	\	\
4.	\	\	\

SITE/EQUIPMENT INSPECTION: (Yes) No | HHU CASE#1 | HHU CAT #2 | (HHUXL#3)

BOREHOLE SUMMARY

Borehole # C7744 Tubing (2 5/8") @ 37' to 96' ft bgs; S.U. 2.3

Borehole # \ Tubing (\ )@ \ to \ ft bgs; S.U. \

Borehole # \ Tubing (\ )@ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: UV Light Eye Protection.
0615	Travel to S' farm
0645	Arrive at S' farm, stand-by for pre-job
0815	Pre-job
0830	Dress into whites, enter zone, inspect and fuel rig and
\	generators, finish set up, Pull inner rod, install sampler,
\	drive sample #B24YW8 at 9:50 from 37' to 39', pulled
\	sampler, sent sampler out for processing, install inner rod and
\	dummy tip, drive from 39' to 44', Broke drive head,
\	survey out.
1100	Lunch
1130	Dress into whites, replace broken 2 5/8" drive head, drive from
	44 to 60' letting head cool twice survey out
1430	Exit for shift change, stand by for Pre-job
1530	Pre-job at S-Farm trailer, dress in whites, ~~continue driving at 60' bgs~~ M.R.
1615	Start generators start drilling 60' bgs
1815	Drove dual wall to 78' bgs., wind came up to over 20mph. Taking early lunch
1830	Exited farm for Lunch
1900	Dress in whites continue driving at 78' bgs
2030	Drove dual wall From 78' bgs to 96' bgs, dress out of whites, drive to office
2130	End of shift
	N/A

OPERATOR/LICENSE: Olson/1217
ES SUPPORT: Repko, Pressey
NCO: Rivera, Robertson
HPT: Willis, Young
FWS: Clark, Lehman

WEATHER: 77 F, partly cloudy with winds from the south, southwest at less than 10 mph.

DOWNTIME: 1.5 hr for pre-job (2nd shift) 1 hr. for pre-job

DISCARDED ITEMS:
3 sample liners
6 sample caps
1 2 5/8" drive head

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: Dale Skoglie **DATE:** 6/8/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue sampling activities at #C7744 | **DATE:** 06-08-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 83

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY | **SITE/EQUIPMENT INSPECTION** Yes No | *HHU CASE#1* *HHU CAT #2* *HHUXL#3*

Sample #'s	Interval	%
1. B24YW9	96'-98'	100%
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # C7744 Tubing (2 5/8") @ 96' to 127 ft bgs; S.U. 2.3'

Borehole # Tubing ( ) @ to ft bgs; S.U.

Borehole # Tubing ( ) @ to ft bgs; S.U.

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Propane Grill Safety.
0615	Travel to S farm
0645	arrive at 'S' farm, Pre job
0700	Dress into whites, enter farm, inspect and fuel equipment,
	Pull inner rod, survey out.
0800	Stand-by for samplers
0830	Samplers on site, dress into whites, enter farm, install
	sampler, drive sample #B24YW9 at 9:30 from 127' to 96', 96'-98'
	pull sampler, sent sampler out to process, install dummy tip,
	drive C-7744 from 98' to 112' letting head cool once
	survey out
1215	Lunch
1245	Dress into whites, drive from 112' to 127' (sample depth)
	letting head cool once, clean-up and survey out
1430	Travel to office, paperwork and time cards
1530	End of shift

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT Steffler, Repko
NCO: Rivera, Robersin
HPT: Mincey, Young
FWS: Clerk

WEATHER: 80 F, mostly sunny with light and variable winds from the south, southwest.

DOWNTIME: .5 hr for samples

DISCARDED ITEMS:
3 sample liners
6 sample caps
3 Nylatrol washer
1 2 5/8" drive-head

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Ol

REVIEWED BY: D E Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/10/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Complete sampling activities at #C7744 and decommission. **DATE:** 06-09-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 84

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 10 AHA-09-008, Rev. 0

SAMPLING SUMMARY **SITE/EQUIPMENT INSPECTION:** (Yes) No **HHU CASE#1** **HHU CAT #2** (HHUXL#3)

Sample #'s	Interval	%
1. B24YX0	127-129'	100%
2. \	\	\
3. \	\	\
4. \	\	\

BOREHOLE SUMMARY

Borehole # C7744 Tubing (2 5/8") @ 127' to 129' ft bgs; S.U. 1.3

Borehole # C7744 Tubing (2 5/8") @ 129' to \ ft bgs; S.U. \

Borehole # \ Tubing ( ) @ \ to \ ft bgs; S.U. \

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1. \	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Why Use A Safety Can For Gasoline?
0630	Travel to 'S' farm
0700	Arrive at 'S' farm, stand-by for samplers
0800	Samplers on site, dress into whites, enter farm, inspect rig,
\	fuel generators, pull dummy tip, install sampler, drive sample #
\	B24YX0 at 0925 from 127' to 129', pulled sample, broke down
\	inner rod into 4' pieces, survey out.
1015	stand-by for wind.
1115	stand-by for AOP14 (Lightening)
1145	Exit AOP14, stand-by for wind
1200	Lunch
1230	Continue stand-by for wind, pick up supplies to install
\	flush mount protective casings at 200 East, pick up bending
\	equipment at En. N.W. while stand-by. Travel to
\	office, paperwork and time cards
1530	End of shift
	NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT Repko
NCO: Rievera
HPT: Mincey, Withus
FWS: Clark

WEATHER: 69 F, mostly cloudy with a chance of rain, and winds from the southwest at 10-20 mph

DOWNTIME: 1 hr for samplers
4.25 hr for wind + Lightening

DISCARDED ITEMS:
3 sample liners
6 sample caps

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE: *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/10/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Decommission #C7744 and begin demobilization out of "S" Farm. **DATE:** 06-10-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford **EXCAVATION:** DAN-3906 **U-DIG #:** 10001270 **REPORT #:** 85

START CARD NO. SE06208 **DECOMMISSION NO.** AE08107 **RWP:** CO-541, Rev. 10 **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.	NA	
2.		
3.		
4.		

SITE/EQUIPMENT INSPECTION: Yes No **HHU CASE#1** **HHU CAT #2** **HHUXL#3**

BOREHOLE SUMMARY

Borehole # C7744 Tubing (2 5/8") @ 129' to 0' ft bgs; S.U. /

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. /

Borehole # \ Tubing (\ ) @ \ to \ ft bgs; S.U. /

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.	NA	
2.		
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: General Safety---Unsafe Acts.
0615	Travel to 'S' farm
0645	Arrive at 'S' farm - pre job
0715	Gather equipment, dress into whites, inspect rig and generators,
\	back-pull C-7744 from 129' to 0', filling borehole with granular
\	bentonite, begin clean-up, taking down zone, move rig
\	to west gate for survey. Survey out.
1115	Lunch
1145	Dress into whites, cleaning pipe, mobing equipment to
\	farm gates for survey, Move rig into RBA, HPTS
\	survey and release rig, move rig out of farm,
\	continue de-mob, moving generators, wagons etc. to
\	gate, Move rig out of farm and stage by
\	horse trailer, survey out.
1430	Travel to office paperwork, time-cards
1530	End of shift.

NA

OPERATOR/LICENSE: Olson/1217
ES SUPPORT Repko
NCO: Rivera, Robbert
HPT: Wittur, Mincey
FWS: Clark

WEATHER: 68 F, partly cloudy, cool and breezy. Winds from the southwest at 15-25 mph.

DOWNTIME: \

DISCARDED ITEMS:
8 sacks bentonite
1-2 5/8" Puller head

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: Kelly Olson
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Kelly Olson

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/14/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Install protective caps, Clean pipe to be released from farm		**DATE:** 06-14-10
LOCATION: "S' Tank Farm. 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #:** 10001270	**REPORT #:** 86
START CARD NO. SE06208	**DECOMMISSION NO.** AE08107	**RWP:** CO-541.Rev. 10 AHA-09-008.Rev.0
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** Yes (No)	*HHU CASE#1* *HHU CAT #2* (HHUXL#3)

Sample #'s *Interval* *%*

1. N/A
2.
3.
4.

BOREHOLE SUMMARY

Borehole # _____ *Tubing (* N/A *)* @ *to* *ft bgs; S.U.* ____

Borehole # _____ *Tubing (* *)* @ *to* *ft bgs; S.U.* ____

Borehole # _____ *Tubing (* *)* @ *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1. N/A
2.
3.

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Work together for Safety, watchout, communicate
0630	Travel to S-Farm.
0700	Arrive at S-Farm. Standby for Pre-job
0900	Pre-job with Clark. New RWP Rev. 11. driving to Smurf to ace.
0936	Arrive at Sx-Farm, gather concrete, surface protectant materials.
1010	Dress in whites, enter farm dig in surface protection monuments on
—	C-7743, C-7745, need more cement. Exiting farm, HPT to survey
—	equipment after lunch, all drill pipe moved to Fence to be surveyed out.
1215	Drive to chemical Storage for cement.
1230	Arrive back at Sx Farm, Lunch
1300	Dress in whites, Finish concrete on C-7743, C-7745. Survey equipment out.
1415	Moved most of equipment out, Drill pipe to be surveyed out tommorrow,
—	3 air samplers, spill kit moved tommorrow.
1500	Drive to Energy Solutions, Timecard, paperwork.
1530	End of shift

N/A

OPERATOR/LICENSE: Mark Repko #3012 *ES SUPPORT:* *NCO:* Ruben Rivera, Mike Roberts, *HPT:* Matt Young, Mike Widdis *FWS:* Bill Clark	**WEATHER:** 83°F Sunny **DOWNTIME:** 2hr. - Pre-Job	**DISCARDED ITEMS:** 2 - Surface completion well Caps 4 - Bags of cement 1 - Well Guard Grease

REFERENCE/CONTRACT INFORMATION:

REPORT BY: Mark A. Repko	**REVIEWED BY:** D.E. Skoglie
TITLE: *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE: Mark A. Repko	**SIGNATURE:** David E Skoglie **DATE:** 6/15/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue demobilization and cleanup | **DATE:** 06-15-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 87

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 | **AHA-**09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s	Interval	%
1.		
2.	N/A	
3.		
4.		

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* | *HHU CAT #2* | (*HHUXL#3*)

BOREHOLE SUMMARY

Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____
Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____
Borehole # N/A Tubing ( ) @ to ft bgs; S.U. ____

GEOPHYSICAL LOGGING

Boring #	Interval	Type
1.		
2.	N/A	
3.		

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: General Safety---Safe Attitudes.
0630	TRAVEL TO CHPRC JOB, DROP OFF WEAKLEY
—	AND PICK UP PASSEY
—	TRAVEL TO HERTZ EQUIPMENT RENTAL TO
—	PICKUP DUMP TRUCK.
—	TRAVEL TO ENW LAYDOWN YARD TO PICKUP
—	TRAILER. ~~LIGHTS~~ TRAILER LIGHTS NOT WORKING
—	TROUBLE SHOOTING CALLED FOR HERTZ MECH.
—	FIXED. TROUBLE IS WITH ARE TRAILER.
1230	TRAVEL TO S-FARM PICK UP XL AND TRANSPORT
—	TO WASH PAD. PARK TRUCK & TRAILER FOR THE
—	NIGHT.
1430	TRAVEL TO C-FARM TO PICKUP WATER TANK
1450	TRAVEL TO OFFICE
1530	END OF SHIFT

NOT USED MC

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT Ehrgott, Passey
~~*NCO:*~~
~~*HPT:*~~
FWS: B. CLARK

WEATHER: 75 F, partly cloudy, with winds from the southwest at 5-15 mph
DOWNTIME: 3 HR
TROUBLE SHOOT TRAILER LIGHTS

DISCARDED ITEMS: 0

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRGOTT
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mike Ehrgott

REVIEWED BY: D.E. Skoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E Skoglie **DATE:** 6/16/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS Page 1 of

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Continue demobilization and cleanup | **DATE:** 06-16-10

LOCATION: "S" Tank Farm, 200 West Area, Hanford | **EXCAVATION:** DAN-3906 | **U-DIG #:** 10001270 | **REPORT #:** 88

START CARD NO. SE06208 | **DECOMMISSION NO.** AE08107 | **RWP:** CO-541, Rev. 10 AHA-09-008, Rev. 0

SAMPLING SUMMARY

Sample #'s *Interval* *%*

1.
2. N/A
3.
4.

SITE/EQUIPMENT INSPECTION: (Yes) No | *HHU CASE#1* *HHU CAT #2* (HHUXL#3)

BOREHOLE SUMMARY

Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____
Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____
Borehole # N/A *Tubing (* *)@* *to* *ft bgs; S.U.* ____

GEOPHYSICAL LOGGING

Boring # *Interval* *Type*

1.
2. N/A
3.

TIME	WORK SUMMARY
0600	Safety meeting at office. Topic: Hydraulic Hoses And The Danger Of Leaks.
0615	TRAVEL TO S-FARM PICK UP GENERATOR AND
—	DELIVER TO C-FARM TO SUPPORT LOGGING
—	ACTIVITIES. THEN TRAVEL TO WASH PAD AFTER
—	GETTING WATER, PRESSURE WASH HHUXL.
—	TRANSPORT HHUXL TO ENW LAYDOWN YARD
—	FOR MAINTENANCE WORK.
1100	RETURN RENTED DUMP TRUCK BACK TO HERTZ
—	EQUIPMENT RENTAL.
1130	LUNCH
1200	TRAVEL TO C-FARM
1300	TRAVEL TO S-FARM AND CONTINUE WITH
—	CLEAN UP, AND DEM&B OPERATIONS.
1530	END OF SHIFT

NOT USED ME

OPERATOR/LICENSE: Walkup/3005
ES SUPPORT Ehrgott
NCO:
HPT:
FWS: B. CLARK

WEATHER: 67 F, mostly cloudy with winds from the west at 10-20 mph.

DOWNTIME: N/A

DISCARDED ITEMS:
1. NYLATRON BOUGHT
3. DRIVE HEAD PINS

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: MIKE EHRGOTT
TITLE : *ES TECHNICAL PREPARER*
SIGNATURE: Mike Ehrgott

REVIEWED BY: D.E. SKoglie
TITLE: *ES TECHNICAL REVIEWER*
SIGNATURE: David E. Skoglie **DATE:** 6/17/10

10/06/09 Rev 1

ENERGYSOLUTIONS

ENERGY SOLUTIONS, WESTERN OPERATIONS

Page 1 of 1

DRILLING AND SAMPLING (PERCUSSION) DAILY WORK RECORD

PURPOSE: Demobilization		**DATE: 06-17-10**
LOCATION: "S" Tank Farm, 200 West Area, Hanford	**EXCAVATION:** DAN-3906 **U-DIG #: 10001270**	**REPORT #: 89**

START CARD NO. SE06208	**DECOMMISSION NO. AE08107**	**RWP: CO-541, Rev. 10 AHA-09-008, Rev. 0**
SAMPLING SUMMARY	**SITE/EQUIPMENT INSPECTION:** *Yes* (*No*)	*HHU CASE#1 HHU CAT #2* (*HHUXL#3*)

Sample #'s	*Interval*	*%*
1.	N/A	
2.		
3.		
4.		

BOREHOLE SUMMARY

Borehole # _____ *Tubing (* *) @* *to* *ft bgs; S.U.* ____

Borehole # _____ *Tubing (* *) @* *to* *ft bgs; S.U.* ____

Borehole # _____ *Tubing (* *) @* *to* *ft bgs; S.U.* ____

N/A

GEOPHYSICAL LOGGING

Boring #	*Interval*	*Type*
1.	N/A	
2.		
3.		

TIME	WORK SUMMARY
0600	**Safety meeting at office. Topic: Over The Counter Medications.**
0615	Travel to Energy Northwest and perform maintenance on HHU XL while standing by for take cover drill onsite.
1000	Travel to "S" Tank Farm. Load support equipment for CAT HHU for performing two pushes outside of "C" Farm.
1100	Lunch
1130	Transport support equipment for CAT HHU to "C" Farm and offload.
1200	No other activities performed at "S" Farm. Travel to office. Complete paperwork and timecard.
1530	End of shift.

N/A

OPERATOR/LICENSE: Walkup/3005 *ES SUPPORT Passey* *NCO: Williams* *HPT: Widdis, Young* *FWS: Clark*	**WEATHER: 74 F, mostly cloudy with winds from the southwest at 10-20 mph.** **DOWNTIME: 4 Hrs.---Take cover drill**	**DISCARDED ITEMS:** N/A

REFERENCE/CONTRACT INFORMATION: FSWO-DOW-031; RPP-ENV-39658

REPORT BY: M. W. Walkup	**REVIEWED BY:** D.E. Sloghi
TITLE : *ES TECHNICAL PREPARER*	**TITLE:** *ES TECHNICAL REVIEWER*
SIGNATURE:	**SIGNATURE:** D E Sloghi **DATE:** 6/18/10

10/06/09 Rev 1

APPENDIX D

SMALL DIAMETER GEOPHYSICAL LOGGING FOR 241-S TANK FARM BARRIER CHARACTERIZATION STUDY

This page intentionally left blank.

SMALL DIAMETER GEOPHYSICAL LOGGING FOR 241-S TANK FARM BARRIER CHARACTERIZATION STUDY

by

Russel Randall, PhD and Randall Price

to

Energy*Solutions* Federal Services, Inc.
2345 Stevens Drive
Richland, Washington 99354

July 2010

Pacific Northwest Geophysics
4200 West 19th Avenue
Kennewick, Washington 99338

Three Rivers Scientific
3740 Grant Court
West Richland, Washington 99353

CONTENTS

1.0 INTRODUCTION 1
2.0 GAMMA AND MOISTURE SURVEYS 1
2.1 GAMMA CALIBRATION AND SURVEYS 2
2.2 NEUTRON MOISTURE CALIBRATION AND SURVEYS 3
3.0 REFERENCES 4

APPENDIX A SPECTRAL GAMMA AND MOISTURE SURVEY RESULTS..... A-1

LIST OF FIGURES

Figure 1. Location of Probeholes in the 241-S Tank Farm Barrier Characterization Study 2
Figure 2. BGO Calibration Certificate..... 5
Figure 3. Moisture Calibration Certificate, 15.24 cm (6-in.) and 20.32 cm (8-in.) Hole. 6
Figure 4. Moisture Calibration Certificate, 6.35 cm (2.5-in.) Hole. 7

LIST OF TABLES

Table 2. Moisture Calibration Data. 3

TERMS

BGO	Bismuth Germinate Oxide
DOE	U.S. Department of Energy
KUT	potassium, uranium and thorium
PNG	Pacific Northwest Geophysics
VF	Volume Fraction (percent) of Moisture content

SMALL DIAMETER GEOPHYSICAL LOGGING FOR 241-S TANK FARM BARRIER CHARACTERIZATION STUDY

1.0 INTRODUCTION

Pacific Northwest Geophysics (PNG) and Three Rivers Scientific provided small diameter logging in five probeholes installed at 241-S Tank Farm for a barrier characterization study.

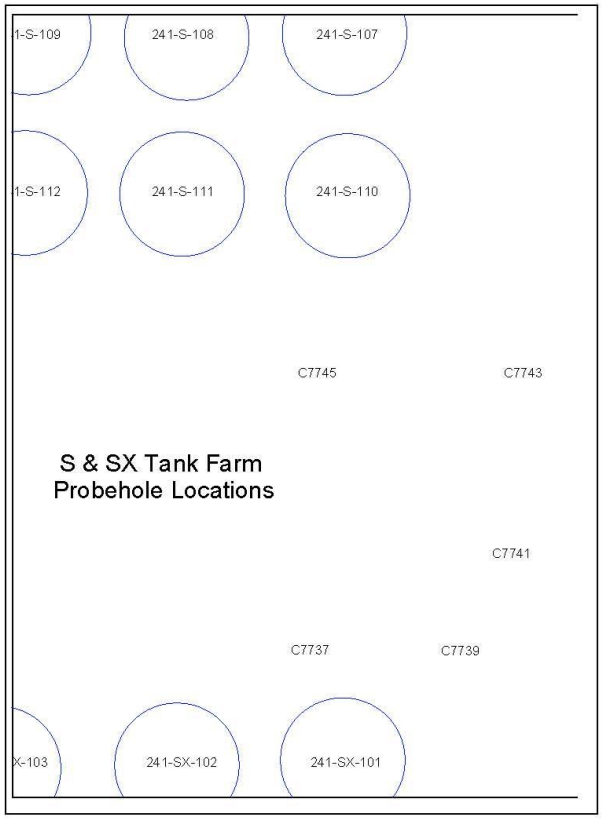
Logging surveys were conducted in each small diameter probehole with a Bismuth Germinate Oxide (BGO) spectral gamma scintillation detector and a neutron-neutron moisture probe. Detector calibration certificates for the BGO and neutron-moisture detectors are presented in Section 2.0, "Gamma and Moisture Surveys." The survey results for each probehole are presented in Appendix A.

2.0 GAMMA AND MOISTURE SURVEYS

The gamma and moisture logs were collected according to approved procedures (PNG 2009). The surveys were recorded from the bottom of the probehole (maximum survey depth) to the ground surface. Zero depth reference is at the ground surface. A repeat measurement was acquired daily in at least one probehole to verify instrument repeatability. The main log and repeat intervals are presented on the same plot. The computed results of the main and repeat intervals were reviewed and for all of the intervals collected, the results agree within the uncertainty of the measurement counting statistics.

The survey results for each probehole are presented as a depth-versus-concentration plot in Appendix A. The plots are in numeric order of the probeholes (C7737 – C7745). Appendix A also contains a table summarizing data for each probehole. Probehole depth, maximum concentration of Cs-137 in pCi/g, and maximum detected depth of Cs-137 are listed. Figure 1 shows a map of the probehole locations relative to the underground storage tanks within the investigation site.

Figure 1. Location of Probeholes in the 241-S Tank Farm Barrier Characterization Study.



2.1 GAMMA CALIBRATION AND SURVEYS

The spectral gamma scintillation detector uses a BGO crystal that is 2.54 cm (1 in.) in diameter by 10.1 cm (4 in.) long. Other components of the gamma logging probe are the high-voltage supply, photo-multiplier tube, pre-amp, and multi-channel analyzer. The settings of the detector components are fixed (i.e., set up during assembly, prior to calibration) and cannot be adjusted by the field-logging engineer. The detector gain and lower threshold are set to record gamma ray activity with energies between 200 and 3000 keV. Lantern mantles containing Th-232 are used as a field verifier at the beginning and ending of each day's logging activities to check detector resolution (integrity) and energy calibration (amplifier gain).

The spectral gamma surveys were logged at 100 seconds per 0.5 ft. A spectrum of 256 channels was collected each 0.15 m (0.5 ft) from the bottom of the probehole to the surface. The spectra

were recorded in Ortec[1] PHA format with one spectrum per file (filename extension: "-.chn"). Spectra were processed to quantify the concentration of the naturally occurring radionuclides (K, U, & Th) and quantify Cs-137 when present above the minimum detection threshold. The minimum detection level (MDL) for Cs-137 is 1 pCi/g. The calibration certificate is shown in Figure 2. Also the gross gamma was calibrated to the industry standard of equivalent radium-226 (Eq.Ra) in pCi/g. Calibration was for the probehole conditions present at the investigation site.

2.2 NEUTRON MOISTURE CALIBRATION AND SURVEYS

The neutron moisture sonde combines the PNG-owned thermal-neutron detector and a U.S. Department of Energy (DOE)-owned sealed neutron source (50 mCi AmBe). The DOE-owned neutron source was used because it was already on the Hanford Site and was managed by the DOE Radiation Management Program. The neutron source is an integral component of a neutron moisture detector, manufactured by Campbell Pacific Nuclear, and is identified by the tool serial number H370608792.

The integrity of the sealed neutron source is always maintained when used in calibration and probehole logging activities. Source integrity is maintained by inserting the PNG-owned neutron detector module into the housing containing the sealed neutron source.

Calibration was performed in six borehole calibration models (Meisner and Randall 1995). Three of these models had a 15.24 cm (6-in.) hole size and three models had a 20.32 cm (8-in.) hole size. The moisture content was different for each borehole model within each set of three models (5, 12, and 20 percent by volume). The detector count rate in each of the six borehole calibration models is summarized in Table 1. The calibration certificate is shown in Figure 3.

Table 2. Moisture Calibration Data.

Moisture Content Percent – volume fraction	6-inch Models[a] (cps)	8-inch Models[a] (cps)
5% vf	103.87	81.1
12% vf	155.11	114.92
20% vf	191.9	140.17

[a]Count rates are mean of 10 sample measurements at 60-sec each, 2/25/2009.

The probehole size for this project was 6.35 cm (2.5 in.) outside diameter. Therefore, the moisture calibration was extrapolated to the correct hole size. Figure 4 shows the moisture calibration certificate for the 6.35 cm (2.5-in.) hole size.

[1]Ortec is a registered trademark of EG&G Ortec, Oak Ridge, Tennessee.

The probehole moisture survey was collected at 0.30 m/min (1 ft/min). Processing of the survey data requires that the raw survey data be normalized to the thickness of the steel casing present in the calibration models (0.826 cm [0.325 in.]) Given that the probehole casing thickness is 0.97 cm (0.38 in.), a correction factor of 1.055 is required to increase (normalize) the observed neutron detector count rate to the conditions of the calibration model (Meisner et al. 1996).

3.0 REFERENCES

Meisner, James and Russel Randall, 1995, *Vadose Zone Moisture Measurement Through Steel Casing Evaluation*, WHC-SD-EN-TI-304, Rev.0, Westinghouse Hanford Company, Richland, Washington.

Meisner, James, Randall Price, and Russel Randall, 1996, *Radionuclide Logging System In Situ Vadose Zone Moisture Measurement Calibration*, WHC-SD-EN-TI-306, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

PNG, 2009, *Procedures: Calibration, Logging, Quality Assurance and Data Management*, Pacific Northwest Geophysics, Kennewick, Washington.

Randall, R. and D. Stromswold, 1995, *Procedures for Calibrating Scintillation Gamma-Ray Well Logging Tools Using Hanford Formation Models*, WHC-SD-EN-TI-293, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

Figure 2. BGO Calibration Certificate.

Certificate of Calibration
SDGR.BGO.2

April 21, 2009

Data were taken at the Hanford potassium, uranium and thorium (KUT) models on April 21, 2009. SDGR.BGO.2 is the designated Scintillator tool. Four models were used for Spectral KUT calibration. Ten spectra were recorded in order to perform statistical analysis. The observed statistical deviations were seen to be within the theoretically predicted variation. Refer to the files compressed: AveOut2.XLS for this analysis. The instrument was covered with 0.94 cm (0.37-in.) wall thickness probe tubing.

The algorithm described in WHC-SD-EN-TI-293, *Procedures for Calibrating Scintillation Gamma-Ray Well Logging Tools Using Hanford Formation Models,* Rev. 0, determines the coefficient analysis. Three energy windows are used for each K, U & T, and these are:

K: 1320-1575 keV **U: 1650-2390 keV** **T: 2475-2765 keV**

The concentration for each of the three elements is a linear combination of the count rates in the three windows. The resulting coefficients for each of the three elements are:

Concentration-K =	**4.712*K**	**-4.297*U**	**4.057*T**
Concentration-U =	**0.0*K**	**1.431*U**	**-2.998*T**
Concentration-T =	**0.0*K**	**-0.052*U**	**2.032*T**

Where K, U & T are the count rates (c/s) in the listed energy windows and the resulting concentration values are in pCi/g.

Digital files condensed as Cal_SD-GR-2_2009-v0.zip. This compressed file contains:

- Calibration raw data
- MathCad data analysis files
- Spreadsheet data formatting

The undersigned certifies that the data archived in the file "Cal_SD-GR-2_2009-v0.zip" were collected and evaluated in accordance with WHC-SD-EN-TI-293 and that the above stated calibration coefficients are correct and applicable for the tool SDGR.BGO.2 effective April 21, 2009.

Signature:

/s/ Russel Randall, PhD April 23, 2009
Three Rivers Scientific

Figure 3. Moisture Calibration Certificate, 15.24 cm (6-in.) and 20.32 cm (8-in.) Hole.

Certificate of Calibration for
Instrument SD-Moist792

February 25, 2009

Data were taken in the Moisture models on February 25, 2009, for SD-Moist792 neutron-neutron moisture tool. The neutron source from DOE moisture tool # H370608792 was used with the passive neutron detector probe from PNG.

Six models were used for moisture calibration, three for 15.24 cm (6-in.) casing and three for 20.32 cm (8-in.) casing. Repeated spectra were recorded for each model in order to perform statistical analysis. The observed statistical variation agreed with the theoretically predicted variation. Refer to the file MoistCal.xls for this analysis.

The coefficient generation is determined by the algorithm described in WHC-SD-EN-TI-306, *Radionuclide Logging System In Situ Vadose Zone Moisture Measurement Calibration*, Rev. 0. The regression function used is a power law form and defined by:

$$V = a \cdot CR^{\alpha}$$

Where V is the formation moisture content in volume fraction water in vf units. One vf unit is 1% by volume water. The coefficients a and α are fit coefficients, and CR is the deadtime corrected observed total count rate, (c/s).

6-in. casing	**8-in. casing**
a = .0001586	**a = .00008287**
α = 2.229	**α = 2.504**

The undersigned certifies that the data archived in data file "SD-Moist792_2009.zip" were collected and evaluated in accordance with WHC-SD-EN-TI-306, and that the above-stated calibration coefficients are correct and applicable for tool SD-Moist792, effective February 25, 2009.

Signature:

/s/ Russel Randall, PhD February 28, 2009
Three Rivers Scientific

Figure 4. Moisture Calibration Certificate, 6.35 cm (2.5-in.) Hole.

Moisture Calibration Extrapolation to 2.5 Inch Borehole
Instrument SD-Moist792

February 25, 2009

Moisture calibration was performed in the Hanford physical models. These standards have 15.24 cm and 20.32 cm (6-in. and 8–in.) inside diameter casings. The Tank Farm Direct Push borehole is cased with a 5.08 cm (2.5 in.) outside diameter iron casing. The calibration for the moisture response is a function of borehole diameter.

The coefficient generation is determined by the algorithm described in WHC-SD-EN-TI-306, *Radionuclide Logging System In Situ Vadose Zone Moisture Measurement Calibration*, Rev. 0.. The regression function used is a power law form and defined by:

$$V = a \cdot CR^{\alpha}$$

Where V is the formation moisture content in volume fraction water in vf units. One vf unit is 1% by volume water. The coefficients a and α are fit coefficients, and CR is the deadtime corrected observed total count rate, (c/s). A linear extrapolation was applied to determine the 5.08 cm (2.5-in.) borehole diameter.

2.51-in. borehole
a = .0002123
α = 2.010

The undersigned certifies that the analysis files are archived in the file "SD-Moist792_2009.zip" and were evaluated in accordance with Energy*Solutions* procedures and that the above-stated calibration coefficients are correct and applicable for tool SD-Moist792, effective February 25, 2009.

Signature:

/s/ Russel Randall, PhD February 28, 2009
Three Rivers Scientific

APPENDIX A
SPECTRAL GAMMA AND MOISTURE SURVEY RESULTS

Survey plots follow for the five probeholes installed for the S Tank Farm Barrier Characterization Study. Each probehole was surveyed with both the BGO spectral gamma and moisture probes. Each log plot is preceded by a header information page that shows the repeat/overlap intervals, isotopes analyzed, observations, and logging probe calibration dates. The log plots show a maximum of 100 feet per page with a 10 ft overlap between page breaks.

The spectral gamma survey data were processed to quantify the naturally occurring radionuclides (K, U, & Th), and the man-made radionuclide of Cs-137. The spectra were processed both as individual spectra for each survey depth and as a moving sum of three spectra (i.e., sum of the individual survey depth and the two adjacent spectra, one above and one below the current depth position). Both results are presented on the results plot. The results for the three-spectra sum are plotted as a wide line. Also, the gross gamma was calibrated to the industry standard of equivalent radium-226 (Eq.Ra) in a scale of 2 to 5.5 pCi/g (brown line).

The neutron-neutron moisture survey data are shown with a blue dotted line. The moisture plot scale is 0-35 (% vf).

Table A1, below, contains a summary of the survey results for each probehole. Table A1 also shows maximum log depth, maximum detection level for Cs-137, maximum depth of Cs-137 detection, and special observations by the analyst to flag the detection of other isotopes in addition to the natural radionuclides and Cs-137. A break in the drive casing for probehole C7743 prevented the logging probe from reaching the bottom of the probehole. The maximum log depth of probehole C7743 was 36.6 m (120 ft).

Table A1. Probehole Survey Summary.

Probehole ID.	Hole Depth (meters)	Hole Depth (feet)	Cs-137 (pCi/g) Max Detection	Cs-137 Max Detected Depth	Flag Isotopes Other Than Naturals and Cs-137
C7737	50.6	166	27 pCi/g at 0 ft	1 ft	None
C7739	47.3	155	15 pCi/g at 0 ft	9 ft	None
C7741	47.6	156	4 pCi/g at 0 ft	1 ft	None
C7743	36.6	120	4 pCi/g at 0 ft	1 ft	None
C7745	47.3	155	2 pCi/g at 0 ft	2.2 ft	None

S-FARM C7737 HEADER INFORMATION

Small Diameter – Spectral Gamma & Moisture Survey

Probehole:	C7737	Log Date:	Feb 2010
Project:	S Farm	Depth Ref:	Ground Surface

REPEAT/OVERLAP INTERVALS

Spectral:	153-148	Moisture	87-77
	55-51		
	57-42		

ISOTOPES ANALYZED

Elements:	Energies Used (keV)
K-40	1462
Natural Uranium	1650-2390
Natural Thorium	2614
Cs-137	661

OBSERVATIONS

Spectral:

Cs-137 was observed at the surface, with a maximum reading of 27 pCi/g. The gross that is plotted (Eq.Ra) has an energy threshold of 1000keV, which is above the photo peak energy of Cs-137.

Moisture:

Moisture values range from 6-34%.

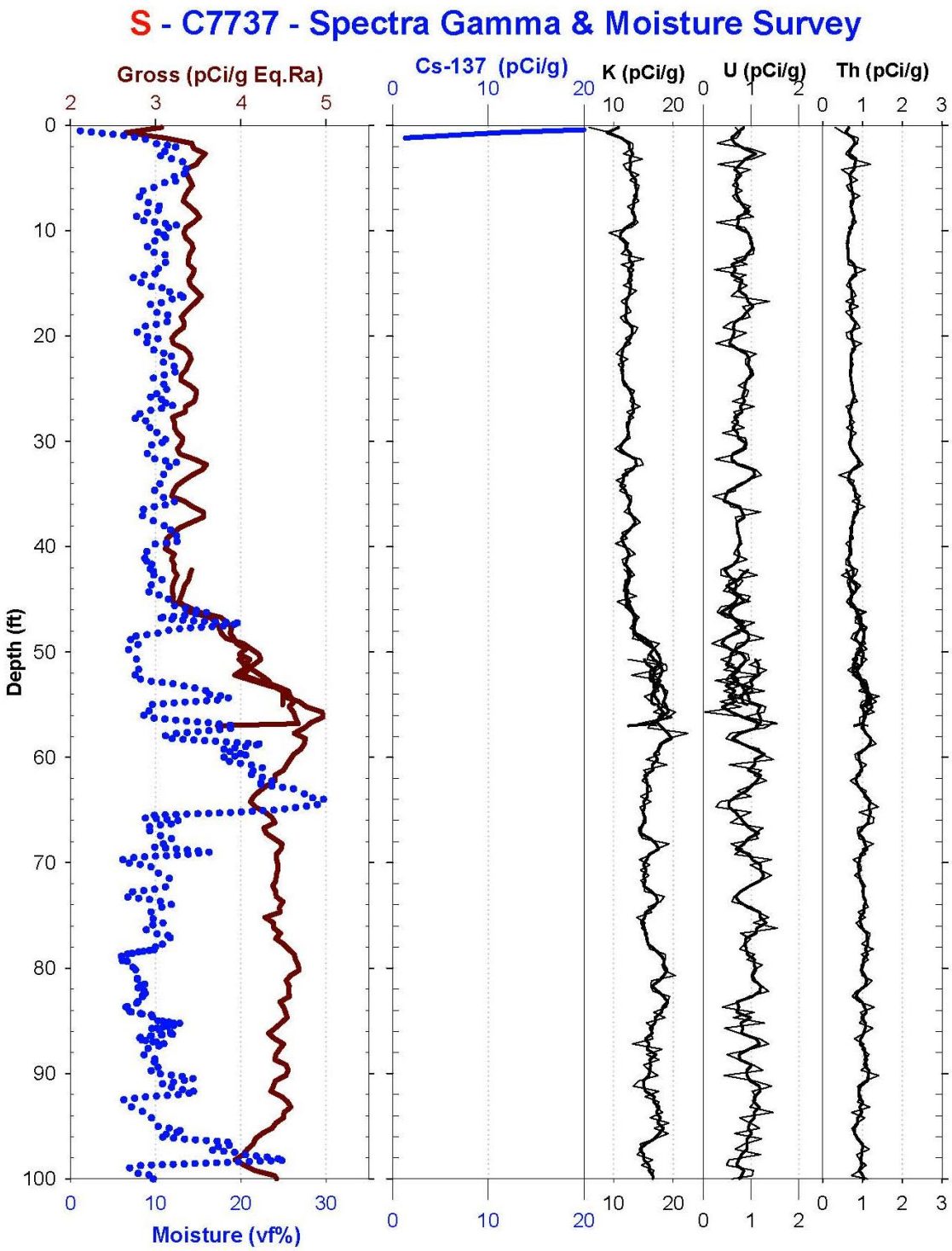
CALIBRATION CERTIFICATES

Spectral

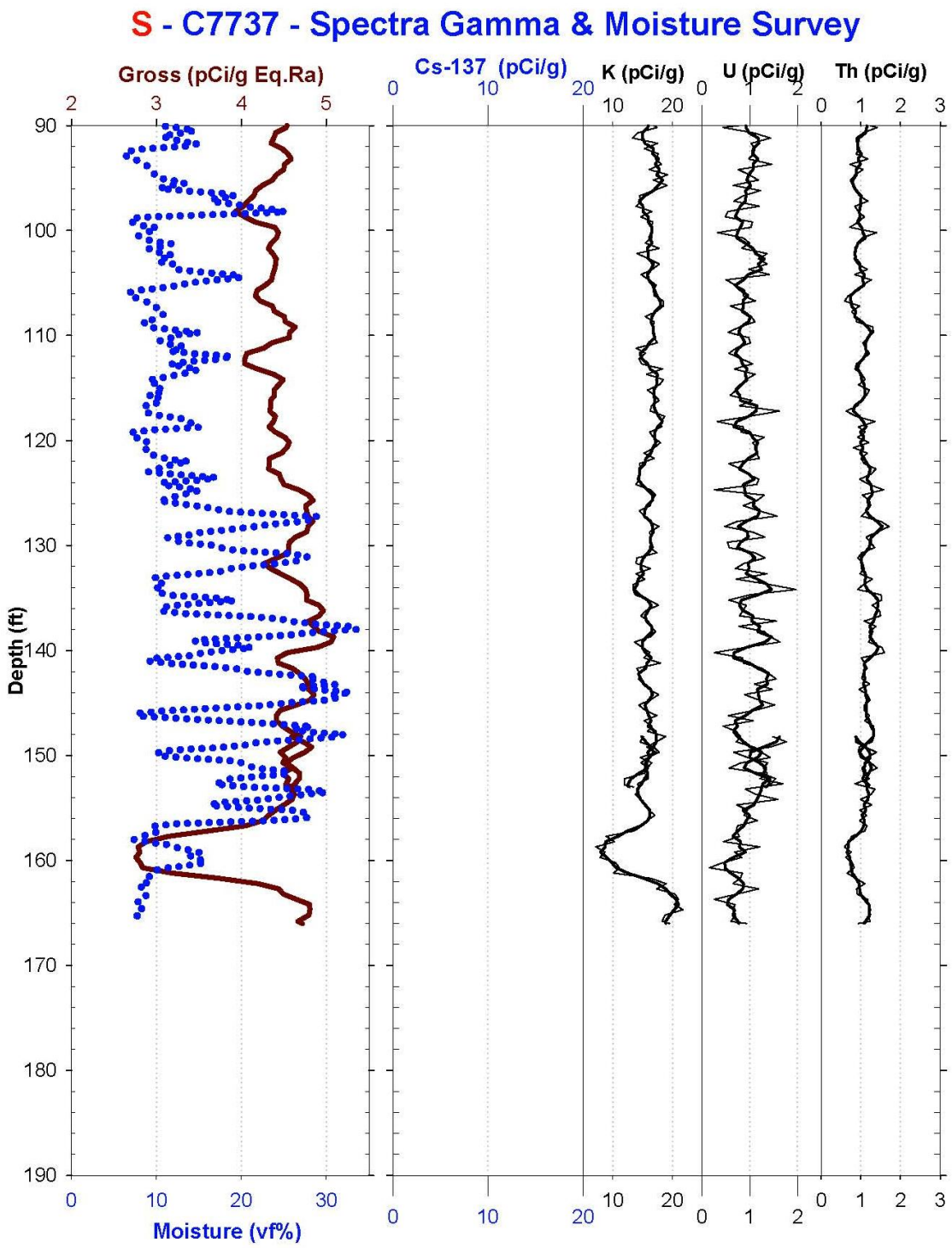
Date:	Apr 21, 2009
Electronic File:	Cal_SD-GR-2_2009-v0.zip

Moisture

Date:	Feb 25, 2009
Electronic File:	SD-Moist792_2009.zip


S - C7737 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

A-3


S - C7737 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

S-FARM C7739 HEADER INFORMATION

Small Diameter – Spectral Gamma & Moisture Survey

Probehole:	C7739	Log Date:	Feb 2010
Project:	S Farm	Depth Ref:	Ground Surface

REPEAT/OVERLAP INTERVALS

Spectral:	99-95	Moisture	155-149
	60-55		

ISOTOPES ANALYZED

Elements:	Energies Used (keV)
K-40	1462
Natural Uranium	1650-2390
Natural Thorium	2614
Cs-137	661

OBSERVATIONS

Spectral:

Cs-137 was observed at the surface, with a maximum reading of 14.8 pCi/g. Cs-137 is also present from 8 to 9ft, just above a moisture lens.

Moisture:

Moisture values range from 3-33%.

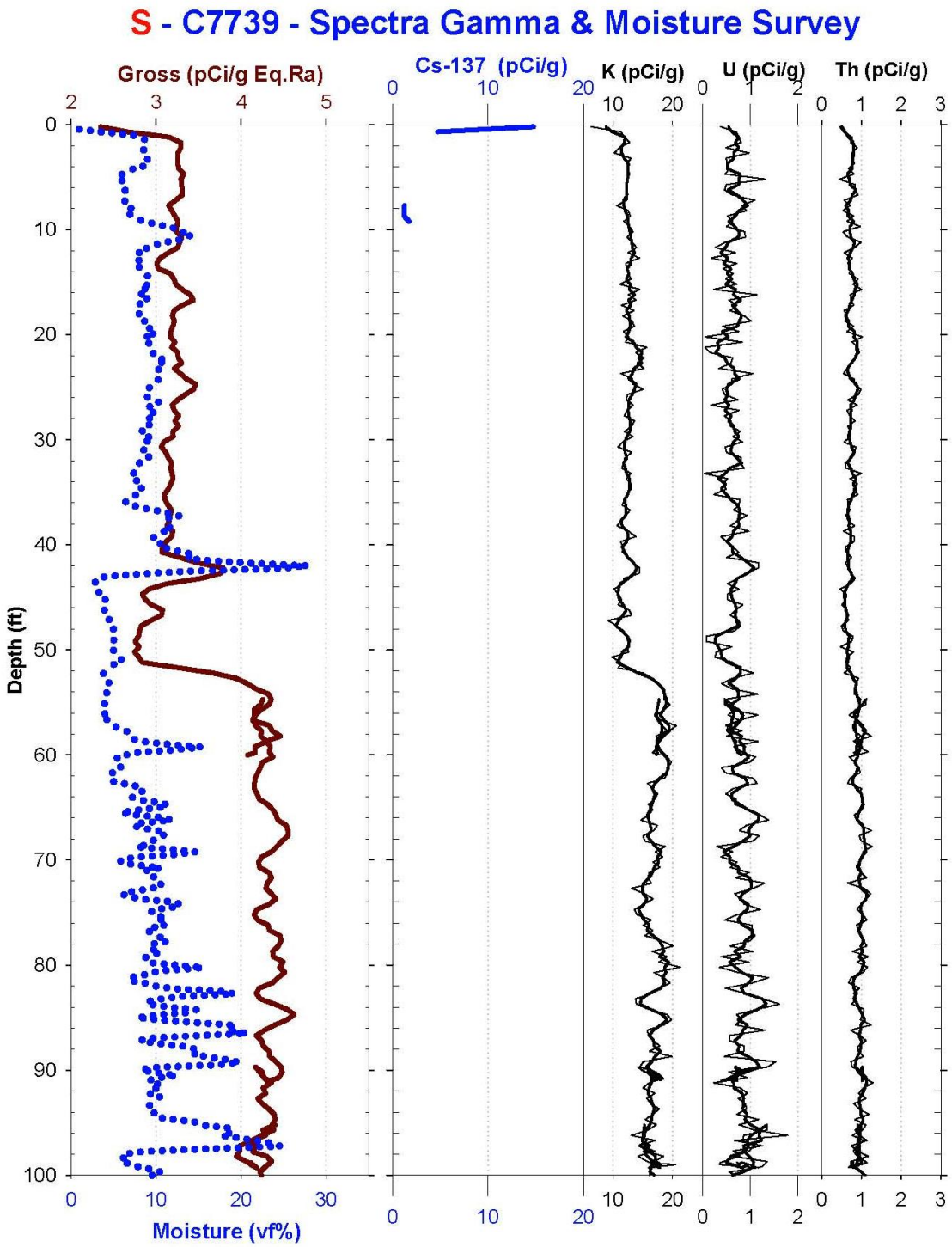
CALIBRATION CERTIFICATES

Spectral

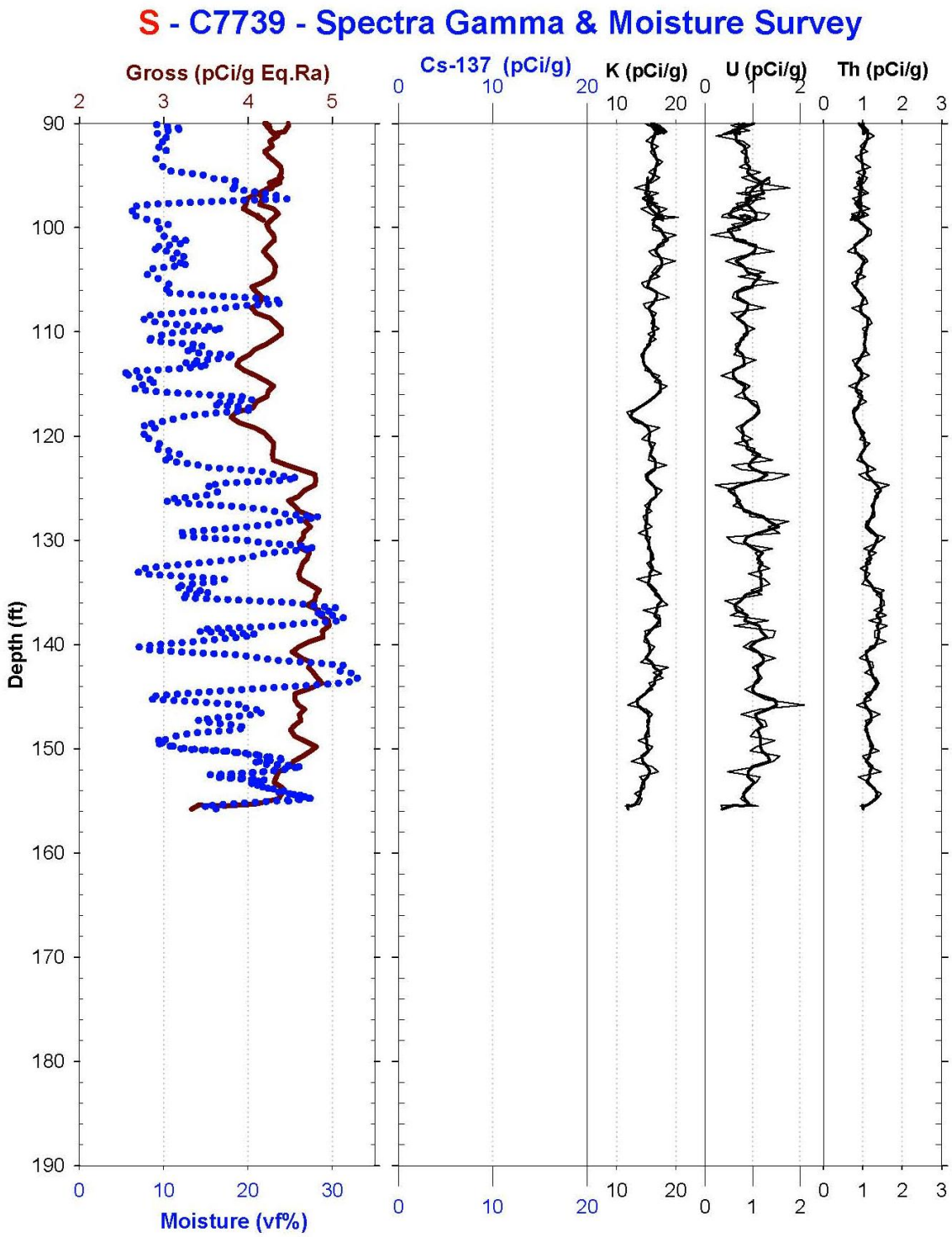
Date:	Apr 21, 2009
Electronic File:	Cal_SD-GR-2_2009-v0.zip

Moisture

Date:	Feb 25, 2009
Electronic File:	SD-Moist792_2009.zip


S - C7739 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

A-6


S - C7739 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

S-FARM C7741 HEADER INFORMATION

Small Diameter – Spectral Gamma & Moisture Survey

Probehole:	C7741	Log Date:	Feb 2010
Project:	S Farm	Depth Ref:	Ground Surface

REPEAT/OVERLAP INTERVALS

Spectral:	96-94	Moisture	75-60
	97-94		
	20-14		

ISOTOPES ANALYZED

Elements:	Energies Used (keV)
K-40	1462
Natural Uranium	1650-2390
Natural Thorium	2614
Cs-137	661

OBSERVATIONS

Spectral:

Cs-137 was observed at the surface, with a maximum reading of 3.7 pCi/g.

Moisture:

Moisture values range from 3-33%.

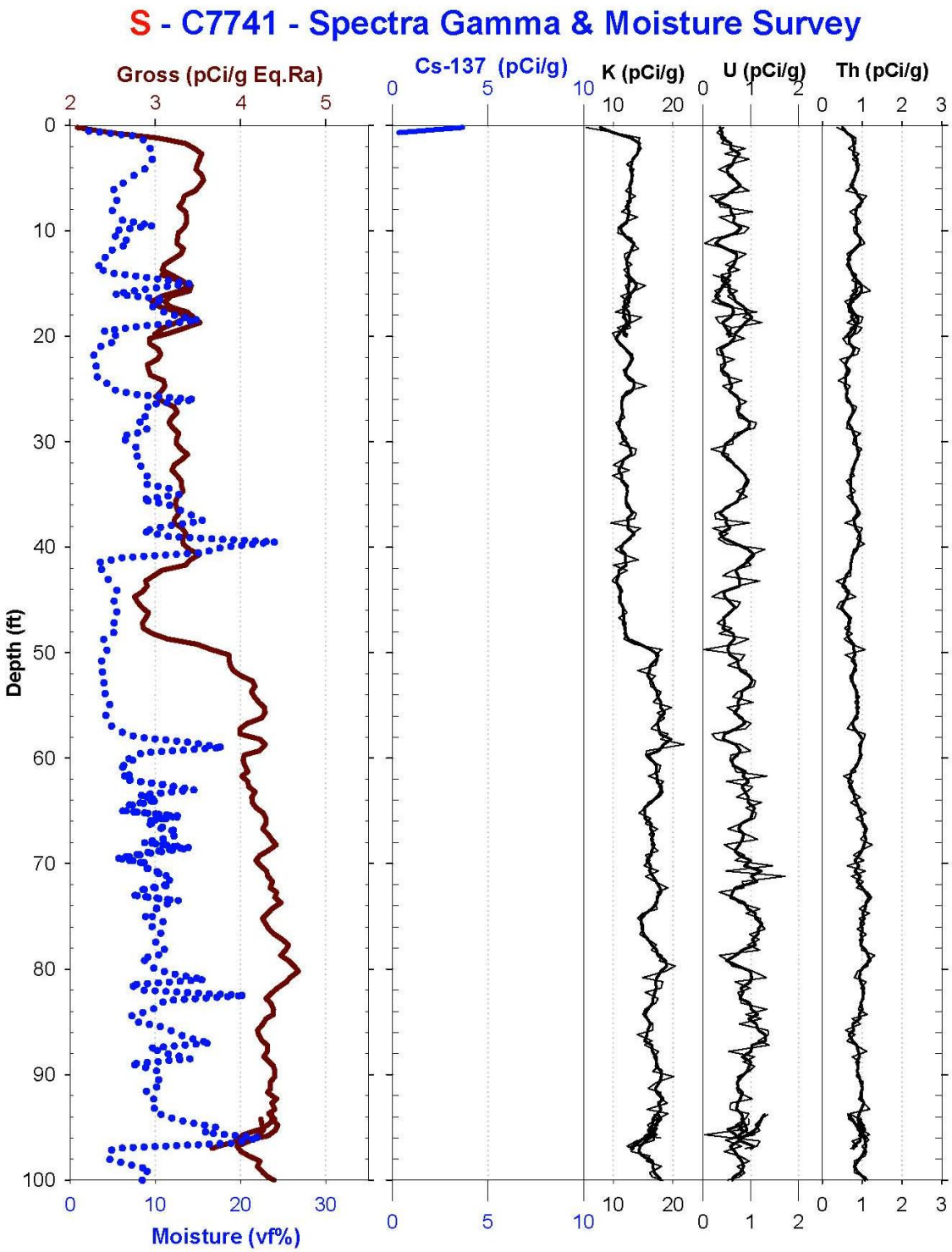
CALIBRATION CERTIFICATES

Spectral

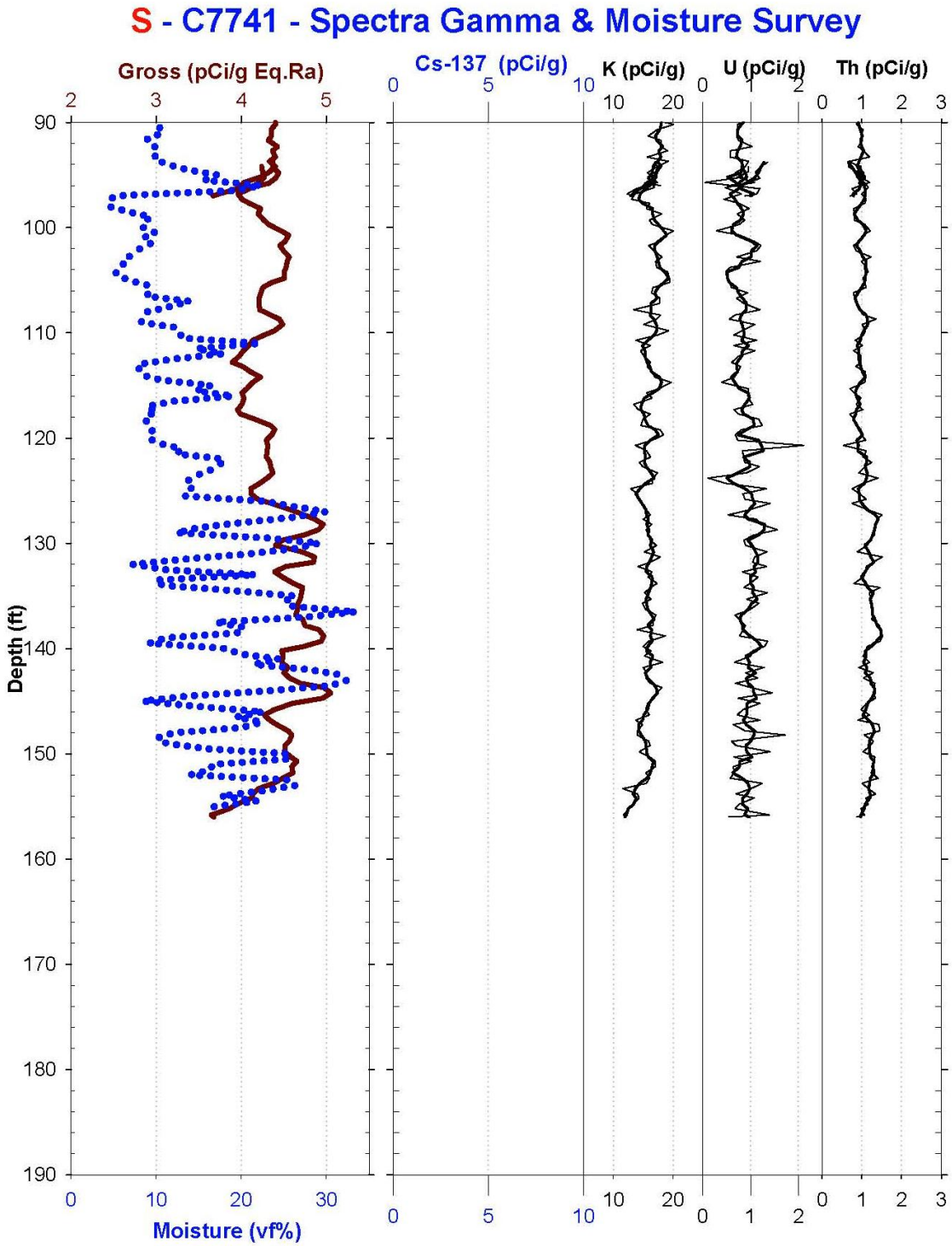
Date:	Apr 21, 2009
Electronic File:	Cal_SD-GR-2_2009-v0.zip

Moisture

Date:	Feb 25, 2009
Electronic File:	SD-Moist792_2009.zip


S - C7741 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

A-9


S - C7741 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

S-FARM C7743 HEADER INFORMATION

Small Diameter – Spectral Gamma & Moisture Survey

Probehole:	C7743	Log Date:	Mar 2010
Project:	S Farm	Depth Ref:	Ground Surface

REPEAT/OVERLAP INTERVALS

Spectral:	118-115	Moisture:	120-114
	55-49		40-32
	50-49		35-24

ISOTOPES ANALYZED

Elements:	Energies Used (keV)
K-40	1462
Natural Uranium	1650-2390
Natural Thorium	2614
Cs-137	661

OBSERVATIONS

Spectral:

Cs-137 was observed at the surface, with a maximum reading of 4.3 pCi/g. Cs-137 does not show a response in the Eq-Ra226 because the energy threshold used 1000keV; which is above the Cs-137 gamma emitted.

Moisture:

Moisture values range from 2-24%.

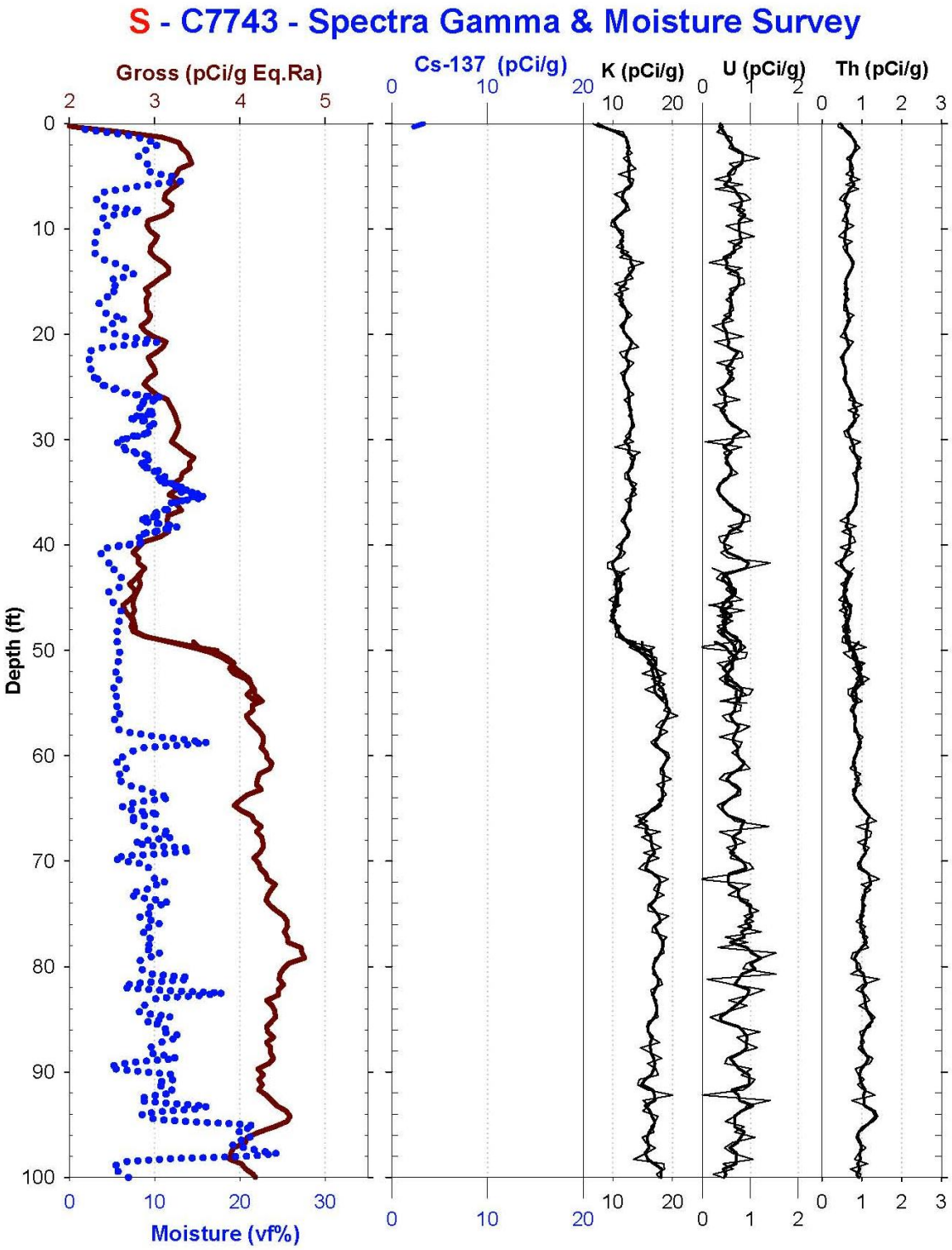
CALIBRATION CERTIFICATES

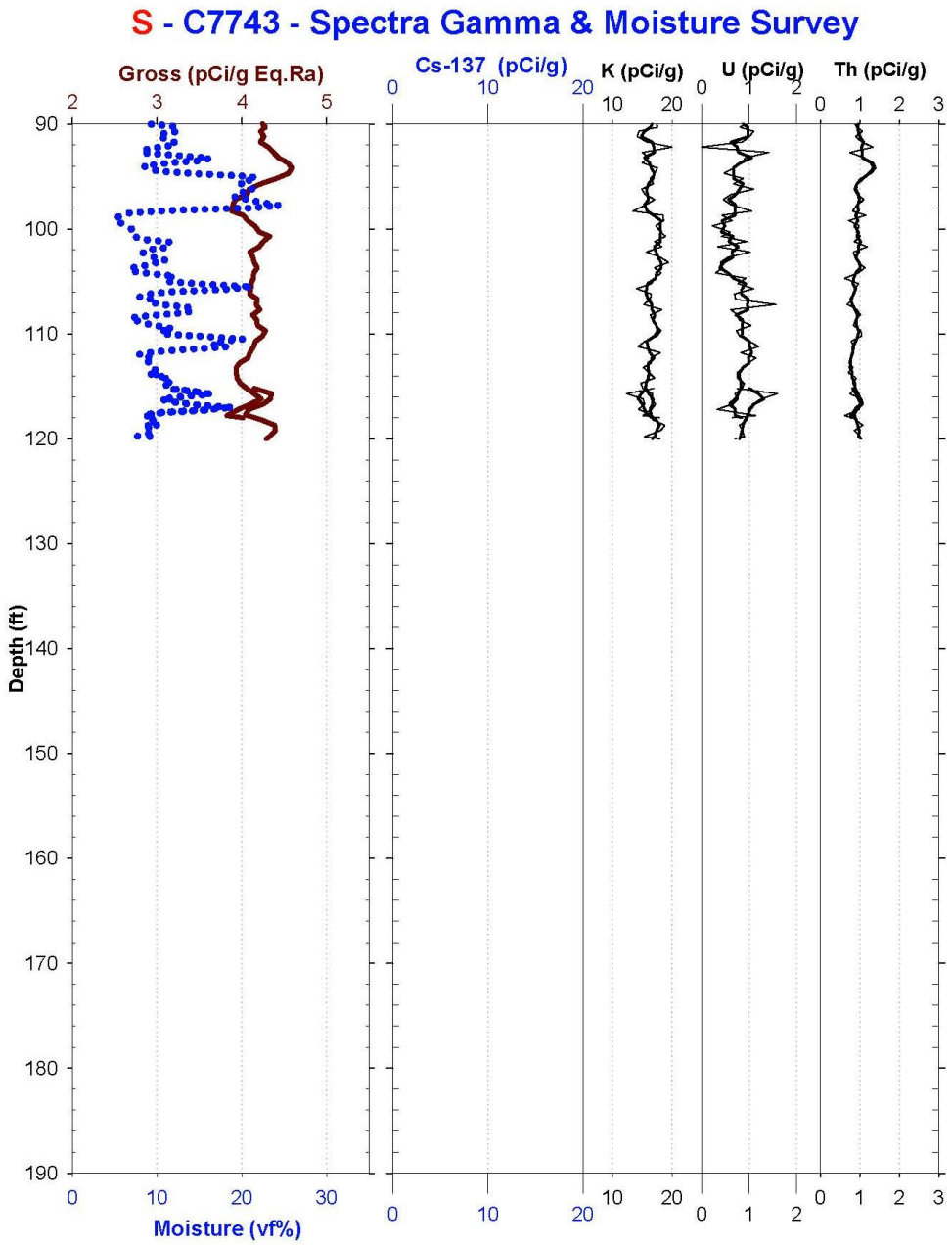
Spectral

Date:	Apr 21, 2009
Electronic File:	Cal_SD-GR-2_2009-v0.zip

Moisture

Date:	Feb 25, 2009
Electronic File:	SD-Moist792_2009.zip


S - C7743 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)


S - C7743 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

A-13

S-FARM C7745 HEADER INFORMATION

Small Diameter – Spectral Gamma & Moisture Survey

Probehole:	C7745	Log Date:	Mar 2010
Project:	S Farm	Depth Ref:	Ground Surface

REPEAT/OVERLAP INTERVALS

Spectral:	144-141	Moisture:	45-39
	85-83		

ISOTOPES ANALYZED

Elements:	Energies Used (keV)
K-40	1462
Natural Uranium	1650-2390
Natural Thorium	2614
Cs-137	661

OBSERVATIONS

Spectral:

Cs-137 was observed at the surface, with a maximum reading of 1.9 pCi/g. There is also a single depth sample show of Cs-137 at 2.2ft with a reading of 1.6pCi/g. This single point may just be a contaminated dirt particle that fell from the surface inside the casing. Cs-137 does not show a response in the Eq-Ra226 because the energy threshold used 1000keV; which is above the Cs-137 gamma emitted.

Moisture:

Moisture values range from 3-33%.

CALIBRATION CERTIFICATES

Spectral

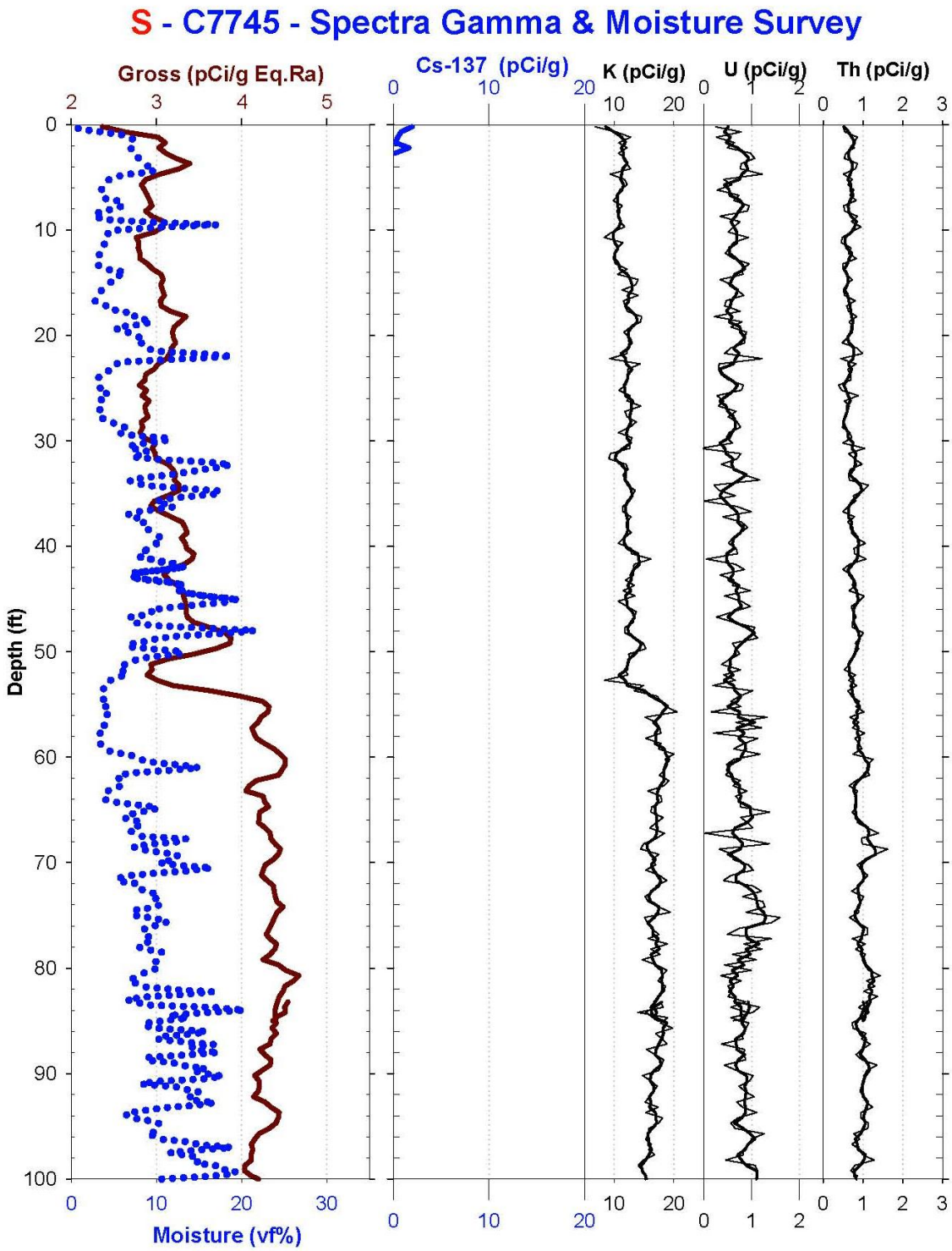
Date: Apr 21, 2009

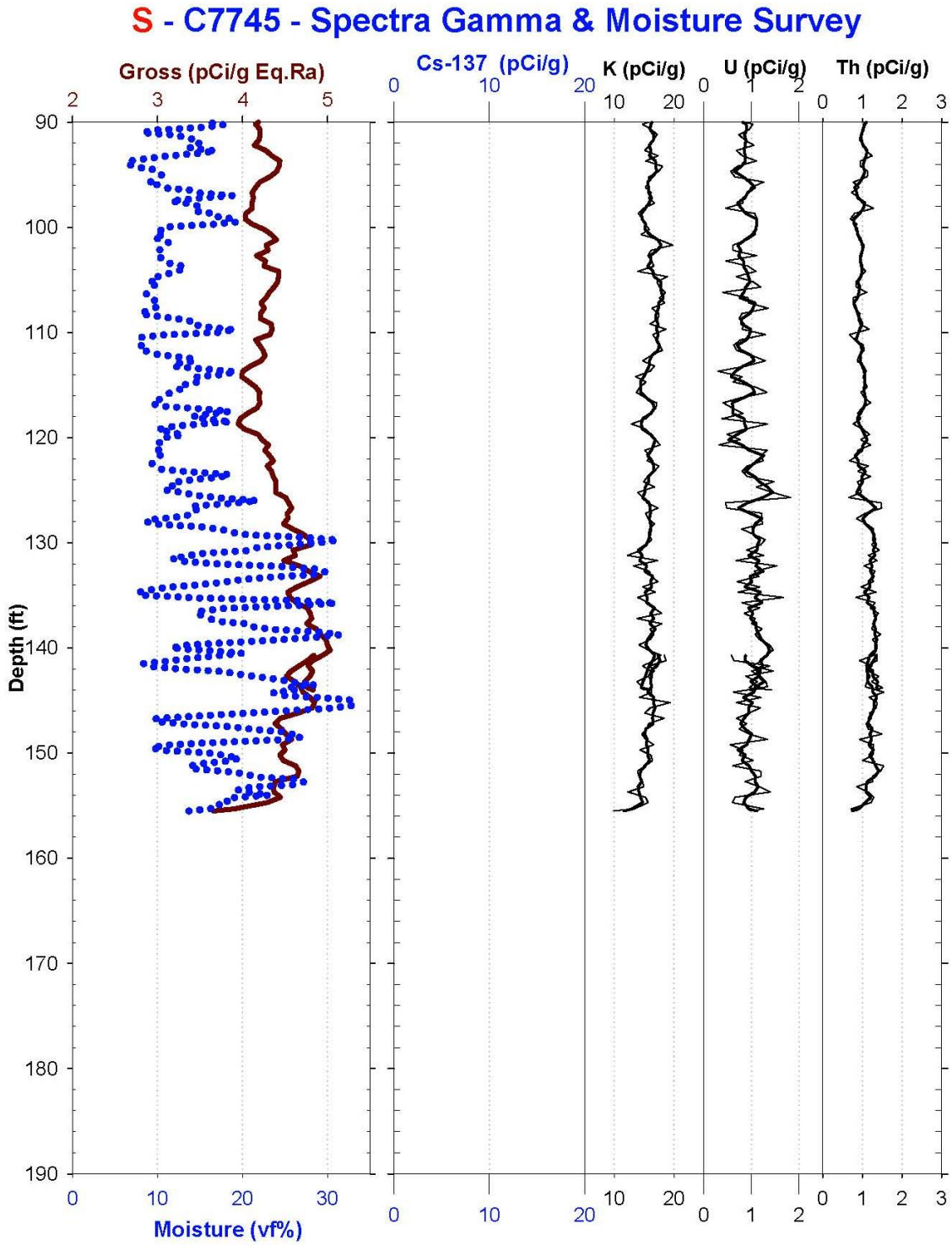
Electronic File: Cal_SD-GR-2_2009-v0.zip

Moisture

Date: Feb 25, 2009

Electronic File: SD-Moist792_2009.zip


S - C7745 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)


S - C7745 - Spectra Gamma & Moisture Survey
Gross (pCi/g Eq.Ra)
Cs-137 (pCi/g)
K (pCi/g)
U (pCi/g)
Th (pCi/g)
Depth (ft)
Moisture (vf%)

APPENDIX E

CHAIN OF CUSTODY FORMS AND FIELD LOGBOOK ENTRIES

This page intentionally left blank.

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev _____

Date Samples Received: 3/23/10 Group #: _____

Number of Samples: 8 (2 sets of 4)

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete	✓		On file
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	✓		☐ Check if no cooler and/or no ice -1° C
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		2B Ref 4

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials * Date 3/23/10

If No, comment on communication and resolution:

* [illegible] for QR

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-007	PAGE 1 OF 2
COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND: 75 Days / 75 Days
SAMPLING LOCATION: C7738 I001	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY: ☐	
ICE CHEST NO.: TF VS-09-003	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 45-47	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24HH9	SOIL	3-23-10	1030
S10V000488	Liner A		
S10V000489	Liner B		
S10V000490	Liner C		
S10V000491	Shoe		

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BCampbell BCampbell	3-23-10 1305	[illegible]	3/23/10 1305

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Group # 2225 20100311

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

RPP-47274, Rev. 0

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-007	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7738 I001	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 45-47	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-008	PAGE 1 OF 2
COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND
SAMPLING LOCATION: C7738 I002	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY: ☐	75 Days / 75 Days
ICE CHEST NO.: TFVZ-09-603	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 62-64	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24HJ0	SOIL	3-23-10	1413	✓
S10V000505	Liner A			
S10V000506	Liner B			
S10V000507	Liner C			
S10V000508	Shoe			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Campbell B Campbell	DATE/TIME: 3-23-10 1505	RECEIVED BY/STORED IN: C Edwards C Edwards	DATE/TIME: 3/23/10 1505
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Group # 222S 20100311

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

RPP-47274, Rev. 0

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-008	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE SP AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7738 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 62 - 64	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate anc Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Europium, Chromium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-009	PAGE 1 OF 2
COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND
SAMPLING LOCATION: C7738 I003	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY ☐	75 Days / 75 Days
ICE CHEST NO.: TFVZ-09-003	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 96-98	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24KV1	SOIL	3-30-10	1350
S10V000509	Liner A		
S10V000510	Liner B		
S10V000511	Liner C		
S10V000512	Shoe		

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B Campbell / BC-pbell	3-30-10 1495	RD Hale / RD HALE	3/30/10 / 14:45

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

-1 2

Group#

222S2010311

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

RPP-47274, Rev. 0

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-009	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7738 I003	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH 96-98	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Uranium, Phosphorus, Silicon} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EE-0

Date Samples Received: 4/1/10 Group #: 20100311

Number of Samples: ~~4~~ 1 sample (4 containers)

Sample Custodian: C Edwards

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	Y		
RSR provided?		NA	
Verify GKI is complete	Y		On file
Check that outer custody seal is intact, if present	Y		
Record cooler temperature in centigrade, as appropriate	Y		☐ Check if no cooler and/or no ice 1° C
Samples are intact and in good condition	Y		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	Y		
• Date and time of sampling	Y		
• Sampling location or origin	Y		
• Container type, size, and number	Y		
• Analysis request is clear	Y		
• Signature of persons relinquishing and receiving samples	Y		
• Date and/or time of sample custody exchange	Y		
Verify that sample numbers on containers match the COC and/or RSA	Y		
Samples stored properly (e.g., refrigeration)	Y		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials * Date 4/1/10

If No, comment on communication and resolution: CQ for QR

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-010	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Campbell	SYDNOR, HA	373-3967	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.
C7738 I004	Direct Push Samples for Area SE of S Tank Farm - Interim Barrier	V10-004

ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT
TFV2-09-003	TFV2-10-000002	127-129	n/A	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
222-S Lab Operations	n/A	n/A

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24KV2	SOIL	4-1-10	0840	✓
S10V000513	Liner A			
S10V000514	Liner B			
S10V000515	Liner C			
S10V000516	Shoe			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BCampbell BC-pbell	4-1-10 1000	[illegible] C Edwards	4/1/10 1000
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

20282010031L

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-010	PAGE 1 OF 2
COLLECTOR: Campbell	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND
SAMPLING LOCATION: C7738 I004	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY ☐	75 Days / 75 Days
ICE CHEST NO.: TEV2-09-003	FIELD LOGBOOK NO.: TEV2-10-000002	ACTUAL SAMPLE DEPTH: 127-129	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24KV2	SOIL	4-1-10	0840	✓
S10V000513	Liner A			
S10V000514	Liner B			
S10V000515	Liner C			
S10V000516	Shoe			

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BCampbell BCampbell	4-1-10 1000	[illegible]	4/1/10 1000

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

2020210100311

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-010	PAGE 2 OF 2
COLLECTOR Campbell	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7738 I004	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004	AIR QUALITY ☐	
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 127-129	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Ruthenium, Silicon, Uranium, Phosphorus, Magnesium} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-5003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EF-0

Date Samples Received: 4-7-10 Group #: 20100311

Number of Samples: 1 Set Sx, Barrier

Sample Custodian: RH Hata

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete	✓		on File
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	✓		☐ Check if no cooler and/or no ice -1°C T/B
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		REF # 6

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials RK Date 4-7-10

If No, comment on communication and resolution: For JR Ritenour

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-006	PAGE 1 OF 2
COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND
SAMPLING LOCATION: C7738 I005	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY ☐	75 Days / 75 Days
ICE CHEST NO.: TFVZ-09-003	FIELD LOGBOOK NO.: TFVZ-10-000003 2 BC 4-7-10	ACTUAL SAMPLE DEPTH: 159 – 161	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24KV3	SOIL	4-7-10	1038	✓
S10V000517	Liner A			
S10V000518	Liner B			
S10V000519	Liner C			
S10V000520	Shoe			

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B Campbell BC—Pbell	4.7.10 1130	RA Steele RASteele	4.7.10 1130

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

-1°C - BLANK
pta

222S20100311

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-006	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7738 I005	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV7-10-000002	ACTUAL SAMPLE DEPTH 159 – 161	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EE-8

Date Samples Received: 4/19/10 Group #: 2010347

Number of Samples: 3

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	Y		
RSR provided?		NA	
Verify GKI is complete	Y		
Check that outer custody seal is intact, if present	Y		
Record cooler temperature in centigrade, as appropriate	Y		☐ Check if no cooler and/or no ice. Blank-0 SX-Barrier-14
Samples are intact and in good condition	Y		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	Y		
• Date and time of sampling	Y		
• Sampling location or origin	Y		
• Container type, size, and number	Y		
• Analysis request is clear	Y		
• Signature of persons relinquishing and receiving samples	Y		
• Date and/or time of sample custody exchange	Y		
Verify that sample numbers on containers match the COC and/or RSA	Y		
Samples stored properly (e.g., refrigeration)	Y		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials CR Date 4/19/10

If No, comment on communication and resolution: for QR

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-011	PAGE 1 OF 2

COLLECTOR: Dan Harris per Jackson w/ Dan Horley	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC
SAMPLING LOCATION: ~~C7740-I001~~ BL 4-27-10 C7742-I001	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004
ICE CHEST NO.: TFUZ-09-003	FIELD LOGBOOK NO.: TFUZ-10-000002	ACTUAL SAMPLE DEPTH: 40' - 42'	COA: n/A
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A

PRICE CODE: 8P
AIR QUALITY: ☐
DATA TURNAROUND: 75 Days / 75 Days
METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	43 4-19-10
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24YW0	SOIL	4-19-10	12:15
S10V000716	Liner A		
717	Liner B		
718	Liner C		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: D. Harris	DATE/TIME: 4-19-10 1255	RECEIVED BY/STORED IN: C. Salvarez / C. Salvarez	DATE/TIME: 4/19/10 1255
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

222S20100347

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-011	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION ~~C7740 I001~~ 4-22-10 BZ C7742 I001	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH 40' - 42'	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Tin, Sulfur, Lead, Neodymium, Sodium, Tantalum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Tellurium, Aluminum, Iron, Lanthanum, Praseodymium, Rhenium, Copper, Tungsten, Beryllium, Cerium, Strontium, Yttrium, Zinc, Zirconium, Molybdenum, Titanium, Calcium, Thorium, Manganese, Ruthenium, Silicon, Uranium, Phosphorus, Lithium, Magnesium} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EE.0

Date Samples Received: 4-23-10 Group #: _____

Number of Samples: (1 set) CFARM vadose (1 set) SSX Barrier

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on File
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	0°C -1°C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? _____ PM Initials _____ Date _____

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-012	PAGE 1 OF 2

COLLECTOR: Campbell	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P; AIR QUALITY: ☐; DATA TURNAROUND: 75 Days / 75 Days
SAMPLING LOCATION: ~~C7748 1002~~ BC 4-27-10 C7742 I002	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	
ICE CHEST NO.: TFV2-09-003	FIELD LOGBOOK NO.: TFV2-10-000052	ACTUAL SAMPLE DEPTH: 96-98	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YW1	SOIL	4/23/10	1100	✓
S10V000720	Liner A			
721	Liner B			
722	Liner C			
723	Shoe			

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B Campbell BC-pbell	4-23-10 1150	Richard Rifsteda	4-23-10 1150

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

OCTB
RK

222S 2010 347

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-619(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-012	PAGE 2 OF 2
COLLECTOR Campbell	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION ~~C7740 I002~~ C7740 C7742 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH 96-98	COA na	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/a		BILL OF LADING/AIR BILL NO. na		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Lanthanum, Iron, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EG.0

Date Samples Received: 5-4-10 Group #: 20100213, 20100347

Number of Samples: 2 sets vadose

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present		✓	
Record cooler temperature in centigrade, as appropriate	0°/-1°		☐ Check if no cooler and/or no ice
Samples are intact and in good condition			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials MPN Date 5-4-10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-017	PAGE 1 OF 2

COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC
PRICE CODE: 8P	AIR QUALITY: ☐	DATA TURNAROUND: 75 Days / 75 Days	
SAMPLING LOCATION: C7742 I003	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier	SAF NO.: V10-004	
ICE CHEST NO.: TFV2-09-003	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 135-137	COA: N/A
METHOD OF SHIPMENT: GOVERNMENT VEHICLE			
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24YW6	SOIL	5-4-10	1135
S10V000777	A		
778	B		
779	C		
780	Shoe		

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES: RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM: B Campbell BC-Campbell	5-4-10 1215	RA Steele RASteele	5-4-10 12:15
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

DPR 5-4-10

347

TB

GRP# 22252010 0350

Sample# S10V000777 → 780

OMNI Rev

LABORATORY SECTION	RECEIVED BY:	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-017	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7742 I003	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVZ-09-003	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 135-137	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev _____

Date Samples Received: 5/12/10 Group #: 20100062

Number of Samples: 5

Sample Custodian: J McCollod 272TCSSX E.B. 349 DPR 5-12-10

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?		✓	
Verify GKI is complete		✓	
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	✓		☐ Check if no cooler and/or no ice Blank 4°C
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials DPR Date 5-12-2010

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-005-001	PAGE 1 OF 1
COLLECTOR: Campbell / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 7P	DATA TURNAROUND
SAMPLING LOCATION: 272TC Equipment Samples	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier - QC Sam		SAF NO.: V10-005	AIR QUALITY: ☐	75 Days / 75 Days
ICE CHEST NO.: TFV2-09-003	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: Equipment sample	COA: n/a	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/a		BILL OF LADING/AIR BILL NO.: n/a		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION				HNO3 to pH <2 (ULTREX)	Cool~4C	HNO3 to pH <2	None
HOLDING TIME				6 months/28 days	28 Days/48 Hours/ASAP	6 Months	6 Months
TYPE OF CONTAINER				G	G/P	G/P	G/P
NO. OF CONTAINER(S)				1	1	2	1
VOLUME				500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	IC Anions - 9056; pH (Water) - 9040 (TF);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	C-14; H3 - TRITIUM; I129_SEP_GEA (TF);
				766	761	768	767
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B25LB6	WATER	5-12-10	1520	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Campbell Campbell	DATE/TIME: 5-12-10 1430	RECEIVED BY/STORED IN: T.L. Poch	DATE/TIME: 5/12/10 @ 1430
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (SW-846) (TF); Mercury - 7470 - (CV) (TF); RADISO_ICPMS (TF);
(2) GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); CURIUM; Nickel-63 (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Selenium-79 (TF); Strontium-89,90 – Sr-90;

20100349

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev GG.0

Date Samples Received: 5-7-10 Group #: 20100350

Number of Samples: 1 set S-SX VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	-1°C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials GPR Date 5-10-10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-015	PAGE 1 OF 2
COLLECTOR: Dan Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND
SAMPLING LOCATION: C7740 I001	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY ☐	75 Days / 75 Days
ICE CHEST NO.: TFVS-09-003	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 40' - 42'	COA: n/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/A		BILL OF LADING/AIR BILL NO.: n/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~4C
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	Liners/G jar
		NO. OF CONTAINER(S)	4
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YW4	SOIL	5-7-10	10:15	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: Dan Harris Dan Harris	DATE/TIME: 5-7-10 11:00	RECEIVED BY/STORED IN: RHSteele RHSteele	DATE/TIME: 5.7.10 1100	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	1 oc TB RAK
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	222S20100350
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	S10V000769, 770,
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	771, 772
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-015	PAGE 2 OF 2
COLLECTOR Dan Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7740 I001	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS - 09- 003	FIELD LOGBOOK NO. TFVZ-18-000002	ACTUAL SAMPLE DEPTH 40' - 42'	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1) ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate}; pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Aluminum, Barium, Beryllium, Bismuth, Boron, Calcium, Cerium, Chromium, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhenium, Rubidium, Ruthenium, Samarium, Silicon, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thorium, Tin, Titanium, Tungsten, Uranium, Yttrium, Zinc, Zirconium}; 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126}; GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90}; ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EE-0

Date Samples Received: 5/12/10 Group #: 20100350

Number of Samples: 1

Sample Custodian: T. McGilrch

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	✓		☐ Check if no cooler and/or no ice Blank 9°C
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? _____ PM Initials _____ Date _____

If No, comment on communication and resolution:

Group # 20100350
Sample # S10V000782

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-016	PAGE 1 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7740 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH 96-98	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~4C
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	Liners/G jar
		NO. OF CONTAINER(S)	4
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YW5	SOIL	5-12-10	0945	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
Campbell C-Campbell	5-12-10 1030	TM Gilbert	5/12/10 @1030	20100350
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	510V000773 – A
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	774 – B
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	775 – C
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	776 – Shoe
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-016	PAGE 2 OF 2
COLLECTOR Campbell / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7740 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFV2-09-003	FIELD LOGBOOK NO. TFV2-09-000002 10 AR 5-12-10	ACTUAL SAMPLE DEPTH 96-98	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1) ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate}; pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Aluminum, Barium, Beryllium, Bismuth, Boron, Calcium, Cerium, Chromium, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhenium, Rubidium, Ruthenium, Samarium, Silicon, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thorium, Tin, Titanium, Tungsten, Uranium, Yttrium, Zinc, Zirconium}; 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126}; GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90}; ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EE.0

Date Samples Received: 5.25.10 Group #: 20100426

Number of Samples: 1 set S-Farm VADose

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete			on File
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	8c		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g. refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials DPR Date 5-27-10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-023	PAGE 1 OF 2

COLLECTOR: Harris / Ekstrom	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC
SAMPLING LOCATION: C7746 I001	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 44-46 ft	COA: N/A
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8P
AIR QUALITY: ☐
DATA TURNAROUND: 75 Days / 75 Days
METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4 (3 Liner, 1 Jar)
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YX2	SOIL	5/25/10	0955	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BC Ekstrom / BC Ekstrom	5/25/10 1035	R Steele / R Steele	5-25-10 1035

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

0 L TB
0 PK

GRP# 20100426
SAM# 510V001016 A
1017 B
1018 C
1019 JAR/Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-023	PAGE 2 OF 2
COLLECTOR Hoots/ Ekstrom	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7746 I001	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS- 09- 008	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 44- 46'	COA n/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. n/A		BILL OF LADING/AIR BILL NO. n/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.

(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Tellurium, Aluminum, Iron, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.E. D

Date Samples Received: 6.1.10 Group #: 20100426

Number of Samples: 1 set 5-5x VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete			on File
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	0°C TB		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling			
• Sampling location or origin			
• Container type, size, and number			
• Analysis request is clear			
• Signature of persons relinquishing and receiving samples			
• Date and/or time of sample custody exchange			
Verify that sample numbers on containers match the COC and/or RSA			
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials [illegible] Date 6.1.10

If No, comment on communication and resolution: per J.R.

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-024	PAGE 1 OF 2
COLLECTOR: Ekstrom	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND: 75 Days / 75 Days
SAMPLING LOCATION: C7746 I002	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-~~09~~ 10-000002	ACTUAL SAMPLE DEPTH: 94-96 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4 (3 Liners 1 JAR)
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24YX3	SOIL	6/1/10	1200

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RL Ekstrom BC Ekstrom	6-1-10 1250	RA Stecle RA Stecle	6-1-10 1250

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

OC TB
O RK

GRP # 20100426
SAM # S10V001031
1032 LA
1033 LB
1034 JAR

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618/01 (05)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-024	PAGE 2 OF 2
COLLECTOR	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7746 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO.		BILL OF LADING/AIR BILL NO.		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Lanthanum, Iron, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Tellurium, Aluminum, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus, Lithium} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6-3-10 Group #: 20100426

Number of Samples: 1 set 5-5k VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	2°C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling			
• Sampling location or origin			
• Container type, size, and number			
• Analysis request is clear			
• Signature of persons relinquishing and receiving samples			
• Date and/or time of sample custody exchange			
Verify that sample numbers on containers match the COC and/or RSA			
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials: APR Date 6-3-10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-025	PAGE 1 OF 2
COLLECTOR: Dan Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND: 75 Days / 75 Days
SAMPLING LOCATION: C7746 I003	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY: ☐	
ICE CHEST NO.: TFUS-09-008	FIELD LOGBOOK NO.: TFUZ-10-000002	ACTUAL SAMPLE DEPTH: 144' - 146'	COA: n/a	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: n/a		BILL OF LADING/AIR BILL NO.: n/a		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24YX4	SOIL	6-3-10	14:15

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Dan Harris	6-3-10 1445	RtSteele RtSteele	6-3-10 1445

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

-10 °C TB

GRP# 20100426
SAM# 510V001046 A
1047 B
1048 C
1049 JAR

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

RPP-47274, Rev. 0

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-025	PAGE 2 OF 2
COLLECTOR Dan Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7746 I003	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS-09-008	FIELD LOGBOOK NO. TFUZ-10-000002	ACTUAL SAMPLE DEPTH 144' - 146'	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.

(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6.7.10 Group #: 20100454

Number of Samples: 1 set Cx.Fam VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	0°C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials GPR Date 6-9-10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-019	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8P	DATA TURNAROUND
Ekstrom / Harris	SYDNOR, HA	373-3967	BERLIN, PC	AIR QUALITY ☐	75 Days / 75 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C7744 I001	Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		V10-004		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-008	TFVZ-~~09~~-000002 (B 6/7/10)	37-39 ft.	N/A	GOVERNMENT VEHICLE	
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G'jar
NO. OF CONTAINER(S)	3 Liners 1 Jar
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YW8	SOIL	6/7/10	1015	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B.E. Ekstrom B.E. Ekstrom	6/7/10 1100	RA Lee RA Lee	6-7-10 1100

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

0 C TB RA 2225201004 54

S10V001072 - A
73 - B
74 - C
75 - Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6002-518(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-019	PAGE 2 OF 2
COLLECTOR Ekstrom / HARRIS	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7744 I001	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS-09-008	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH 37-39ft	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 6.8.10 Group #: 20100454

Number of Samples: 1 set 5-5x VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	✓		
RSR provided?	✓		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present	✓		
Record cooler temperature in centigrade, as appropriate	0° ✓		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	✓		
• Sampling location or origin	✓		
• Container type, size, and number	✓		
• Analysis request is clear	✓		
• Signature of persons relinquishing and receiving samples	✓		
• Date and/or time of sample custody exchange	✓		
Verify that sample numbers on containers match the COC and/or RSA	✓		
Samples stored properly (e.g., refrigeration)	✓		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials RT Date 6.8.10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

RPP-47274, Rev. 0

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V10-004-020	PAGE 1 OF 2

COLLECTOR: Ekstrom / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC
SAMPLING LOCATION: C7744 I002	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 96-98ft	COA: N/A
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8P
AIR QUALITY: ☐
DATA TURNAROUND: 75 Days / 75 Days
METHOD OF SHIPMENT: GOVERNMENT VEHICLE

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4 liners 1 500mL jar
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B24YW9	SOIL	6/8/10	0985 ✓

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Donald Ekstrom Brad Ekstrom	6/8/10	Richard Ritsteelo	6.8.10 1030

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

OC TB 222S20100454
O ~~PA~~ S10V001087 A
1088 B
1089 C
1090 Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-020	PAGE 2 OF 2
COLLECTOR Electron / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7744 I002	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS-09-008	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH 96-98ft	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.

(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 – Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.60

Date Samples Received: 6.9.10 Group #: 20100454

Number of Samples: 1 set 5-5X VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	OK? (Y/N)	N/A	Comments
RSA/COC provided?	Y		
RSR provided?	Y		
Verify GKI is complete		✓	on file
Check that outer custody seal is intact, if present	Y		
Record cooler temperature in centigrade, as appropriate	10C		☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓		If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:			
• Client name and client sample number	✓		
• Date and time of sampling	X		
• Sampling location or origin	X		
• Container type, size, and number	X		
• Analysis request is clear	X		
• Signature of persons relinquishing and receiving samples	X		
• Date and/or time of sample custody exchange	X		
Verify that sample numbers on containers match the COC and/or RSA	X		
Samples stored properly (e.g., refrigeration)	Y		

Notify the PM immediately if any problems are noted. (A "No" answer requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials RS Date 6.9.10

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 0)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-021	PAGE 1 OF 2
COLLECTOR: Ekstrom / Harris	COMPANY CONTACT: SYDNOR, HA	TELEPHONE NO.: 373-3967	PROJECT COORDINATOR: BERLIN, PC	PRICE CODE: 8P	DATA TURNAROUND: 75 Days / 75 Days
SAMPLING LOCATION: C7744 I003	PROJECT DESIGNATION: Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO.: V10-004	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: ~~137 to 139 ft~~ 127 - 129 ft OPR 8-3-2010	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

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

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C
TYPE OF CONTAINER	Liners/G jar
NO. OF CONTAINER(S)	4 3 Liners 1 500ml jar
VOLUME	160g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B24YX0	SOIL	6/9/10	1000	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RE Ekstrom RE Ekstrom	6-9-10 1045	R Steele R Steele	6-9-10 1045

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

454 OPR 6-10-2010

2225201005~~45~~

OC TB
1
PK

210V001102 A
1103 B
1104 C
1105 Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-618(01/06)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V10-004-021	PAGE 2 OF 2
COLLECTOR Ekstrom / Harris	COMPANY CONTACT SYDNOR, HA	TELEPHONE NO. 373-3967	PROJECT COORDINATOR BERLIN, PC	PRICE CODE 8P AIR QUALITY ☐	DATA TURNAROUND 75 Days / 75 Days
SAMPLING LOCATION C7744 I003	PROJECT DESIGNATION Direct Push Samples for Area SE of S Tank Farm - Interim Barrier		SAF NO. V10-004		
ICE CHEST NO. TFVS-09-008	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH ~~137-139 ft~~ 127-129 ft	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

DPR 8-3-2016

SPECIAL INSTRUCTIONS

** Field personnel will put material from the shoe into a 500 ml G/P jar; the liners will be taped. All will be labeled and shipped to the laboratory. The laboratory will composite the liners and the material from the 500 ml jar (shoe).

** A "Quick Turn" sample will be analyzed for nitrate, pH, Tc-99 and conductivity on a 1:1 water digest. The nitrate and Tc-99 results are due 48 hours after receipt of the last sample from that push hole.

** The remainder of the composited material will be used for the remaining analyses and will be reported with the pH and conductivity results in the final analysis report. The final data package should be in Format VI with QA verification.
(1)ICPMS Tc-99_WE(TF); IC Anions - 9056_WE {Nitrate} pH (Soil) - 9045; Conductivity - 9050_WE; 6010M_ICP_AE (TF) {Niobium, Samarium, Boron, Bismuth, Lead, Neodymium, Tin, Sulfur, Sodium, Tantalum, Tellurium, Aluminum, Iron, Lanthanum, Palladium, Potassium, Rubidium, Barium, Chromium, Europium, Praseodymium, Rhenium, Copper, Molybdenum, Strontium, Tungsten, Beryllium, Cerium, Yttrium, Zinc, Zirconium, Manganese, Thorium, Titanium, Calcium, Lithium, Magnesium, Ruthenium, Silicon, Uranium, Phosphorus} 6020_METALS_ICPMS (TF); Mercury - 7471 - (CV) (TF); IC Anions - 9056; 300.7_AMMONIUM (TF); Sulfide - 9215; Total Cyanide - 9014 (TF); Percent Solids (TF); Percent Water (TF); Actinides ICPMS (TF); RADISO_ICPMS (TF) {Technetium-99, Tin-126} GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); C-14; CURIUM; H3 - TRITIUM; I129_SEP_GEA (TF); Isotopic Plutonium {Plutonium-239/240, Plutonium-238} Nickel-63 (TF); Selenium-79 (TF); Strontium-89,90 -- Sr-90 {Strontium-90} ALPHA_BETA_LSC_AE (TF); ALPHA_BETA_LSC_WE (TF);

A-6003-618(01/06)

This page intentionally left blank.

APPENDIX F

WASHINGTON STATE DEPARTMENT OF ECOLOGY DOCUMENTS

This page intentionally left blank.

ENERGYSOLUTIONS

May 18, 2010 FS-NW-LT-5358

State of Washington
Department of Ecology
Nuclear Waste Program
Hanford Project
3100 Port of Benton Boulevard
Richland, Washington 99354

Subject: Water Well Reports

To Whom It May Concern,

Attached are Water Well Report forms addressing decommissioning operations for seven geotechnical borings. The Water Well report forms have been completed with information from field operations (reference Notice of Intent Start Card SE06208 and Abandonment Start Card AE08107). These geotechnical borings are located on the Hanford Site, 200 West Area, S Tank Farm.

These geotechnical soil borings (listed in order in which they were driven) are designated as C7741, C7741A, C7739, C7743, C7737, C7738, and C7742. The odd numbered borings are conducted as exploratory/moisture probe installations and even numbered borings were driven for obtaining samples at predetermined depths. This information is noted on the associated Resource Protection Well Reports.

The fractional section system topographical location for these geotechnical borings is NW ¼ SE ¼, Section 12, Township 12N, Range 25EWM

If you have any questions, please contact me at 375-9587.

Very truly yours,

Martin G. Gardner, Manager
Remediation and Well Services

jmr

Attachments

CHPRC	- S. H. Worley	R3-60
WRPS	-H.A. Sydnor	E-6-31
Energy*Solutions*	- K. D. Reynolds	G2-02
	D. E. Skoglie	G2-02
	R. Z. Steffler	G2-02
	MGG File/LB	

2345 Stevens Drive, Suite 240 • Richland, WA 99354
509.371.8006 • Fax: 509.375.9500 • www.energysolutions.com

ENERGYSOLUTIONS

FS-NW-LT-5358

ATTACHMENTS

Resource Protection Well Reports

Consisting of 8 pages
including cover sheet

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7741

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection
☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

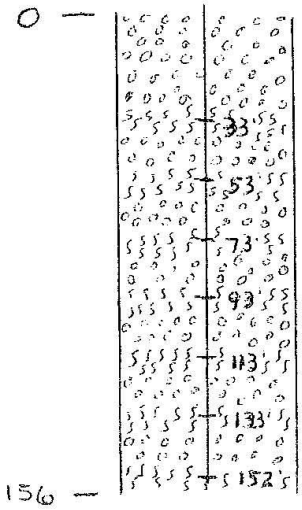
Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____ Long Deg _____ Min _____ Sec _____

Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 02/08/2010

Work/Decommission Completed Date 02/24/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 156 ft bgs. The drive point O.D. is ~3.0 inches diameter. Geophysical logging (Moisture and Gamma) was conducted to identify sample locations. The boring was decommissioned and seven moisture probes were installed at 152, 133, 113, 93, 73, 53 and 33 ft bgs. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.		S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).
	Surface protection and identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles s = sand/salt	

SCALE: 1"= 52 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06) Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7741A

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer/Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection
☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

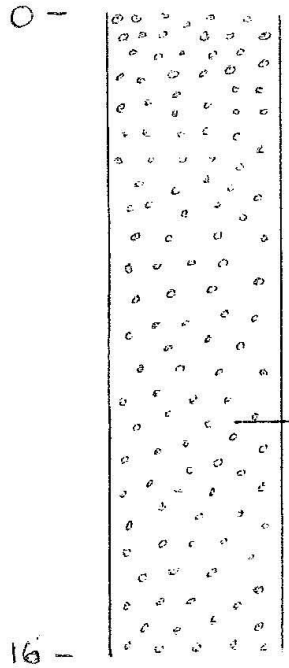
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 02/08/2010

Work/Decommission Completed Date 02/08/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 16 ft bgs. The drive point O.D. is ~3.0 inches diameter. 	bentonite crumbles	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).

SCALE: 1"= 4 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7739

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

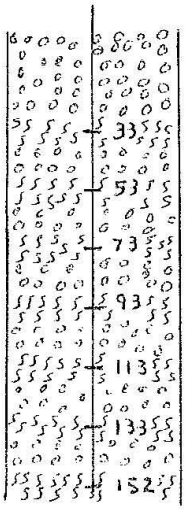
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 02/10/2010

Work/Decommission Completed Date 02/25/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 156 ft bgs. The drive point O.D. is ~3.0 inches diameter. Geophysical logging (Moisture and Gamma) was conducted to identify sample locations. The boring was decommissioned and seven moisture probes were installed at 152, 133, 113, 93, 73, 53 and 33 ft bgs. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Surface protection and identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles s = sand/salt	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 52 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7743

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____ Long Deg _____ Min _____ Sec _____

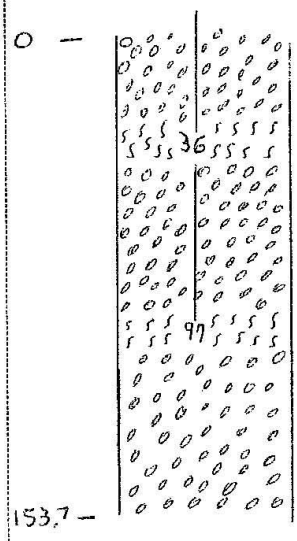
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 03/3/2010

Work/Decommission Completed Date 03/16/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 153.7 ft bgs. The drive point O.D. is ~3.0 inches diameter. Geophysical logging (Moisture and Gamma) was conducted to identify sample locations. The boring was decommissioned and two moisture probes were installed at 97 and 36, ft bgs. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Surface protection and identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles s = sand/salt	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 52 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7737

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

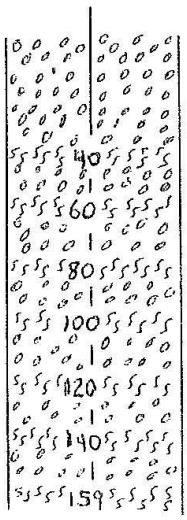
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 02/16/2010

Work/Decommission Completed Date 03/2/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 167.5 ft bgs. The drive point O.D. is ~3.0 inches diameter. Geophysical logging (Moisture and Gamma) was conducted to identify sample locations. The boring was decommissioned and seven moisture probes were installed at 159, 140, 120, 100, 80, 60 and 40 ft bgs. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.		S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).
0 –  167.5 –	Surface protection and identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles s = sand/salt	

SCALE: 1"= 56 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06) Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7738

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection
☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

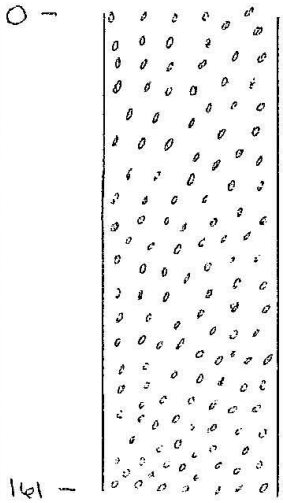
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 03/23/2010

Work/Decommission Completed Date 04/9/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 161 ft bgs. The drive point O.D. is ~3.0 inches diameter. Samples were obtained at 45 to 47, 62 to 64, 96 to 98, 127 to 129 and 159 to 161 ft bgs. The boring was decommissioned. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 54 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7742

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

Tax Parcel No. N/A

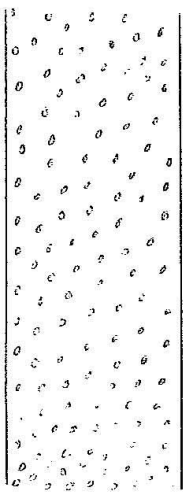
Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 03/30/2010

Work/Decommission Completed Date 05/5/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 137 ft bgs. The drive point O.D. is ~3.0 inches diameter. Samples were obtained at 40 to 42, 96 to 98, and 135 to 137 ft bgs. The boring was decommissioned. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).

0 –



137 –

SCALE: 1"= 45 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

ENERGYSOLUTIONS

June 29, 2010 FS-NW-LT-5370

State of Washington
Department of Ecology
Nuclear Waste Program
Hanford Project
3100 Port of Benton Boulevard
Richland, Washington 99354

Subject: Water Well Reports

To Whom It May Concern,

Attached are Water Well Report forms addressing decommissioning operations for five geotechnical borings. These Water Well Report forms have been completed with information from field operations (reference Notice of Intent Start Card SE06208 and Abandonment Start Card AE08107). These geotechnical borings are located on the Hanford Site, 200 West Area, S Tank Farm.

These geotechnical soil borings are designated as C7740, C7740A, C7744, C7745, and C7746. The odd numbered borings are conducted as exploratory/moisture probes installations as identified on the Resource Protection Well Reports and even numbered borings are driven for obtaining samples at predetermined depths also noted on the Resource Protection Well Reports.

The fractional section system topographical location for these geotechnical borings is NW ¼ SE ¼, Section 12, Township 12N, Range 25EWM

If you have any questions, please contact me at 375-9587.

Very truly yours,

Martin G. Gardner, Manager
Remediation and Well Services

jmr

Attachments

CHPRC	- S. H. Worley	R3-60
WRPS	-H.A. Sydnor	E-6-31
Energy*Solutions*	- K. D. Reynolds	G2-02
	D. E. Skoglie	G2-02
	R. Z. Steffler	G2-02
	MGG File/LB	

2345 Stevens Drive, Suite 240 • Richland, WA 99354
509.372.8006 • Fax: 509.375.9500 • www.energysolutions.com

ENERGYSOLUTIONS

FS-NW-LT-5370

ATTACHMENTS

Resource Protection Well Reports

Consisting of 6 pages
including cover sheet

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7740

WELL CONSTRUCTION CERTIFICATION. I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

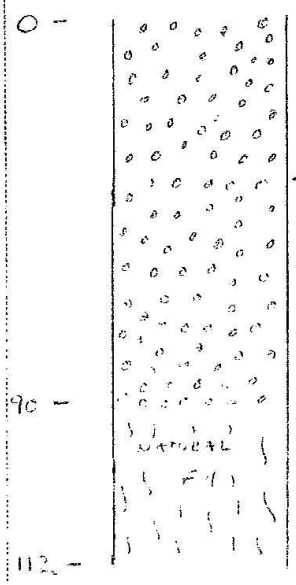
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 05/06/2010

Work/Decommission Completed Date 05/18/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 112 ft bgs. Tubing broke at 6 ft bgs and was fished. The drive point O.D. is ~3.0 inches diameter. Samples were obtained at 40 to 42 and 96 to 98 ft bgs. Boring was decommissioned from 90 ft bgs to surface. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles Sample intervals	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 37 ft PAGE 1 OF 1

ECY 050-12 (Rev 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7740A

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection
☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

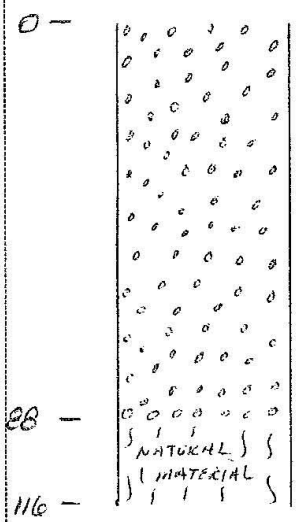
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 05/18/2010

Work/Decommission Completed Date 05/23/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 116 ft bgs. The drive point O.D. is ~3.0 inches diameter. Inner-tubing break retrieved. Redrive tubing (2 1/2) to 88 ft bgs and decommission to surface. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 37 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7744

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E. Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

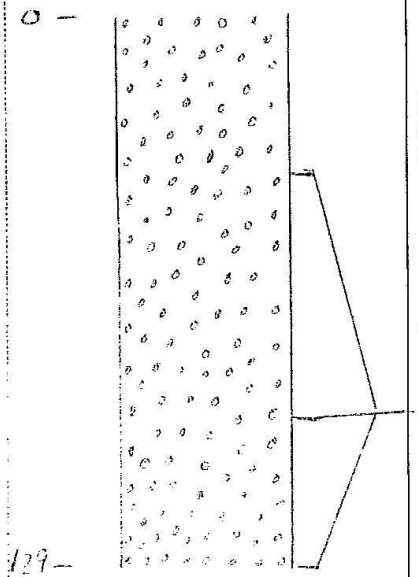
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 06/03/2010

Work/Decommission Completed Date 06/10/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 129 ft bgs. The drive point O.D. is ~3.0 inches diameter. Samples were obtained at 37 to 39, 96 to 98 and 127 to 129 ft bgs. Boring was decommissioned to surface. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles Sample intervals	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 37 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7745

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David E Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

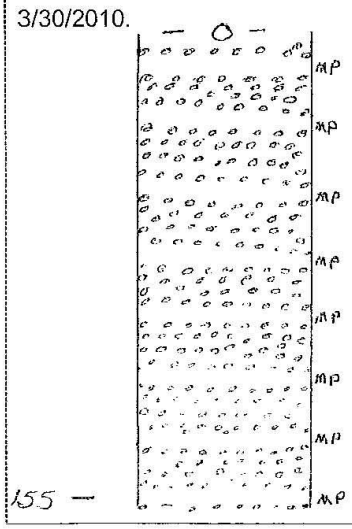
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 03/4/2010

Work/Decommission Completed Date 06/06/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.5 inch O.D.) was driven to a depth of 155 ft bgs. The drive point O.D. is ~3.0 inches diameter. Geophysical logging (Moisture and Gamma) was conducted to identify sample locations. The boring was decommissioned and eight moisture probes (HGI) were completed at 153, 130.5, 110.5, 90.6, 70.6, 50.55, 30.55 and 10.4 ft bgs using sand/diatomite/water. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010. 	Surface protection and identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).

SCALE: 1"= 50 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE08107

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction
☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: SE06208

Consulting Firm Energy Solutions

Unique Ecology Well IDTag No. C7746

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Skoglie, David

Driller/Engineer /Trainee Signature David Skoglie

Driller or Trainee License No. 1580

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☐ Resource Protection
☒ Geotech Soil Boring

Property Owner U.S. Department of Energy

Site Address 825 Jadwin Ave.

City Richland County Benton

Location NW1/4-1/4 SE1/4 Sec 12 Twn 12 R 25E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____ Long Deg ____ Min ____ Sec ____

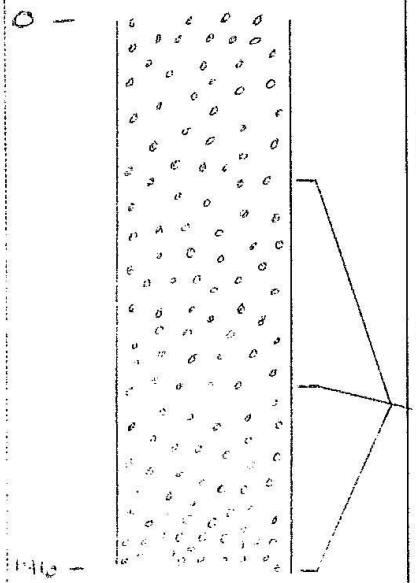
Tax Parcel No. N/A

Cased or Uncased Diameter 3.0 inch Static Level N/A

Work/Decommission Start Date 05/24/2010

Work/Decommission Completed Date 06/03/2010

Construction Design	Well Data	Formation Description
The direct push tubing (2.625 inch O.D.) was driven to a depth of 146 ft bgs. The drive point O.D. is ~3.0 inches diameter. Samples were obtained at 44 to 46, 94 to 96 and 144 to 146 ft bgs. Boring was decommissioned to surface. Reference Variance Request for Direct Push Bore-holes dated 3/30/2010.	Identification marker (boring number and date decommissioned) were set in place. o = bentonite crumbles Sample intervals	S Tank Farm, 200 West Area, Hanford Site, Benton County Formation was sand with gravel layers (noted during driving).



SCALE: 1"= 40 ft PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

APPENDIX G

SAFETY DOCUMENTATION

This page intentionally left blank.

ENERGYSOLUTIONS	**ACTIVITY HAZARD ANALYSIS** **S-FARM DIRECT PUSH HYDRAULIC HAMMER UNIT OPERATIONS**	AHA-09-008- REV. 0 WRPS

Prepared by:	Robert Zane	Signature:		Date:	1/20/10
Supervisor:	Dave Skoglie	Signature:	David E. Skoglie	Date:	1/20/10
Reviewed by:	Kent Reynolds	Signature:		Date:	1/20/10
Reviewed by:	Mike Powers	Signature:		Date:	

EVERY WORKER MUST UNDERSTAND THE HAZARDS ASSOCIATED WITH THIS ACTIVITY AND THE CORRECTIVE MEASURES TO BE TAKEN. IF YOU DO NOT UNDERSTAND ANY PORTION OF THIS AHA OR HAVE ENCOUNTERED CONDITIONS THAT HAVE NOT BEEN ADDRESSED ADEQUATELY, STOP AND DO NOT PROCEED UNTIL YOU HAVE CONTACTED YOUR SUPERVISOR.

Scope/Description: Boreholes to be pushed as designated in ECN #726971. Depth of boreholes will be 145' below ground surface or refusal. Perform soil (Vadose zone) investigation at 5 designated locations between S and SX farms using direct push equipment. The work scope includes both geophysical logging and soil sampling. Work be performed with tank farm work package "TFC-WO-09-4897."

Specific Work Location(s): Hanford, 200 West Area, S-Farm, multiple locations.

Minimum PPE Requirements: Safety glasses with side-shields and protective footwear shall be worn in all work areas or as indicated in the body of this AHA.

Activity Tasks:

1. Push casing to desired depth or refusal.
2. Perform geophysical logging for subsurface characterization.
3. Perform sampling using dual string method.
4. Land multi-sensor resistivity probes.
5. Decommission the boreholes and provide secure surface seal.

Topic	Yes	No	Topic	Yes	No
Radiation Work Area	X		Respiratory Hazards		X
Hazardous Waste Operations	X		Noise Exposure	X	
Confined Space		X	Temperature Extremes	X	
Hot Work	X		Hoisting & Rigging	X	
Roof Work		X	Repetitive Motion	X	
Fall Hazard (≥ 6 ft)		X	Awkward Positions	X	
Excavation/Trenching	X		Same Position(s)	X	
Ladders and/or Scaffolding	X		Biological/Vermin	X	
Aerial Lifts		X	Insects/Varmints	X	
Heavy Equipment	X		Signs and Barricades	X	
Lock and Tag	X		Utility Survey required	X	
Site/Vehicle Traffic	X		Explosive Operations		X
Electrical Hazards	X		Asbestos Work		X
Lead Work		X	Other Chemical Hazards	X	
Hazardous Materials/MSDS	X				

SPECIFIC HAZARD AND SAFE WORK REQUIRMENTS

Known and/or potential hazards, including any marked "yes" above, are further evaluated, and specific measures are identified on subsequent pages. This discussion must include identification of the work activity, the specific hazards present, and the safe work requirements/controls (including a hazards assessment/modification for PPE) to be used to alleviate/control the hazard(s).

Work Activity	Hazards Present	Required Safety Measures/PPE
General Site Activities	Fall hazards – slip/trip/fall	Walking and working surfaces: • Be aware of cobbles and irregular walking surfaces when traversing the site. • Keep work areas picked up of tools and equipment. • Clean up spills or mark the area with safety barricades until the spill can be cleaned up. Ladders: • Use ANSI approved ladders rated for heavy-duty or extra-heavy-duty use (Type I or Type IA). • Inspect ladder prior for defects prior to use. • Verify that periodic inspection was performed within last 12 months by competent person.
	Chemical Use	• Maintain an MSDS at the jobsite for all stored/used chemicals. • Personnel shall review the MSDS prior to working with any chemicals. • Personnel shall follow controls specified in MSDS or contact site safety representative for additional guidance.
	Spills	• Plastic sheeting and felt shall be placed beneath equipment that has the potential for leakage of fluids. • An adequate inventory of spill cleanup equipment and materials shall be maintained on site. The spill kit should contain shovels (or be available on location), absorbents, containers, plastic bags, and wipes. • Spills shall be reported to the customer and management immediately.
	Equipment Use	Motorized Equipment: • Shall be maintained as required by the manufacturer. • Shall be inspected daily and documented on appropriate forms (e.g. Field Activity Report, Work Package, Equipment Inspection Forms, etc.). • Equipment needing repair shall be removed from service, unless the supervisor determines it is safe to operate. Forklifts/Rigging: • Forklifts shall be inspected prior to use each shift and the results documented on appropriate form. (e.g. Field Activity Report, Work Package, Equipment Inspection Forms, etc.). • Forklifts and "Below the Hook Lifting Devices" used onsite shall meet the requirements of DOE-RL-92-36 "Hoisting and Rigging Manual" (HRSM).

	Remote Work Area	• Familiarize personnel with the location of their work site so that they would be able to direct emergency responders to it. • If emergency responders are called, send someone to the entry intersections of the site access road and main roadway to direct responders to the site. • A cell phone must be onsite for contacting emergency responders. • Employees who could reasonably anticipate coming in contact with blood or other potentially infectious materials shall meet training and medical requirements of TFC-ESHQ-S-STD-24, REV A-4 (Bloodborne Pathogen Exposure Control Standard). • Maintain a fully stocked first aid kit in accordance with TFC-ESHQ-S-STD-04. • At least two personnel at the job site shall have First Aid/CPR training.
	Emergencies	Fire: • Maintain at least two (2) ABC 20 pound fire extinguishers on site and place within work location for easy access. • Employees should attempt to extinguish incipient stage fires only if they have been trained in the use of fire extinguishers. • Call HFD at **373-3800**. • Evacuate upwind to a safe distance and account for all site personnel and visitors. • The *Hanford Fire Dept. must be notified of all fires even if they have been extinguished.* Injuries: • For minor injuries, transport injured person to the 200 West Medical Aid Station, 2719-WB Bldg or an in town medical facility. • For serious or life threatening injuries, call **373-3800** and administer first aid as indicated by the nature of the injury until emergency medical services arrive. • All injuries are to be immediately reported to the field supervisor and site safety representative. Emergency Evacuation: • All personnel shall respond to Emergency Area alarms by safely securing operations, exiting work area, and taking appropriate emergency response actions, per HGET and radiological training.
	Radiological Hazards	• All employees shall comply with the requirements defined in the client's radiological policies and procedure and the radiological work permit (RWP).

	Site Control Measures – Unplanned Entry	Signs/Barricades • The work area shall be posted "Authorized Personnel Only" and controlled to prevent inadvertent entry by non-project personnel. If unathorized personnel enter the controlled area, stop work until they have been escorted out. Training Requirements: • All support, supervisory personnel and visitors entering the site shall read and acknowledge this site safety plan at their initial entry as well as comply with all tank farm entry requirements, including training. • Any revision of this safety plan requires re-reading and re-acknowledgement of the plan by all personnel.
	Inadequate Lighting	• If work is performed during non-daylight hours, set-up lighting to provide a minimum illumination of 5-foot candles in work area.
	Temperature Extremes	Heat Stress: • Brief personnel on symptom recognition and methods of prevention. Use weekly safety meeting to document personnel have been briefed. • Provide drinking water and encourage consumption. • Confer with project safety representative to determine applicable column to follow on work/rest regimen table from TFC-ESHQ-S_IH-C-07. • Monitor WBGT temperatures using HMS or jobsite monitoring. • Provide shade and/or evaporative cooling (fan mounted misters) as needed in the work area. • Provide cool down area for breaks. Cold Stress: • Brief personnel on symptom recognition and methods of prevention. Use weekly safety meeting to document personnel have been briefed. • Provide drinking water and encourage consumption. • Use portable heaters as needed in the work area. • Wear winter gear. • Allow employees to take warming breaks as needed.
	Adverse Weather Conditions	• Contact the weather station at 373-2716 for information about adverse weather conditions. • Upon receiving the lightning warning within 30 miles notice or observation of lightning in the area stop all work with elevated booms. • Wear googles when wind speeds are great enough to generate blowing dust

	Pressure Washing	• Wear face shield in addition to standard PPE.
	Transporting Equipment/Materials	• Secure from movement in all directions.
	Sanitation at work location	• Do not eat, drink, smoke, chew, or apply cosmetics in the work area unless specifically approved by the health and safety and radcon representatives. • Provide wash water and wash hands prior to consuming food or beverages. • Apprise work crew of the nearest toilet facility.
	Biological	• Watch for spiders when reaching into enclosed spaces. • Be careful when handling equipment that has rested on the ground. • If snakes are encountered, do not attempt to handle or molest them. Monitor the snake's whereabouts until it is safely away from the work site. If needed, call the Pest Control (376-7378) to have the snake removed. • Watch for nesting bees and report to pest control. Employees with allergies should notify the supervisor. • Report all bites and stings.
	Underground Utilities	• Obtain an excavation permit prior to conducting push activities. U-Dig (800-424-5555) shall be notified 48 hours prior to excavation to allow time for response by utility companies.
	Overhead Power Lines	• Vehicle boom/mast must be a minimum of 10 ft. away from power lines. • When working within a horizontal distance 20 feet of the center line of the nearest high voltage line, contact Electrical Utilities 372-1660 or 373-7995 for assistance at least 48 hours before the scheduled work. • Avoid moving equipment underneath overhead electric lines or near power poles, when feasible.
	Hazardous Energy	• Prior to performing maintenance that removes guards or exposes the worker to a hazardous energy, secure the source then lock and tag.
	Hot Work	• Obtain a hot work permit from tank farms prior to performing hot work.
	Sharp Edges	• Wear leather gloves when using tools or handling equipment.
	Compressed Gas	• Secure nitrogen cylinder in cart with cap on, when moving. • Store out of direct sunlight.
	Portable Generator	• Ensure that generator is listed by an NRTL (nationally recognized testing laboratory). • Operate in accordance with manufacturer's instructions. • Test GFCI circuit before use.
Moving the tractor and equipment to the designated probe placement location.	Mobile Equipment	• Employees shall perform 360 degree walk-around to ensure that no obstacles are in the path of the vehicle. • When mobilizing to work location use

		appropriate tie-downs during transport. • Use two spotters when moving equipment inside the tank farm, when in confined areas, or near objects that are not readily visible. • Due to top-heavy design of the HHU, be cautious when on hills and avoid side-hilling. • Only qualified personnel shall operate equipment (tractor, forklifts, etc.). • Be aware of moving equipment and always make contact with operator before approaching operating equipment. • Forklift operators shall ensure that the load is secured, stable and does not exceed the rated capacity. • Sound horn whenever blind spots exist. • Be familiar with the locations of overhead hazards. • Wear hard hats and protective toed shoes when working around forklift, tractor, or elevated objects that could fall.
	Equipment Noise	• Personnel shall wear hearing protection, with a minimum NRR of 18, when driving the tractor.
	Falling off tractor	• Employees shall use a three point contact when ascending/descending the tractor.
	Pinch Points	• Wear leather or equivalent work gloves when handling equipment. • Be aware of where you place your hands and feet. • Ensure that equipment with rotating type pinch points are guarded while in operation.
	Unstable Surface	• When setting the outriggers (if equipped) up the operator shall ensure that employees are staged away from the tractor. • Cribbing shall be used whenever there is a potential for the surface to give way. Size of cribbing shall be determined by soil density, weight of vehicle, etc. (Consult the manufacturer's recommendations, work package requirements, tank farm engineering, etc.).
Driving Casing/Sampling	Moving Equipment	• Only trained personnel shall operate the drive unit. • Personnel working in close proximity to the hydraulic hammer unit shall be briefed on the moving parts and hazards. • Personnel shall make contact with the driller before approaching the drive unit. • Wear hard hat within 15 ft of the HHU when it is in operation.

	Pipe Wrenches	• When pulling/pushing, keep the back as straight as possible. • Use a steady pull/push during removal/installing pipe. • Ensure that wrenches are in good working condition (clean, jaws not worn, etc.) • Only approved equipment may be utilized to make up and break out push tubing. Use of a "cheater" bar is not allowed
	Awkward Posture/Same Position	• Take breaks as needed to avoid muscle strain/fatigue. • When handling tubing do not lift and twist body. • Avoid prolonged still positions.
	Equipment Noise (HHU)	• Post the work area with warning signs that state "hearing protection required when equipment is operating". • Wear hearing protection with a minimum NRR of 18 when the motor(s) on the HHU or portable generators are running. Driving Casing: • Wear ear plugs with a minimum NRR of 30 and ear muffs. • When driving utilizing the HHU, set up a boundary 50 ft. from the drill head. • When driving utilizing the HHU-XL, set up a boundary 100 ft. from the drill head.
	Air Contaminants	• Monitoring to be performed in accordance with "S-Farm IH Monitoring Plan", latest revision.
	Unexpected Odor	• Move up wind and contact safety/industrial hygiene and radiological personnel to evaluate.
	Perched Water	• Wear 4 mil nitrile gloves in addition to standard PPE when sampling in perched water or saturated zones.
Decommissioning of the borehole	Bentonite/Silica Sand Dust	• Wash hands and face prior to eating, drinking smoking, applying cosmetics, or using the restroom. • A N100 (particulate type) dust mask may be worn for comfort.
	Mixing and Pouring Cement	• Avoid creating dust when pouring dry material into bucket and when mixing. • Wear safety glasses and impervious gloves. If there is a splash potential, wear additional impervious PPE to prevent skin contact (such as face shield, boots, etc.). • Promptly wash skin that comes in contact with cement powder or wet cement.

Monitoring Requirements:
Radiological and chemical monitoring will be conducted and controlled by WRPS personnel; results will be available from the assigned Radiological Control Technician/Industrial Hygiene Technician.

HANFORD SITE EMERGENCY SERVICES

Patrol Operations Center - POC (any type of phone) **373-3800**
(contact the POC immediately for fire, injuries, or any type of accident)

Patrol Operations Center (landline only) **911**

EMERGENCY MEDICAL SERVICES

Name	Address	Phone #
Hanford, 200 West	2719 WB	373-2714
Advanced Med	1979 Snyder	376-6981/376-3333
Kadlec Medical Center	888 Swift Blvd	946-4611

ENERGY SOLUTIONS MANAGEMENT

Name	Office Phone #	Cell Phone #
Field Team Lead / Dave Skoglie	375-9591	308-0136
Safety Representative / Rob Zane	375-9585	308-6404
Technical Lead / Kent Reynolds	375-9598	308-3000

TANK FARMS CONTACTS

Name	Office Phone #	Cell Phone #
Tank Farms Shift Manager	372-2806 / 373-3475	
WFO/BED	373-2689	
FWS / Bill Clark		539-0949
Harold Sydnor	373-3967	438-1307
Mike Powers (Safety)	376-5597	308-7386

ENERGYSOLUTIONS ACTIVITY HAZARD ANALYSIS ACKNOWLEDGEMENT

AHA-09-008-Rev. 0 WRPS

HYDRAULIC HAMMER UNIT

I have read, understand and agree to abide by the provisions detailed in this Activity Hazard Analysis. I understand that failure to comply with the provisions may lead to disciplinary action and my removal from this job activity.

PRINT NAME	SIGNATURE	EMPLOYEE NO.	DATE

INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL

Part I: Background Information

Title: 2010 Completion Report for the 241-S/SX Tank Farm Direct Push Barrier Characterization

Publish to OSTI? ☐ Yes ☑ No

Information Category:
☐ Abstract ☐ Journal Article ☐ Summary
☐ Internet ☐ Visual Aid ☐ Software
☐ Full Paper ☑ Report ☐ Other

Trademark/Copyright "Right to Use" Information or Permission Documentation	Yes	NA
	☐	☑

Document Number: RPP-47274 Revision 0 Date: August 2010

Author: Tabor, Cindy L

Part II: External/Public Presentation Information

Conference Name:

Sponsoring Organization(s): WRPS

Date of Conference: Conference Location:

Will Material be Handed Out? ☐ Yes ☑ No Will Information be Published? ☐ Yes ☑ No *(If Yes, attach copy of Conference format instructions/guidance.)*

Part III: WRPS Document Originator Checklist

Description	*Yes*	*N/A*	*Print/Sign/Date*
Information Product meets requirements in TFC-BSM-AD-C-01?	☐	☑	
Document Release Criteria in TFC-ENG-DESIGN-C-25 completed? (Attach checklist)	☐	☑	
If product contains pictures, safety review completed?	☑	☐	Roberts, Sheryl K Approved - IDMS data file att.

Part IV: WRPS Internal Review

Function	*Organization*	*Date*	*Print Name/Signature/Date*
Subject Matter Expert	WRPS	04/15/2020	Tabor, Cindy L Approved - IDMS data file att.
Responsible Manager	WRPS	04/09/2020	Rutland, Paul L Approved - IDMS data file att.
Other:			

Part V: IRM Clearance Services Review

Description	*Yes*	*No*	*Print Name/Signature*
Document Contains Classified Information?	☐	☒	If Answer is "Yes," ADC Approval Required Print Name/Signature/Date
Document Contains Information Restricted by DOE Operational Security Guidelines?	☐	☒	Reviewer Signature: Print Name/Signature/Date
Document is Subject to Release Restrictions? *If the answer is "Yes," please mark category at right and describe limitation or responsible organization below:*	☐	☒	Document contains: ☐ Applied Technology ☐ Protected CRADA ☐ Personal/Private ☐ Export Controlled ☐ Proprietary ☐ Procurement – Sensitive ☐ Patentable Info. ☐ OUO ☐ Predecisional Info. ☐ UCNI ☐ Restricted by Operational Security Guidelines ☐ Other (Specify)
Additional Comments from Information Clearance Specialist Review?	☐	☒	Information Clearance Specialist Approval APPROVED By Sarah Harrison at 6:29 am, Apr 21, 2020 Print Name/Signature/Date

When IRM Clearance Review is Complete – Return to WRPS Originator for Final Signature Routing (Part VI)

INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL

Part VI: Final Review and Approvals

Description	*Approved for Release*		*Print Name/Signature*
	Yes	*N/A*	
WRPS External Affairs	☒	☐	Mc Cune, Hal C Approved - IDMS data file att.
WRPS Office of Chief Counsel	☒	☐	Peters, Amber D Approved - IDMS data file att.
DOE – ORP Public Affairs/Communications	☒	☐	Levardi, Yvonne M / Tyree, Geoff T Approved - IDMS data file att.
Other: ORP OCC	☒	☐	Zelen, Benjamin J Approved - IDMS data file att.
Other: ORP SME	☒	☐	Blackwell, Becky Approved - IDMS data file att.

Comments Required for WRPS-Indicate Purpose of Document:

This report details the installation of vadose zone monitoring equipment.

APPROVED
By Sarah Harrison at 6:30 am, Apr 21, 2020

Approved for Public Release; Further Dissemination Unlimited

Information Release Station

Was/Is Information Product Approved for Release? ☒ Yes ☐ No

If Yes, what is the Level of Releaser? ☑ Public/Unrestricted ☐ Other (Specify) _____

Date Information Product Stamped/Marked for Release: 04/21/2020

Was/Is Information Product Transferred to OSTI? ☐ Yes ☒ No

Forward Copies of Completed Form to WRPS Originator

```
- <workflow name="(SEH) Expedite - RPP-47274 Rev0" id="260314829">
  - <task name="Clearance Process" id="0" date-initiated="20200409T0837"
      performer="Sarah E Harrison" performer-id="252341659"
      username="h5635746">
      <comments>Due Monday April 20th 2020 - COB Please expedite the
        approval of the 2010 Completion Report for the 241-S/SX Tank Farm
        Direct Push Barrier Characterization submitted by Cindy Tabor for public
        release to Ecology. Thank you, Sarah Harrison Information
        Clearance</comments>
    </task>
    <task name="Add XML" id="1" date-done="20200409T0837" />
    <task name="Expedite - Manager Approval" id="6" date-due="20200413T0837"
      date-done="20200409T0846" performer="Paul L Rutland" performer-
      id="140633218" username="h4494439" disposition="Approve"
      authentication="true" />
    <task name="Expedite - Document Reviewer2" id="17" date-
      due="20200413T0846" date-done="20200409T0905" performer="Hal C Mc
      Cune" performer-id="226350486" username="h7687509" disposition="Public
      Release" authentication="true" />
    <task name="Expedite - Document Reviewer1" id="16" date-
      due="20200413T0846" date-done="20200409T1014" performer="Sheryl K
      Roberts" performer-id="171787680" username="h0081997" disposition="Public
      Release" authentication="true" />
    <task name="Expedite - Document Reviewer4" id="19" date-
      due="20200413T0846" date-done="20200409T1222" performer="Rebecca I
      Blackwell" performer-id="242759597" username="h9138590" disposition="Public
      Release" authentication="true" />
    <task name="Expedite - Document Reviewer3" id="18" date-
      due="20200413T0846" date-done="20200413T1031" performer="Amber D
      Peters" performer-id="210402196" username="h3022486" disposition="Public
      Release" authentication="true" />
    <task name="Doc Owner Clearance Review" id="13" date-due="20200414T1031"
      date-done="20200415T0707" performer="Cynthia L Tabor" performer-
      id="173738849" username="h6436378" disposition="Send On"
      authentication="true" />
    <task name="Milestone 1" id="24" date-done="20200415T0707" />
    <task name="ORP Document Reviewer3" id="59" date-due="20200417T0707"
      date-done="20200415T0843" performer="Benjamin J Zelen" performer-
      id="141965018" username="h1214744" disposition="Public Release"
      authentication="true" />
    <task name="ORP Document Reviewer1" id="57" date-due="20200417T0707"
      date-done="20200417T1104" performer="Geoff T Tyree" performer-
      id="6158846" username="h0068565" disposition="Public Release"
      authentication="true" />
  - <task name="ORP Document Reviewer2" id="58" date-due="20200417T0707"
      date-done="20200420T1102" performer="Yvonne M Levardi" performer-
      id="185346745" username="h7131303" disposition="Public Release"
      authentication="true">
      <comments>no comments</comments>
    </task>
    <task name="Doc Owner Reviews ORP Comments" id="61" date-
      due="20200421T1102" date-done="20200420T1243" performer="Cynthia L
      Tabor" performer-id="173738849" username="h6436378" disposition="Send On"
      authentication="true" />
```

```
  <task name="Milestone 2" id="62" date-done="20200420T1243" />
  <task name="Verify Doc Consistency" id="4" date-due="20200421T1243" date-
    done="20200421T0555" performer="Sarah E Harrison" performer-
    id="252341659" username="h5635746" disposition="Cleared"
    authentication="true" />
</workflow>
```