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MARTIN S. BURCK ASSOCIATES, INC.

200 North Wasco Court, Hood River, OR 97031
Phone 541.387.4422 800.655.8505 Fax 541.387.4813

MSBA

Geologic and Environmental Consulting Services

State of Washington Department of Ecology
Toxics Cleanup Program - Attention: Gail Jaskar
Post Office Box 47600
Olympia, Washington 98504-7600

June 9, 2011

Transmitted via USPS and email to: gjas461@ecy.wa.gov

Subject: **Underground Storage Tank Site Assessment and Closure Report**
US Department of Energy
200 West Hanford Nuclear Reservation
Site # 12763 Tank ID # 2721Z-2

Dear Ms. Jaskar:

Martin S. Burck Associates, Inc. (MSBA) has prepared the enclosed report documenting an underground storage tank decommissioning and Site Assessment performed on behalf of The United States Department of Energy regarding the site referenced above. MSBA performed this Site Assessment in general accordance with Chapter 173-360 of the Washington Administrative Code and with the Washington State Department of Ecology guidance document titled ***Guidance for Site Checks and Site Assessments for Underground Storage Tanks***, revised in April 2003. Based on this assessment, MSBA has determined that the site is in compliance with applicable regulations and appears to meet the criteria for closure. Please contact me at your earliest possible convenience, at (541) 387-4422, if you have any questions regarding this report.

Sincerely,

Martin S. Burck Associates, Inc.

Josh Owen
Project Manager, WA Site Assessor

Enclosures: Report

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UNDERGROUND STORAGE TANK SITE ASSESSMENT AND CLOSURE REPORT

US Department of Energy
200 West Hanford Nuclear Reservation
Site # 12763 Tank ID # 2721Z

1.0 INTRODUCTION

Martin S. Burck Associates (MSBA) conducted a Site Assessment for an underground storage tank (UST) decommissioning by removal on behalf of The United States Department of Energy (US DOE). The site is located on the Hanford Nuclear Reservation (Hanford), located north of Richland, Washington, near the Plutonium Finishing Plant (PFP) within area 200 West. The general location of the site is illustrated on Figure 1. The general site features and location of the former UST are illustrated on Figure 2.

This report is intended to satisfy the UST decommissioning and Site Assessment requirements under Chapter 173-360 of the Washington Administrative Code (WAC) in general accordance with the Washington State Department of Ecology (Ecology) guidance document titled ***Guidance for Site Checks and Site Assessments for Underground Storage Tanks*** (GSCSAUST), revised April 2003.

1.1 Site Background and Hydrogeological and Soil Characteristics

The Diesel UST was used to supply three diesel powered standby generators located nearby in building 2721-Z. The UST was installed in 1998, following the decommissioning of two former USTs within the same tank cavity, which were installed in the early 1970's. The former UST decommissioning was documented in a report titled ***Underground Storage Tank Site Assessment*** (1998) prepared by Alexander H. Kock of Blue Sage Environmental, Inc., in Kennewick, Washington. The previous assessment determined that petroleum was not released from the former USTs (1998). Based on the previous assessment report, it appears the original product piping leading to the generator in building 2721-Z was left in place and re-attached to the new UST. A copy of the previous site assessment report has been included as Appendix A. The following excerpt from the previous assessment report describes the hydrogeoloical and soil characteristics at the site:

"The Hanford Site is in the Pasco Basin, a structural depression formed in the underlying basalt bedrock. The Columbia River Basalt Group is a sequence of continental flood basalts covering more than 160,000 km^2. Overlying the basalt within the Pasco Basin are fluvial and lacustrine sediments of the Ringold Formation. The ancestral Columbia River and its tributaries flowed into the Pasco Basin, depositing coarse-grained sediments in the migrating river channels and fine-grained sediments (silt and clay) in the overbank flood deposits. On at least two occasions, these river channels were blocked, forming a lake in the Pasco Basin

and depositing extensive layers of fine-grained sediments within the Ringold formation. The uppermost sedimentary unit covering much of the Hanford Site is the Hanford formation (informal), a complex series of coarse- and fine-grained sediments. Capping the Hanford formation in many areas is a thin veneer of eolian sands and/or recent fluvial deposits.

The unconfined aquifer is generally located in the unconsilidated to semiconsilidated Ringold and Hanford formations that overlie the basalt bedrock. In some areas, low permeability mud layers form aquitards and create local confine hydraulic conditions in the underlying sediments. However, these aquitards are not continuous across the Hanford site and the entire suprabasalt aquifer is connected on a site wide scale.

The suprabasalt sediments underlying the Hanford Site read a maximum thickness of ~190 m near the center of the site, but pinch out along the flanks of the basalt ridges. Depth to water table ranges from <0.3 m near the Columbia River to >106 m near the 200 Areas. Perched water-table conditions have been encountered in sediments above the unconfined aquifer system in the 200 West Area and in irrigated offsite areas east of the Columbia River."

2.0 DECOMMISSIONING AND SOIL SAMPLING ACTIVITIES

2.1 Pre-Decommissioning Site Inspection

On April 8, 2011, MSBA conducted a site inspection in general accordance with Section 3.1 of the GSCSAUST. At this time, MSBA was informed of the site specific requirements that all samples be collected by a CH2MHill Plateau Remediation Company (CH2MHill) sampling team under the direction of the site assessor, MSBA, due to potential for radioactive contamination at the site. MSBA inspected the area for surface indications of a release, which were not observed. Inventory records did not exist or were not available for review. The only known UST system repair was to the overfill protection component which did not result in any release(s) of petroleum as reported by Eastern Oregon Petroleum who effected the repair. The tank volume was reported to be 2,500 gallons. The UST contained approximately 1,500 gallons of diesel prior to the decommissioning activities. MSBA determined that the area around the former tank cavity appeared to be clear of utilities that could potentially interfere with the decommissioning process. CH2MHill also prepared a Work Instruction document describing the removal of potential above ground interferences including the removal of jersey barriers, concrete and wooden walkways, and air conditioning units, etc... The Work Instruction document has been included in Appendix B.

2.2 UST System Information

The Xerxes Corporation UST was installed in October 1998. MSBA was not able to ascertain who installed the UST. The top of the tank was approximately 3.5 feet below surface grade (bsg). The bottom of the tank was approximately 9.5 feet bsg. The UST measured 6 feet in diameter and 13 feet in length with an approximate capacity of 2,500 gallons, consistent with the previously reported volume. The UST was installed within a tank cavity braced with a wooden shoring on all sidewalls measuring approximately 20 feet (east-west) by 12 feet (north-south). The tank was installed with pea gravel bedding and backfill from approximately 3 to 11 feet bsg. A controlled density fill (CDF) material was placed over the UST and pea gravel from 1 to 3 feet bsg, with a 1 foot concrete slab above the CDF to surface grade. The UST construction was double walled fiberglass and included containment overfill protection and double walled product lines with leak detection sensors. The UST system included a concrete pump vault above the west end of the former UST cavity. Three small pumps were present in the vault for transferring product to secondary tanks located in building 2721-Z. Each tank contained approximately 25 gallons of diesel to supply fuel directly to each generator also located in building 2721-Z. Overfill protection was achieved with a steel containment area located above the center of the tank within the fill tube, product line, return line and product sensors. The product and return lines were located in a 12 inch diameter fiberglass secondary enclosure surrounded by 2 inches of foam. Photographs illustrating the containment areas and general vicinity of the UST are included in the Work Instruction document presented in Appendix B.

2.3 UST System Decommissioning Activities

On May 1, 2011, the UST was removed from the former cavity and inspected, it appeared to be in excellent condition, no holes or signs of leakage were observed. Pea gravel backfill material directly beneath the UST also appeared free of odor and staining. Photographs depicting the UST and former UST cavity are included in Appendix B as (2011 05 02) Additional Photographs.

On May 2, 2011, the product piping was exposed and an inspection was conducted with no evidence of leakage observed. Since no evidence of leakage was observed, MSBA selected three locations along the piping run most likely to experience leaks (Figure 2) as follows: 1) located at a joint/seam (Location "A"); 2) at an elbow entering the 2721-Z building (Location "B"); and 3) at the remaining elbow located near the UST (Location "Contingency or Extra"). Equipment blank samples and duplicate samples were also included in the sampling protocol. The sample locations are illustrated on Figure 2 and described in further detail in the (2011 05 02) Log Book, prepared by CH2MHill, included in Appendix B. Since native soil was not distinguishable from the backfill material, MSBA directed that samples be collected at approximately 14 to 16 inches below the bottom of the piping. The sample notes prepared by CH2MHill incorrectly list the sample collection depth at 12 inches bsg.

Also on May 2, 2011, MSBA attempted to direct the collection of decommissioning compliance soil samples from the former UST cavity using a back hoe type excavator. Due to the potential for radioactive dust associated with the PFP area, pea gravel could not be removed from the cavity with the back hoe or any form of mechanical excavator. Due to extensive sloughing of the pea gravel, the excavator was not able to reach native soil without removing material. In addition, the sloughing pea gravel caused the wooden shoring of the former UST cavity to bow and cave in. Due to the vicinity of two adjacent buildings located north and south of the former UST cavity, the excavator sampling attempt was immediately terminated and the cavity was backfilled and compacted to prevent potential structural damage. A Photograph depicting the former UST cavity is included in Appendix B as (2011 05 02) Additional Photographs. An alternative sampling plan using a push probe was prepared. Prior to sampling, MSBA presented the alternative sampling plan to Mr. Mike Blum of Ecology. Mr. Blum approved the alternative plan with a request for five decommissioning compliance soil samples instead of the required three samples. MSBA agreed to this request and collected the additional samples in accordance with approved alternative plan. An email from Mr. Blum approving the alternative plan and requesting the additional samples has been included as Appendix C.

On May 10 and 11, 2011, MSBA directed the collection of decommissioning compliance soil samples from the push probe borings at five locations. The sample locations are illustrated on Figure 2 and described in further detail in the (2011 05 10) and (2011 05 11) Log Books, prepared by CH2MHill, included in Appendix B. Four samples were collected beneath the bottom of the former tank cavity near each of the sidewalls and one sample was collected directly beneath the center of the tank (Figure 2). All five samples were collected from native soil at 11-13 feet below surface grade (bsg) directly beneath the pea gravel bedding. Native soil beneath the tank cavity consisted of brown/black well graded sands with trace gravels (group symbol SW of the Unified Soil Classification System). Equipment blank samples and duplicate samples were also included in the sampling protocol. Note that several logs in the chain of custody incorrectly describe the samples as being collected from depths of 11 to 15 feet. The included Log Books (Appendix B) describe the correct depths of 11 to 13 feet, which is also consistent with MSBA instructions and observations during the completion of the borings and sampling activities. Groundwater was not encountered during any sampling or decommissioning activities and is anticipated to present at a depth of 200 feet bsg or greater at the former UST location.

Soil removed during the product line piping and UST decommissioning was placed in six small stockpiles. This soil was removed using vacuum extraction equipment with HEPA filters designed to remove and eliminate the potential of radioactive dust entering the atmosphere. MSBA estimates that approximately 75 cubic yards of soil were removed in this manner. A total of three composite soil samples were collected from the stockpiled soil for analysis. The stockpile sampling is described in further detail in the (2011 05 02) Log Book prepared by CH2MHill, included in Appendix B.

2.4 Sample Results

All soil samples, including product line, UST, stockpile, equipment blank, and duplicate samples were submitted to WSCF Laboratory in Richland, Washington for analysis of diesel using method NWTPH-Dx, for volatile organic compounds (VOCs) by SW-846 Method 8260B, and for radiochemistry gross alpha/gross beta.

Diesel was not detected in any samples, with the exception of a product piping sample at location B (Figure 2), which contained diesel at a concentration of 9 parts per million (ppm). VOCs were not detected in any samples, with the exception of the product piping sample at location "Contingency or Extra" (Figure 2), which contained toluene, exclusively, at a concentration of 1.9 parts per billion (ppb). Gross alpha and gross beta were detected in nearly all samples at concentrations up to 3.0 pCi/g. The analytical results are summarized in Table 1 and copies of laboratory analytical reports are included as Appendix D.

2.5 Disposal Documentation

Prior to the UST system decommissioning, approximately 1,540 gallons of diesel fuel were removed from the day tanks, UST, and fuel lines by the Mission Support Alliance contractor for re-use on the Hanford Site. The UST, fuel lines, and water used to decontaminate the sampling equipment were disposed at the Environmental Restoration Disposal Facility (ERDF) at the Hanford Site. Approximately 12 cubic yards of stockpile soil was used to backfill the former UST cavity, the remaining stockpiled soil was also disposed at the ERDF. Disposal documentation for the materials listed above are included as Appendix E.

3.0 CONCLUSIONS

The UST and product piping have been decommissioned by removal and a site assessment was performed in general accordance with WAC Chapter 173-360 and the GSCSAUST guidance document. MSBA has included completed Ecology Underground Storage Tank Closure and Site Assessment Notice and Ecology Underground Storage Tank Site Check/Site Assessment Checklist forms as Appendix F. Diesel and VOCs were not detected or were detected well below Model Toxics Control Act (MTCA) Method A cleanup levels in any samples collected. Diesel was detected in only one sample, product piping sample location B, at a concentration of 9 ppm, and the VOC toluene was detected in only one sample, product piping sample location "Contingency or Extra", at a concentration of 1.9 ppb. Therefore, MSBA concludes that further assessment at this site with respect to the UST is not warranted.

4.0 REMARKS AND SIGNATURES

The information/conclusions/recommendations/proposals contained in this report were arrived at in accordance with currently accepted professional environmental and hydro geologic practices at this time and location. No warranties are intended or implied. This report was prepared solely for CH2MHill and the US DOE. Martin S. Burck Associates, Inc. is not responsible for the independent interpretations, conclusions, or actions of others derived from or based on the information presented herein.

Information and opinions presented in this report are based on the collection and review of data from limited portions of the site subsurface and surroundings. Martin S. Burck Associates, Inc. is not responsible for conditions that may exist in portions of the site that were not investigated; for conditions that were not reported or properly presented; and for future activities or investigations that may alter the current condition or understanding of the site.

Please contact me at (541) 387-4422 if you have any questions regarding this investigation.

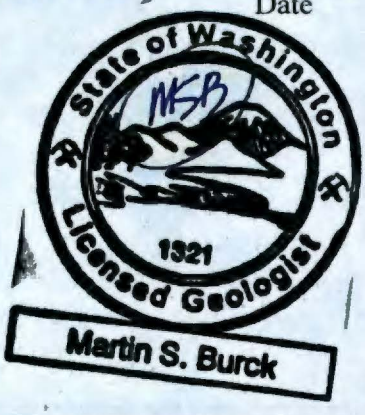
Martin S. Burck Associates, Inc.

Prepared By:

Josh Owen — Date 6/9/11
Project Manager, WA Site Assessor

Reviewed By:

Martin S. Burck, R./LG — Date 6/9/11
Registered/Licensed Geologist: OR, CA, WA



APPENDICES

Figures	Figure 1 Site Location Map
	Figure 2 Site Map
Table	Table 1 Soil Sample Analytical Results
Appendix A	1998 Underground Storage Tank Site Assessment Report
Appendix B	Work Instruction
	(2011 05 02) Log Book
	(2011 05 02) Additional Photographs
	(2011 05 10) Log Book
	(2011 05 11) Log Book
Appendix C	Department of Ecology Alternative Sampling Plan Approval Email
Appendix D	Laboratory Analytical Reports
Appendix E	Disposal Documentation
	UST and Soil Disposal Documentation
	UST System Piping Disposal Documentation
	(2011 06 08) Disposal Summary Email from Jim Leary (of CH2MHill)
Appendix F	Underground Storage Tank Closure and Site Assessment Notice
	Underground Storage Tank Site Check/Site Assessment Checklist
Appendix G	CD - Copy of Report

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Figures

Figures

Figure 1 Site Location Map
Figure 2 Site Map

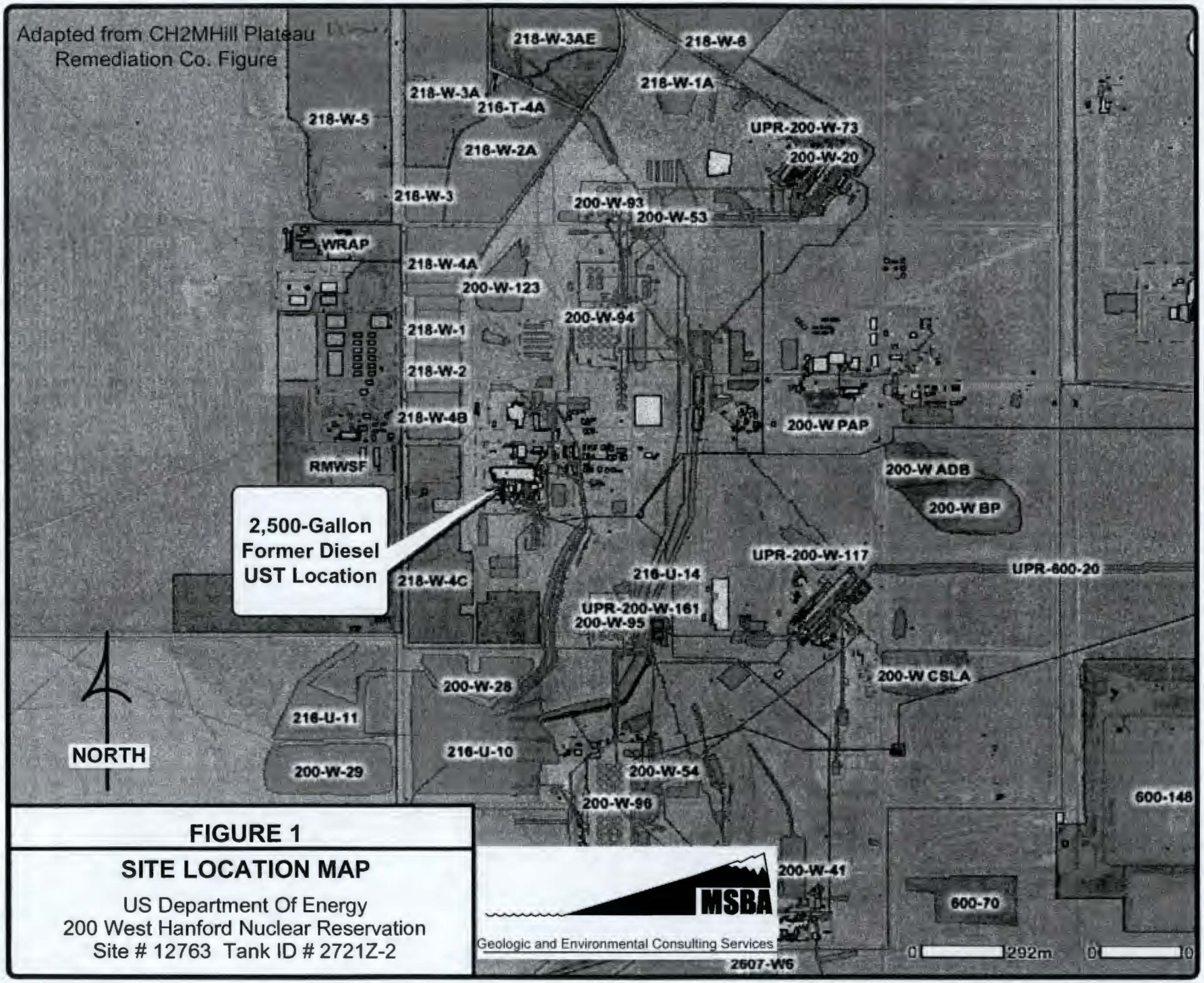

FIGURE 1

SITE LOCATION MAP

US Department Of Energy
200 West Hanford Nuclear Reservation
Site # 12763 Tank ID # 2721Z-2

MSBA
Geologic and Environmental Consulting Services

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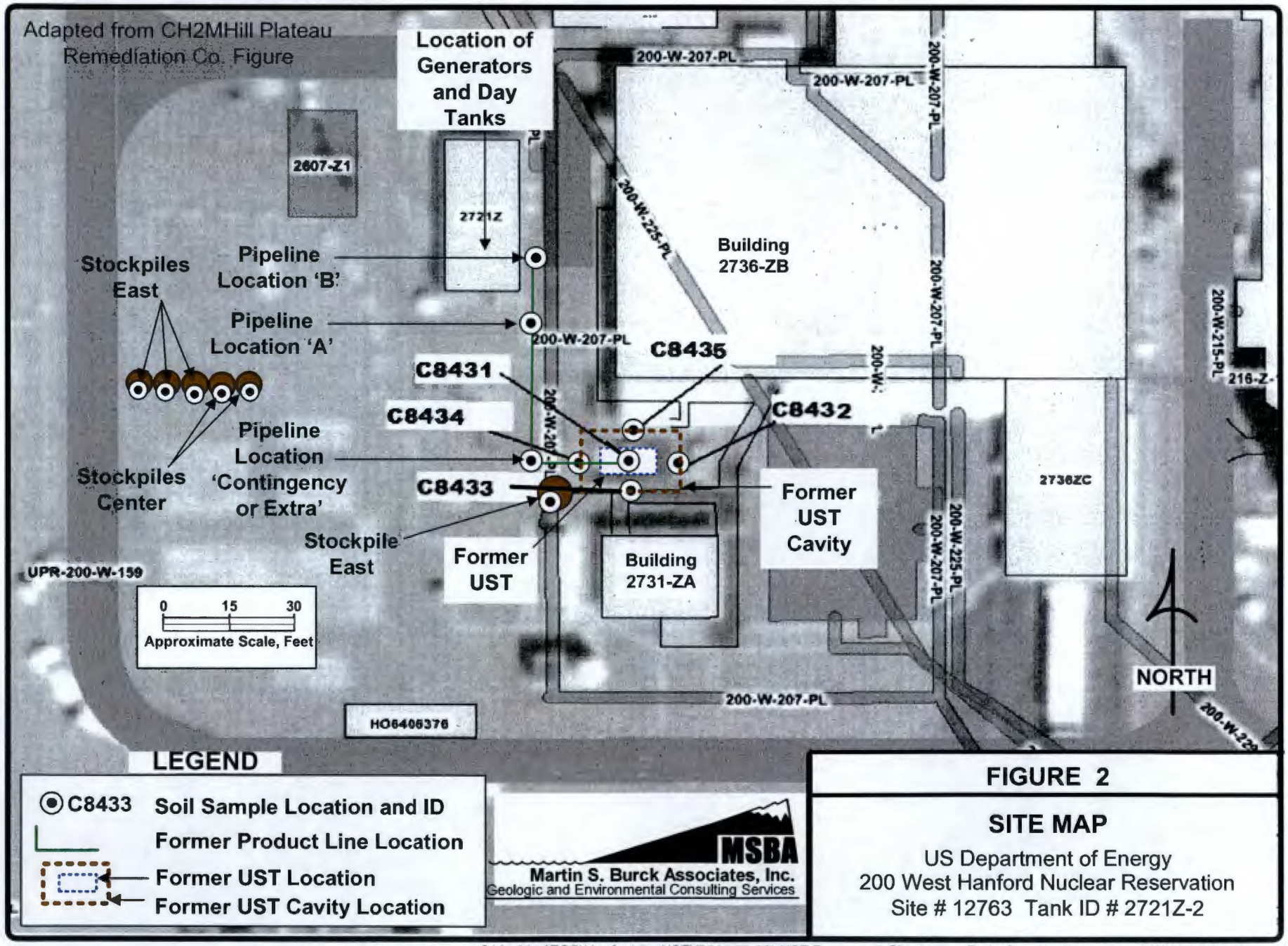

FIGURE 2

SITE MAP

US Department of Energy
200 West Hanford Nuclear Reservation
Site # 12763 Tank ID # 2721Z-2

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Tables

Table 1 Soil Sample Analytical Data

TABLE 1
SOIL SAMPLE ANALYTICAL DATA

US Department of Energy
200 West Hanford Nuclear Reservation
Site # 12763 Tank ID # 2721Z-2

Sample ID	Sample Date	Sample Depth [a] (bsg)	Sample Location	Diesel-Range Hydrocarbons [b] (ppm) [c]	Volatile Organic Compounds (VOCs) [d]							Radiochemistry	
					Benzene (ppb) [e]	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	1,1-Dichl. (ppb)	Tri.Chl. (ppb)	Chloro-benzene (ppb)	Gross Alpha (pCi/g) [f]	Gross Beta (pCi/g)
UST Compliance Samples													
C8431	5/10/11	11-13'	Middle Tank Cavity	< 4 [g]	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**1.7** [h]	**2.9**
C8432	5/10/11	11-13'	East Tank Cavity	< 4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**2.1**	**2.1**
C8433	5/10/11	11-13'	South Tank Cavity	< 4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**1.1**	**1.2**
C8434	5/11/11	11-13'	West Tank Cavity	< 4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-- [i]	--
C8435	5/11/11	11-13'	North Tank Cavity	< 4	< 1	< 1	< 1	< 1	< 1	< 1	< 1	--	--
UST System Piping Samples													
B2D1B6 [j]	5/2/11	~ 2.3'	Pipeline Location A	< 4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**3.0**	**2.8**
B2D1B9 [j]	5/2/11	~ 2.3'	Pipeline Location B	**9.0**	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	**1.7**	**2.2**
B2D1C6 [j]	5/2/11	~ 2.3'	Pipeline Location Contingency (Extra)	< 4	< 0.9	**1.9**	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	**1.2**	**2.5**
Stockpile Samples													
B2D1C0 [j]	5/2/11	n/a	Stockpile East	< 4	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	**2.1**	**2.1**
B2D1C2 [j]	5/2/11	n/a	Stockpile Center	< 4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**2.1**	**2.6**
B2D1C4 [j]	5/2/11	n/a	Stockpile West	< 4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	**1.8**	**3.0**

a Depth of sample, in feet below surface grade (bsg)
b Diesel-Range hydrocarbons analyzed using Method NWTPH-Dx
c Diesel analytical results reported in parts per million (ppm)
d Volatile Organic Compounds (VOCs) benzene, toluene, ethylbenzene, total xylenes, 1,1-Dichloroethene (1,1-Dichl.), trichloroethene (Trichl.), and Chlorobenzene analyzed using SW-846 Method 8260B
e VOC analytical results reported in parts per billion (ppb)
f Radiochemistry Gross Alpha and Gross Beta reported in average picocuries per gram (pCi/g)
g Not detected above the laboratory mrl, as listed (<)
h Bold values indicate concentrations exceeded laboratory mrl
i -- indicates not analyzed
j UST System Piping and Stockpile Sample IDs were unique to each sample analysis and duplicate; see Appendix B (2011 05 02) Log Book for a summary of individual sample IDs. Sample duplicae results were used if higher concentrations and/or reporting limits were listed
Note: Equipment blanks were also collected during each sampling event. Diesel and VOCs were not detected in any field blank samples

Appendix A

1998 Underground Storage Tank Site Assessment Report

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

99-EAP-068

DEC 17 1998

Mr. E. R. Skinnarland
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Dear Mr. Skinnarland:

CLOSURE AND SITE ASSESSMENT NOTICE AND SITE ASSESSMENT REPORT FOR UNDERGROUND STORAGE TANKS 2721Z-1 AND 2736-ZA-1

This letter transmits the enclosed Underground Storage Tank (UST) Closure and Site Assessment Notice and Site Assessment Report for USTs 2721Z-1 and 2736-ZA-1. The UST Closure and Site Assessment Notice and Site Assessment Report for USTs 2721Z-1 and 2736-ZA-1 is being submitted in accordance with Washington Administrative Code 173-360-385.

If you have any further questions, please contact me on (509) 376-5441 or Alex E. Teimouri of my staff on (509) 376-6222.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

Enclosure

cc: (See page 2)

DOES NOT CONTAIN
CLASSIFIED,
OFFICIAL USE ONLY INFORMATION,
OR
UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION
Name/Org: K. R. Herzog PFP-ENG Date: 4-7-99

DEC 17 1998

cc w/encl:
W. D. Adair, FDH
J. E. Bramson, BWHC
F. R. Crawford, BWHC
E. M. Greager, WMH
J. S. Hill, WMH
R. Jim, YIN
L. J. Olguin, FDH
D. Powaukee, NPT
D. R. Sherwood, EPA
J. Smith, Ecology
J. R. Wilkinson, CTUIR
J. A. Winterhalder, WMH
T. A. Wooley, Ecology

received
28 Dec 1998

UNDERGROUND STORAGE TANK
Closure and Site Assessment Notice

See back of form for instructions

FOR OFFICE USE ONLY
Site ID #:
Owner ID #:

Please ✓ the appropriate box(es)

☐ Temporary Tank Closure ☐ Change-In-Service ☑ Permanent Tank Closure ☐ Site Check/Site Assessment

Site Information

Site ID Number 12763
(Available from Ecology if the tanks are registered)

Site/Business Name PFP

Site Address 200W HANFORD WA
Street

City/State Hanford Site

Zip Code NA Telephone ( ) NA

Owner Information

(This form will be returned to this address)

UST Owner/Operator U.S. Department of Energy Richland Operations Office

Mailing Address 825 Jadwin Avenue
Street

P. O. Box 550
P.O. Box

City/State Richland, WA. 99352

Zip Code 99352 Telephone ( )

Owner's Signature

Tank Closure/Change-In-Service Company

Service Company THOMESON MECH / Technico Environmental

Certified Supervisor DON JARRETT / Jeff Brown Decommissioning Certification No. 1091757-26/9947

Supervisor's Signature Don Jarrett / Jeffrey L. Brown

Address 606 BERTHI- ST
Street P.O. Box

PASCO WA 99301 Telephone (509) 545-5958 (509) 545-0136
City State Zip Code

Site Check/Site Assessor

Certified Site Assessor Alexander H. Koch Blue Sage Environmental, Inc.

Address Street P.O. Box 6738

City Kennewick State WA Zip Code 99336 Telephone (509) 586-8635

Tank Information

Tank ID	Closure Date	Closure Method	Tank Capacity	Substance Stored
2736-ZA-1	8-6-98	Removal	275 gal.	Diesel
2721-Z-1	8-6-98	Removal	2,000 gal.	Diesel

Contamination Present at the Time of Closure

☐ Yes ☑ No ☐ Unknown

Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

☐ Yes ☐ No

If contamination is present, has the release been reported to the appropriate regional office?

To receive this document in an alternative format, contact the TOXICS CLEANUP PROGRAM at 1-800-826-7716 (voice) OR (360) 407-6006 (TDD).

ECY 020-94 (Rev. 8/95)

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.	YES	NO
1. The location of the UST site is shown on a vicinity map.	AK	
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	AK	
3. A summary of UST system data is provided. (see Section 3.1.)	AK	
4. The soils characteristics at the UST site are described. (see Section 5.2)	AK	
5. Is there any apparent groundwater in the tank excavation?		AK
6. A brief description of the surrounding land use is provided. (see Section 3.1)	AK	
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	AK	
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	AK	
- groundwater samples distinguished from soil samples (if applicable)		
- samples collected from stockpiled excavated soil	AK	
- tank and piping locations and limits of excavation pit	AK	
- adjacent structures and streets	AK	
- approximate locations of any on-site and nearby utilities		
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)		
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	AK	
11. Any factors that may have compromised the quality of the data or validity of the results are described.		
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.		AK

SITE ASSESSOR INFORMATION

Alexander H. Koch — Person registered with Ecology

Blue Sage Environmental, Inc. — Firm Affiliated with

Business Address: P.O. Box 6738 — Street

Telephone: (509) 586-8635

Kennewick — City

WA — State

99336 — Zip Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

8-17-98 — Date

Signature of Person Registered with Ecology

UNDERGROUND STORAGE TANK
SITE ASSESSMENT REPORT

Prepared for:

FLUOR DANIEL NORTHWEST, INC.
1100 Jadwin Avenue
P.O. Box 1050
Richland, Washington 99352-1050

Prepared by:

BLUE SAGE ENVIRONMENTAL. INC.
P.O. Box 6738
Kennewick, Washington 99336

August 14, 1998

Site Owner:

United States Department of Energy
Federal Building
825 Jadwin Avenue
Richland, WA 99352

Site Operator

BWHC
Under contract to -
Fluor Daniel Hanford

Site Location:

Plutonium Finishing Plant
200 West Area
Hanford Nuclear Reservation
Washington Department of Ecology Site ID #12763

General Area Description:

The Hanford Site is located north of Richland, WA. The site follows the Columbia River which is the eastern and northern boundary. The 200 West Area is located approximately thirty miles from Richland (Figure 1). Located inside the 200 West Area is the Plutonium Finishing Plant (PFP). The PFP is a secured compound where plutonium that was manufactured at Hanford was processed and stored. The compound consists of multiple buildings enclosed inside security fencing and guarded twenty-four hours a day.

UST System Data:

Two (2) Underground Storage Tanks (UST) used to store diesel fuel were taken out of service at the PFP. These tanks were used to supply diesel powered generators located inside of the buildings with which they are identified . Piping connected each tank to its respective generator. Following are descriptions of the USTs:

Building	Tank No.	Size	Capacity	Installation Date
2736-ZA	1	42" dia. x 48"	275 gal.	Early 1970s
2721-Z	1	64" dia. x 150"	2,000 gal.	Early 1980s

Site Decommissioning Operations:

Both USTs were permanently closed by removal in early August 1998. Tank 2736-ZA-1 will not be replaced. All piping was removed back to the building wall where it was capped. Tank 2721-Z-1 was removed and will be replaced with an upgraded tank. The new tank is being installed to meet the requirements for Underground Storage Tanks that go into effect after December 22, 1998. Original tank piping that connects back to the generator in Building 2721-Z was left in place. It will be reattached to the new tank.

Approximately 70 cubic yards of soil was removed from around the tanks. This soil was stockpiled onsite. It will remain at the PFP.

Hydrogeological and Soil Characteristics:

The Hanford Site is in the Pasco Basin, a structural depression formed in the underlying basalt bedrock.. The Columbia River Basalt Group is a sequence of continental flood basalts covering more than 160,000 km^2. Overlying the basalt within the Pasco Basin are fluvial and lacustrine sediments of the Ringold Formation. The ancestral Columbia River and its tributaries flowed into the Pasco Basin, depositing coarse-grained sediments in the migrating river channels and fine-grained sediments (silt and clay) in the overbank flood deposits. On at least two occasions, these river channels were blocked, forming a lake in the Pasco Basin and depositing extensive layers of fine-grained sediments within the Ringold formation. The uppermost sedimentary unit covering much of the Hanford Site is the Hanford formation (informal), a complex series of coarse- and fine-grained sediments. Capping the Hanford formation in many areas is a thin veneer of eolian sands and/or recent fluvial deposits.

The unconfined aquifer is generally located in the unconsolidated to semiconsolidated Ringold and Hanford formations that overlie the basalt bedrock. In some areas, low-permeability mud layers form aquitards and create local confined hydraulic conditions in the underlying sediments. However, these aquitards are not continuous across the Hanford site and the entire suprabasalt aquifer is connected on a site wide scale.

The suprabasalt sediments underlying the Hanford Site reach a maximum thickness of ~190 m near the center of the site, but pinch out along the flanks of the basalt ridges. Depth to the water table ranges from <0.3 m near the Columbia River to >106 m near the 200 Areas. Perched water-table conditions have been encountered in sediments above the unconfined aquifer system in the 200 West Area and in irrigated offsite areas east of the Columbia River.

Ground water in the unconfined aquifer system flows generally from recharge areas in the elevated regions near the western boundary of the Hanford Site toward the Columbia River. The Columbia River is the discharge zone for the unconfined aquifer system

(*Hanford Site Ground-Water Monitoring for 1995, Pacific Northwest National Laboratory, August 1996*).

Following are descriptions of below ground surface (bgs) soils by depth as found around each tank during sampling activities:

Tank 2736-ZA-1 (500 gallon)

Depth (bgs)	Description
0 - 1 feet	Layers of asphalt
1 - 2 feet	GP - Poorly graded gravel w/sand mixture (interpreted to be imported fill material)
2 - 5 feet	SP - Poorly graded sand with gravel

Tank 2721-Z-1 (2,000 gallon)

Depth (bgs)	Description
0 - 2 feet	GP - Poorly graded gravel w/sand mixture (interpreted to be imported fill material)
2 - 7 feet	SP - Poorly graded sand with gravel

Ground water was not encountered at either UST excavation site.

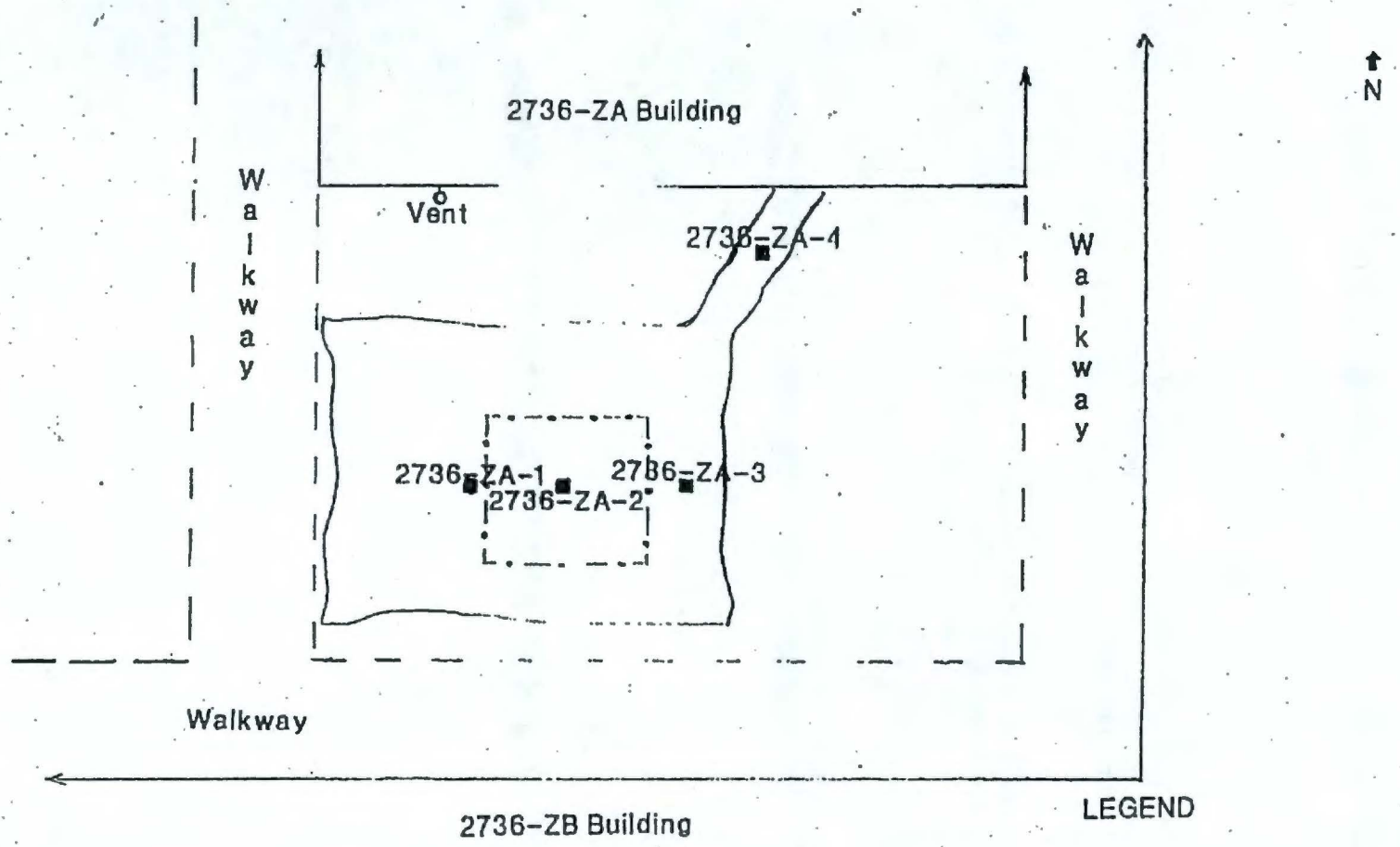
Site Sampling Data:

Remaining soil in the excavation area created from the removal of tank 2736-ZA-1 did not have any obvious visual or olfactory characteristics that would indicate a release of product into the environment. A soil sample was taken from each end of the tank and from the approximate center of the tank. A fourth soil sample was taken from the pipe channel where the tank's piping was capped as it went into the building (Figure 2).

Following are the descriptions of sample locations for tank 2736-ZA-1:

Sample Number	Location	Depth (bgs)
2736-ZA-1	West end	4 feet
2736-ZA-2	Floor, center	5 feet
2736-ZA-3	East end	4 feet
2736-ZA-4	Pipe Channel	1 foot

Remaining soil in the excavation area created from the removal of tank 2721-Z-1 did not have any obvious visual or olfactory characteristics that would indicate a release of product. A soil sample was taken from each end, and from the center of the tank (Figure 3).. In addition, a sample was taken near the northwest corner of the tank. This was done as a precaution after Ted Wooley, Washington Department of Ecology, had inspected the site on August 10, 1998 and noted what appeared to have been staining in this area. However, during sampling on August 11, 1998 the area was dry and the same color as surrounding soil. The excavation area was enclosed with an unbroken wall of



LEGEND

Sample Point ■

UST -.-.-

Sidewalks ------

BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA	TITLE Sample Locations - UST Closure 2736-ZA Building, PFP Hanford, WA	SCALE 1"=4'-0" DRAWN A. KOCH DATE 8/14/98	DWG. NO. Figure 2

vertical 2x12 shoring starting at ground level to a depth of seven (7) feet bgs. It was not possible to access the sidewall area where the tank's piping entered the excavation.

Following are the descriptions of sample locations for tank 2721-Z-1

Sample Number	Location	Depth (bgs)
2721-Z-1	Floor, west end	7 feet
2721-Z-2	Floor, center	7 feet
2721-Z-3	Floor, east end	7 feet
2721-Z-4	Floor, northwest corner	7 feet

The stockpile of soil that came from the excavation areas during the removal of the two (2) USTs was also sampled. Three (3) soil samples were taken from random locations across the pile. Each sample was taken from between one (1) foot to two (2) feet below the exposed surface of the pile.

Soil samples were taken to the Waste Sampling and Characterization Facility (WSCF), operated by Waste Management Hanford. Attached as Appendix I are copies of the lab reports and chain of custody forms. All soil samples were analyzed for Total Petroleum Hydrocarbons by Washington Department of Ecology Method WTPH-D. Analytical results were reported in µg/g which directly coverts to mg/kg. Following are the results:

Lab Report #98001102, dated August 14, 1998

Sample Number	Result (mg/kg)	MDL (mg/kg)
2736-ZA-1	<25	25
2736-ZA-2	<25	25
2736-ZA-3	<25	25
2736-ZA-4	<25	25

Lab Report #98001101, dated August 14, 1998

Sample Number	Result (mg/kg)	MDL (mg/kg)
2721-Z-1	<25	25
2721-Z-2	<25	25
2721-Z-3	<25	25
2721-Z-4	<25	25
Stockpile-1	<25	25
Stockpile-2	<25	25
Stockpile-3	<25	25

Summary of Findings:

All soil sample results were below the Method A Cleanup Level in Soil for TPH (diesel) of 200.0 mg/kg, as analyzed from both UST areas and the stockpile of excavated material. As the results did not confirm a release of product into the environment, no cleanup actions are required under The Model Toxics Control Act, Cleanup Regulation, Chapter 173-340 WAC, Amended January 1996.

APPENDIX I

LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

WSCF
ANALYTICAL LABORATORY REPORT

Attention: JIM WITT
Project Number PFP OPS :PFP OPERATIONS

Group #: 98001102

Sample #	Client ID		Test Performed	Matrix	Method	RQ	Result	Units	MDL	Analyzed	Sampled	Received
W98D001183	273G-ZA-1	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W98D001184	273G-ZA-2	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W98D001185	273G-ZA-3	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W98D001186	273G-ZA-4	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The analyte was detected in the associated method blank.
E - Compound concentration exceeded calibration range.
M - Identification is based on a mass spectral library search.
D - Compound concentration resulted from a dilution.
J - Estimated value.
Z - See Comments.
U - The analyte was analyzed for but not detected.

* - Indicates results that have NOT been validated.

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention:
Project Number :

Group #: 98001102

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units

RQ=Result Qualifier
ND=Not Detected

B - The analyte was detected in the associated method blank.
M - Identification is based on a mass spectral library search.
J - Estimated value.
U - The analyte was analyzed for but not detected.

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WSCF
ANALYTICAL LABORATORY REPORT

Attention: JIM WITT
Project Number PFP OPS :PFP OPERATIONS

Group #: 98001101

Sample #	Client ID		Test Performed	Matrix	Method	RQ	Result	Units	MDL	Analyzed	Sampled	Received
W9B3001176	2721-Z-1	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001177	2721-Z-2	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001178	2721-Z-3	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001179	2721-Z-4	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001180	STOCKPILE 1	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001181	STOCKPILE 2	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98
W9B3001182	STOCKPILE 3	WITT	Total Pet. Hydrocarbons Diesel	SOLID	WTPH-D (WDOE	<	25	ug/g	25.00	08/10/98	08/07/98	08/07/98

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The analyte was detected in the associated method blank.
D - Compound concentration resulted from a dilution.
E - Compound concentration exceeded calibration range.
J - Estimated value.
Z - See Comments.
N - Identification is based on a mass spectral library search.
U - The analyte was analyzed for but not detected.

* - Indicates results that have NOT been validated.

WSCF
TENTATIVELY IDENTIFIED PEAK REPORT

Attention:
Project Number :

Group #: 98001101

Sample #	Client ID	Test Name	Peak Name	CAS#	RT	RQ	Result	Units

RQ=Result Qualifier
ND=Not Detected

B - The analyte was detected in the associated method blank.
N - Identification is based on a mass spectral library search.
J - Estimated value.
U - The analyte was analyzed for but not detected.

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Waste Management Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: ALEX KOCH	Company Contact: JIM WITT	Telephone No.: 372-3313	Project Coordinator: HARV MADGRA
Data Turnaround:			
Project Designation: C-189	Sampling Location: 2736-ZA		SAF No.:
Ice Chest No.:	Field Logbook No.:		Method of Shipment:
Shipped To: WESCF	Offsite Property No.:		Bill of Lading/Air Bill No.:

POSSIBLE SAMPLE HAZARDS/REMARKS: DIESEL

Special Handling and/or Storage:

Preservation											
Type of Container	4oz										
No. of Container(s)	4										
Volume											

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time
2736-ZA-1	SOIL	8-7-98	0930
2736-ZA-2	"	"	0935
2736-ZA-3	"	"	0940
2736-ZA-4	"	"	0945

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
J Witt	8-7-98 1055	Steve Stumm	8-7 1100
Steve Stumm	8-7 1320	M. M. Kosti	8-7-98 1320

SPECIAL INSTRUCTIONS

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

LABORATORY SECTION: Received By: ____ Title: ____ Date/Time: ____

FINAL SAMPLE DISPOSITION: Disposal Method: ____ Disposed By: ____ Date/Time: ____

Appendix B

Work Instruction
(2011 05 05) Log Book
(2011 05 02) Additional Photographs
(2011 05 10) Log Book
(2011 05 11) Log Book

Work Instruction

Remediate 2721-Z Diesel Tank

1.0 PURPOSE:

The Diesel Generators are no longer needed for back-up power. This work package will Isolate and remove fuel supply lines to the Diesel Generators, remove concrete pad over the Diesel Fuel Tank and the removal of the Diesel fuel tank. Also the 2736-ZB A/C Unit #1 and pad and the removal security cameras, tower and pad will be removed.

1.1 SCOPE:

Task 1. Mobilize/Setup tools, material and equipment needed to perform work.

Task 2. Removal of jersey barriers, concrete and wooden walkways.

Task 3. Remove/Pump Diesel out of Tank.

Task 4. Isolate and Remove 2736-ZB A/C Unit #1 equipment and lines.

Task 5. Isolate and remove security cameras and tower 14.

Task 6. Remove pumps and equipment in pump pit and pump pit.

Task 7. Digging and Removing Supply and Return Fuel Lines and Sampling and Backfill.

Task 8. Removal of Concrete Pad over Diesel Tank, Tank Excavation, Tank Removal, Soil Sampling and Backfill.

2.0 REFERENCES

2.1 Work Record.

2.2 ZO-170-047 Low Level Waste Handling and Packaging.

2.3 ZO-170-059 Low Level Mixed Waste Handling and Packaging.

2.4 LLMW-09-51R1 Waste Packaging/Labeling Instruction Sheet.

2.5 Diesel Tank-01 Waste Packaging/Labeling Instruction Sheet.

2.6 Diesel Tank-02 Waste Packaging/Labeling Instruction Sheet.

2.7 Diesel Tank-03 Waste Packaging/Labeling Instruction Sheet.

2.8 PFP-B-003 Waste Packaging/ Labeling Instruction Sheet.

2.9 AJHA #5856.

2.10 WPE #2Z0907547-001-00

2.11 ECR-10-002140

2.12 Waste Planning Checklist.

2.13 CHPRC-USQ Determination - PFP-009-2011.

2.14 Scan Data Report (Request No: 111-138) (File No: S2WZP03). Appendix 6.

2.15 Excavation Permit #DAN11-00089.

2.16 RWP- 988- Radiation Work Permit.

2.17 DOE-RL-92-36, Hanford Site Hoisting and Rigging Manual.

2.18 DOE-0344, Hanford Site Excavation, Trenching and Shoring.

2.19 MSDS:

- UPP Pads MSDS #035629.
- Diesel Fuel MSDS #025150A
- 3M Fire Barrier CP 25WB+ Caulk MSDS #035627D.
- Simple Green, MSDS #012261 or 069757.

3.0 SPECIAL MATERIAL, TOOLS AND EQUIPMENT

3.1 Specials Tools

- GFCI /Power Spider.
- Portable Band Saw.
- Reciprocating Saw.
- Blades.
- Shovels.
- Jack Hammer.
- Sledge Hammer(s).
- Peristaltic Pump.
- Fire Extinguisher (Multipurpose A, B, C).

3.2 Equipment

- Fork Lift.
- Guzzler.
- Crane.
- Backhoe with Front Loader.
- HEPA Vacuum.
- HEPA Down Drafter.
- Front Loader.
- Backhoe with Hydraulic Hammer.

3.3 Materials

- Duct tape, Masking tape, Metal tape.
- Plastic sheeting/swimming pool liner.
- UPP Pads MSDS #0575454.
- *3M Fire Barrier CP 25WB+* Caulk MSDS #035627D.
- Simple Green, MSDS #069757.

4.0 PRECAUTIONS AND LIMITATIONS

4.1 Elevated Work

4.1.1 Warning barricades are required for work areas, to control unauthorized access to the work area, and to identify hazards associated with the work.

4.1.2 When there is a potential for falling objects, the work area beneath the work **SHALL** be barricaded and restricted to essential personnel only.

4.1.3 Approval from the FWS and concurrence from Industrial Safety (IS) **SHALL** be obtained and documented on the work package Work Record for all ladder use.

4.2 Power Tools

4.2.1 A face shield in combination with safety glasses SHALL be worn when performing activities that may create flying debris that poses a hazard.

4.2.2 Hearing Protection is required within 20 feet during operation of power tools or IH conduct Monitoring.

4.2.3 Hearing protection **SHALL** be worn when working in posted high noise areas (>85dBA-TWA) or when within hearing protections boundaries identified by Industrial Hygiene.

4.3 Worker Safety

4.3.1 Personnel will not physically pick up more than fifty five (55) pounds. If equipment is hard or awkward to handle, additional personnel will be obtained or lifting will be performed using mechanical means

4.3.2 Gloves with a cut resistant rating of greater than 2 will be worn when using tools or handling objects that pose a cut or puncture hazard (examples include box knives and Sawzall,) or when exposed to pinch points.

4.3.3 FWS is to discuss thermal stress (heat or cold) during the pre-job briefing. Personnel will use the buddy system to monitor each other for signs of heat stress / hypothermia. Keep fluid (water) intake up. FWS is to determine a thermal recovery area if available. IH can be contacted at PAX 310 for questions or assistance.

4.3.4 "An Excavation Competent Person (CP) will be assigned to this work to ensure all hazards associated with the excavation are mitigated to ensure employee safety. Excavation will be inspected daily by the CP using the required checklist. Employees will not be exposed to cave-in hazards during shoring installation".

4.3.5 Temporary lighting shall be provided for areas without adequate illumination to safely perform work.

4.3.6 Safety glasses, Hearing Protection and face shield to be worn when manually chipping concrete.

4.3.7 Hard-Toe Safety shoes required.

4.3.8 Knee and elbow protection will be used for periods of prolonged kneeling or leaning on elbows or blind movement of arms in a restricted space.

4.3.9 Painted surfaces (i.e. potential Fixed Contamination) to be cut, wet methods or a hepa vacuum will be used during removal of concrete.

4.4 Emergency communication

4.4.1 The Team Leader/Superintendent shall ensure all facility personnel can be alerted to emergency situations when working in high-noise areas. The Team Leader shall also ensure that all on-duty shift personnel are able to be quickly contacted.

4.5 Radiological Controls.

4.5.1 Area is considered radiologically clean. If contamination is discovered stop work properly post and notify the DRCM and FWS.

4.5.2 Controls from the RWP SHALL be adhered to when working in a Radiological Controlled Area.

4.5.3 When using the guzzler follow instructions form the attached letter located in Appendix 3.

4.5.4 Survey soil prior to digging and at one foot levels during excavation. If contamination is found post the area properly.

4.5.5 Establish an RBA around the entire diesel tank.

4.5.6 Prior to breaking the RINO liner over the tank, Survey area to verify no removable contamination is present.

4.5.7 Surveys are required prior to removal of any barrier, steps, walkways or other concrete structures if not already moved.

4.6 Fire Safety

4.6.1 No Flammable / combustible liquids (aerosol cans, paints, lubricants, gasoline, etc.) are allowed in the work area, with the exception of those required for the work activities.

- Limit combustible liquids to 5 gallons and flammable liquids to 1 gallon per room when outside of a flammable/combustible liquids storage cabinet.

4.6.2 No transient combustibles (wood, paper, plastic, etc.) are allowed in the work area, with the exception of those required for work activities.

4.7 Lifting and Hauling Loads

4.7.1 Spotters will be used to prevent interference with objects, obstacles, and personnel.

4.8 Chemical Hazards

4.8.1 If anything unexpected occurs, emergency response procedures will be followed and personnel will exit the work area.

4.9 Crane & Forklift Precautions:

4.9.1 Personnel not directly involved with the lift **SHALL** be kept clear of the area.

4.9.2 Working under a suspended load SHALL not be permitted.

4.9.3 A qualified signaler (line watch) will be assigned; whose sole responsibility is to verify the required clearance with power/communication lines is maintained (greater than ten (10) feet) and **SHALL** be in constant contact with the crane operator. No one **SHALL** be permitted to touch the crane or the load unless the signaler indicates it is safe to do so

4.9.4 Fingers, hands and feet will be clear of rigging equipment, when lifting is in progress.

4.9.5 Barricades and warning lines will be installed at the work area.

4.9.6 Outriggers will be extended, properly placed and secure prior to lifting load.

4.9.7 Persons directly involved with the lift **SHALL** meet the requirements of DOE-RL-92-36, "*Hoisting and Rigging*".

4.9.8 The mobile crane will be operating within a booms-length of communication lines on the south west corner of 2736-ZB.

4.10 Hearing protection (i.e. Ear plugs (Formable/Pre-molded) with a minimum 25 dBA Noise Reduction Rating (NRR) or custom molded plugs when within 25 feet of operating equipment) will be used. IH can monitor noise levels around operating equipment and may adjust the hearing protection requirements. This adjustment will be documented in the Work Record.

4.11 Reflective vests will be worn by all personnel while in the work area.

4.11.1 Spotters will be used when equipment is transiting from location to location to ensure that adequate clearance is maintained from overhead lines (greater than ten (10) feet), utilities and structures. Refer to Attachment 2, "*Designated Parking Areas*" of ZAP-000-033, "*Plutonium Finishing Plant Hoisting and Rigging/Aerial Lift Program*" located in Appendix 6 of the WD for line height information.

4.11.2 Equipment will be in its lowest safe position when transiting from location to location.

4.11.3 Flag person or other means will be used to control traffic.

5.0 PREREQUISITES

5.1 SOM FACILITY CONDITIONS

5.1.1 None

5.2 FIELD CONDITIONS

5.2.1 ELERCTIRCAL DA perform the following:

5.2.1.1 Tasks 1, 2 and 3 can be **performed** prior to the electrical being isolated.

5.2.1.2 Ensure Electrical Isolations have been completed on the following, Diesel Tank, Heat Trace, Leak Detection Cameras on Tower 14 and the A/C #1 Unit per Work Package 2Z-10-6780/M.

Elect DA:_____/_____/_____
Print Signature Date

5.2.2 PERSON IN CHARGE/FIELD WORK SUPERVISOR (PIC/FWS)

5.2.2.1 ENSURE a copy of the latest revision of the RWP # (988) has been obtained and placed/logged into Appendix 2 of the work document, logged in the Work Record and that the JCS Reference section of the Work Document has been updated.

5.2.2.2 Establish perimeter barricades with signs to designate work area.

5.2.2.3 If temps are suppose to be >80 degrees or < 20 degrees contact **IH** for guidance on **HEAT/COLD Stress** controls.

5.2.2.4 Conduct a workability walk down with personnel performing the work to ensure that the scope of work is understood and that the work package can be worked, as written. Document each subsequent workability walk down in the work package work record located in appendix 1.

5.2.2.5 **Excavation Competent Person will Perform** a Daily Inspection per the Inspection Checklist of the open trenches and record on the form.A-6001-937 in appendix #3.

5.2.2.6 Conduct a pre-job brief.

5.2.2.7 **Prior** to starting work, notify shift operations manager (SOM) of work to be performed during current shift

5.2.2.8 The signature below indicates that all of the prerequisites in 5.2 are complete prior to the start of work.

PIC/FWS:_____/_____/_____

print signature date

And

5.2.1.11 **Document** in the Work Record that 5.2 has been completed.

Work Instruction

Remediate 2721-Z Diesel Tank

6.0 WORK INSTRUCTIONS

NOTE: 1 *All Tasks can be performed at any time or in concert per the FWS direction.*

NOTE: 2 *The electrical isolations were performed by work package 2Z-10-6780/M. See step 5.2.1.1.*

NOTE: 3 *The concrete pad above the diesel tank is a Fixed Contamination Area (FCA-Z-039).*

6.1 TASK 1: WORK AREA SETUP/PREPARATION:

NOTE: *Fire Hydrant 8Z is located South East of the Diesel Tank across the road and Fire Hydrant 9Z is located South West of the Diesel Tank across the road where it turns.*

Hydrant 10Z is located on the West side of 2721-Z.

6.1.1 **Install** backflow preventers on Fire Hydrants 8Z, 9Z or 10Z per the Hanford Fire Department Work Package FP-11-01672/G. Contact (Don Scott at 373-6099 or Greg Banks at 373-7116 to install the backflow preventers).

6.1.2 **Run** 1 ½ fire hoses from the fire hydrants to the Diesel Tank.

6.1.3 **Place** shoring along the fire hoses located across the road way so vehicles do not run over them if hoses are placed across the roadway..

6.1.4 Throughout each Task 1 thru 8 **perform alpha** contamination surveys as required.

6.1.5 **Mobilize/Setup** tools and equipment needed to perform the work and other preparation for work activities, as needed or as directed by the PIC/FWS. Document each in the work package Work Record.

Work Instruction

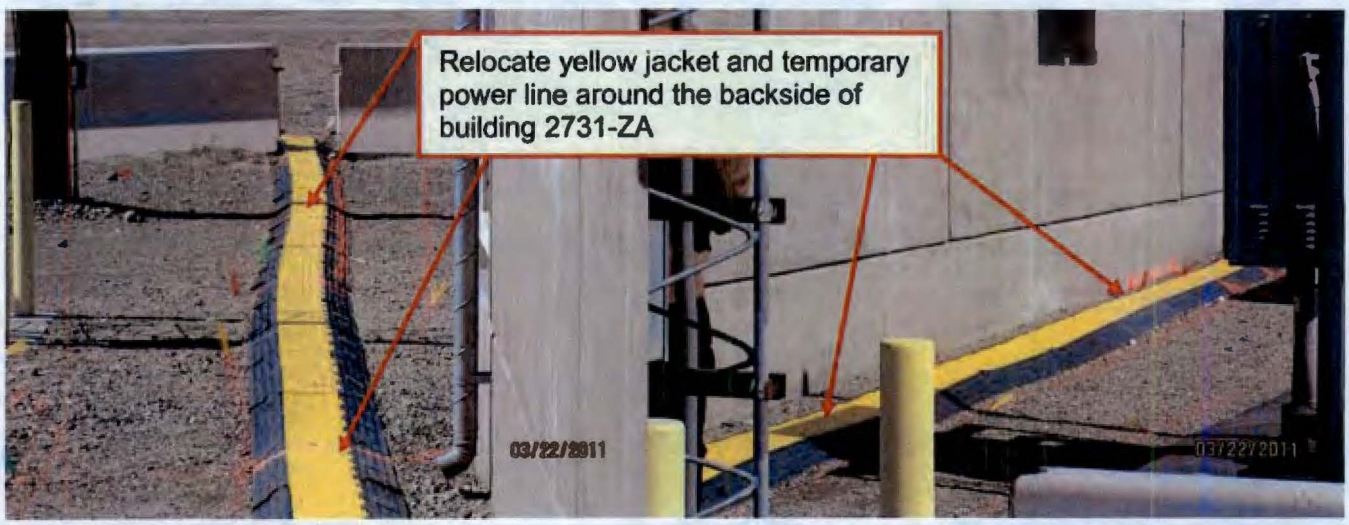
Remediate 2721-Z Diesel Tank

6.1.6 Establish work area barriers/boundaries/postings as required.

6.1.7 Ensure ERDF container(s) are staged.

6.1.8 Ensure yellow jacket and temporary power line has been rerouted around the backside of building 2731-ZA. Reference photo #1 and 2 on page 15.

Photo #1 **Photo #2**



Work Instruction

Remediate 2721-Z Diesel Tank

6.2 TASK 2: Removal of Jersey barriers concrete and wooden walkways.

6.2.1 **Remove** the two jersey barriers from around the Diesel Tank. See photo #3 on page 16. If not already removed.

6.2.2 Remove stairs going into building 2731-ZA. Reference photo #3 on page 16.

Photo #3

Work Instruction

Remediate 2721-Z Diesel Tank

6.2.3 Break up and remove the concrete walkway using wet methods to keep dust at a minimum. Reference photo #4 on page 17.

Photo #4

Work Instruction

Remediate 2721-Z Diesel Tank

6.2.4 Move the two jersey barriers as identified in Photo #5 on page 18. Set jersey barriers to the side to put back in place when work is complete as directed by FWS. If not already removed.

Photo #5

Work Instruction

Remediate 2721-Z Diesel Tank

6.2.5 Dismantle and remove the wooden walkway. If not already removed. Reference photo #6 on page 19.

Photo #6

6.3 TASK 3: REMOVE/PUMP DIESEL OUT OF TANK.

NOTE: 1 *The Diesel Tank is approximately three-quarters (3/4) full. The tank size is 2500 gallons.*

OPTION 1 **Pump Diesel from the Diesel Tank:**

6.3.1 **Obtain/Checkout** the key to the Diesel tank and building 2721-Z from the SOM's office.

6.3.2 **Back** fuel truck in as close to the as possible.

Work Instruction

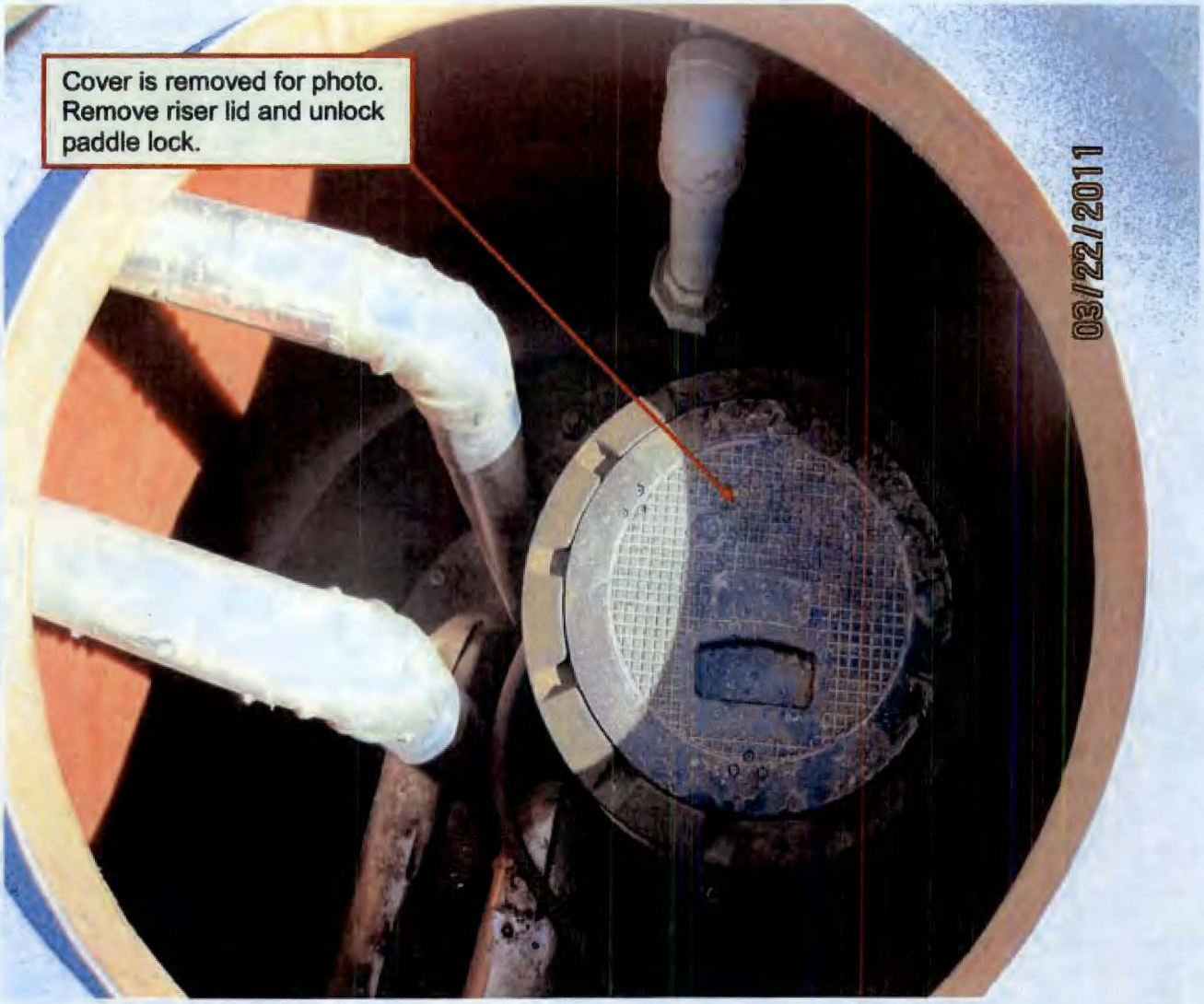
Remediate 2721-Z Diesel Tank

NOTE *The riser of the tank filler tube is a "Non-Permit confined space (CS ID #112).*

6.3.3 **Survey** the cover prior to removing then **Remove** the cover and riser lid and unlock the fill riser. Reference photo #7 on page 21.

6.3.4 **Contact** IH for the need to perform any air monitoring prior to breaking the plan of the confined space. Reference Confined Space Hazard Identification form in Appendix 3. Fill out monitoring form in appendix 3.

Photo #7



6.3.5 Contact IH prior to making any disconnections/connections to the fuel system for the need to provide IH monitoring.

6.3.6 **Insert** suction line into the Diesel Tank from the fuel truck.

6.3.7 **Remove** Diesel from the Diesel Tank into the fuel truck. Remove as much diesel fuel as possible.

NOTE: 1 *Steps 6.3.6, 6.3.7, 6.3.8 and 6.3.9 can be performed at any time after the Diesel Tank has been pumped.*

NOTE: 2 *There is approximately 25 gallons of Diesel fuel in each day tank.*

6.3.8 Unlock building 2721-Z.

6.3.9 Open each of the three day tanks.

6.3.10 Remove diesel fuel from the three day tanks inside building 2721-Z.

6.3.11 When complete lock 2721-Z.

6.4 TASK 4: Isolate and Remove 2736-ZB A/C Unit #1 Equipment and Lines.

NOTE: 1 *The electrical isolation were be performed by work package 2Z-10-6780/M. See section 5.2 for isolation verification.*

NOTE: 2 *The refrigerant will be removed by work package 4R-254-665/W.*

6.4.1 **Remove** insulation from around the refrigerant lines using Work Package 2Z-10-03841 if not already removed. See photo #8 on page 24.

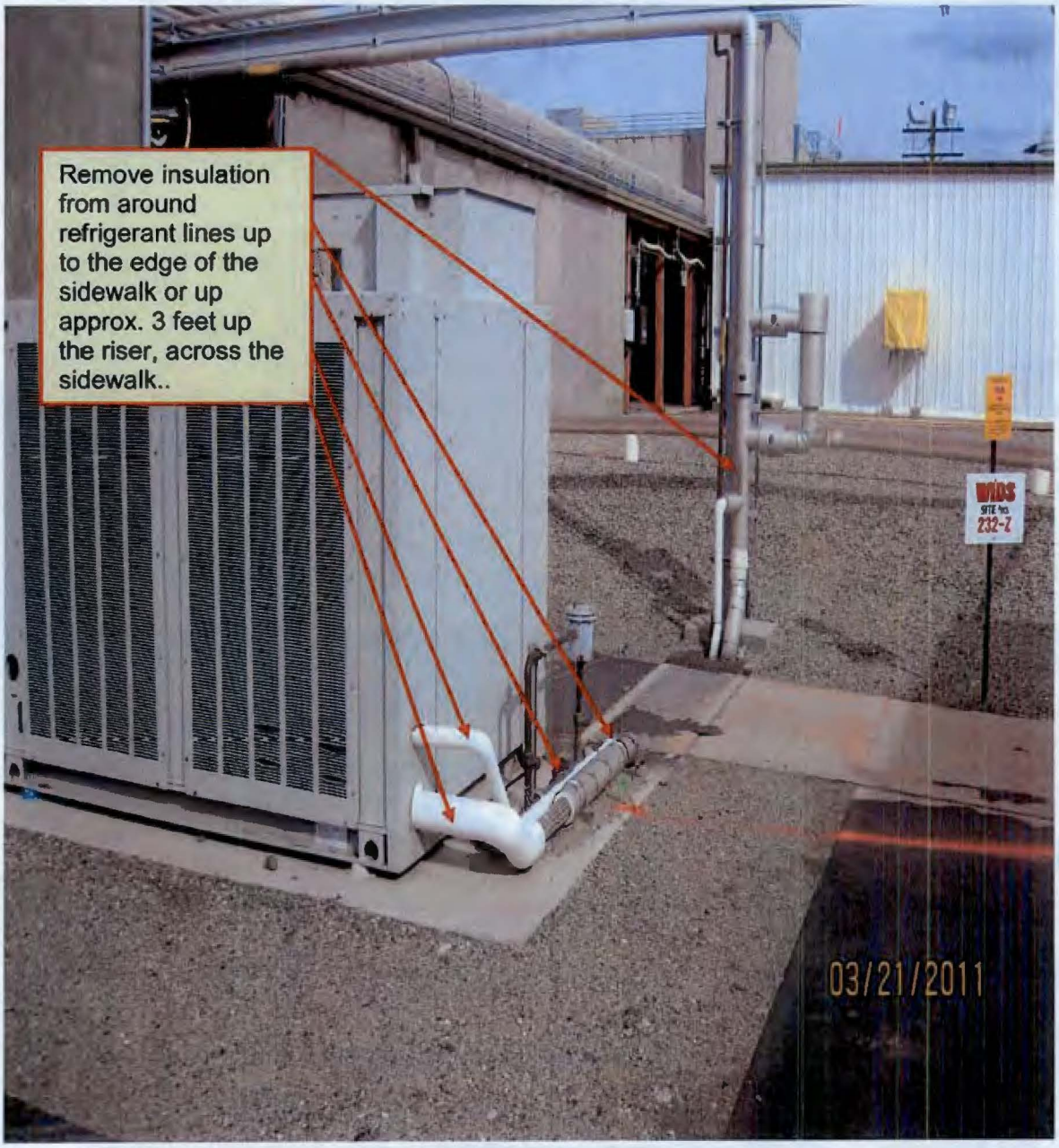
6.4.2 **Call** RES to **Reclaim/Recycle** Refrigerant from A/C Unit #1. Reference the above Note #2.

6.4.3 **Crimp** and **Cut** refrigerant lines at the HVAC unit and approx three feet up lines across the sidewalk and label as deactivated. Reference photo #8 on page 24.

Work Instruction

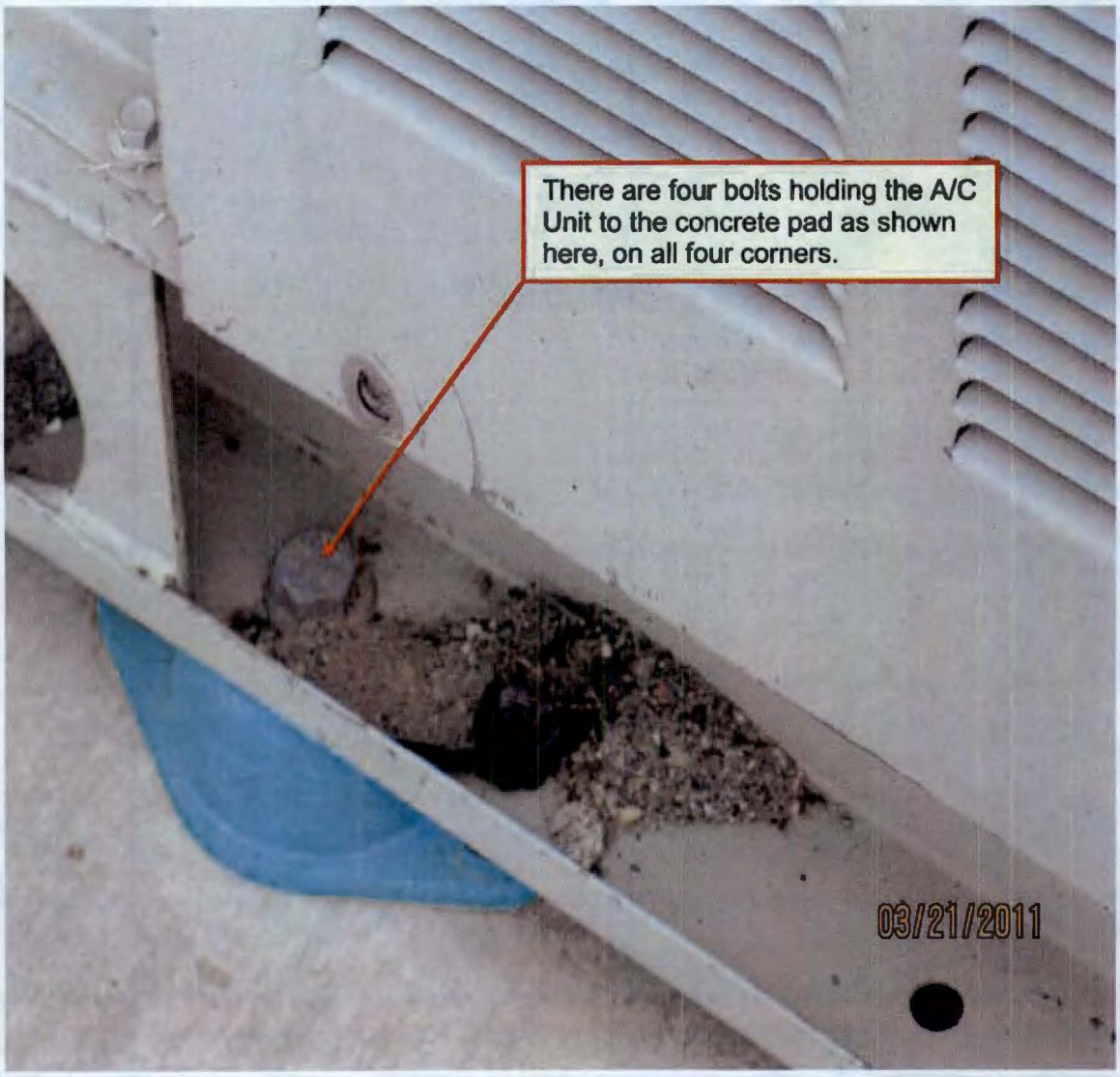
Remediate 2721-Z Diesel Tank

Photo #8



6.4.4 Unbolt A/C Unit #1. See photo 9 on page 25.

Photo #9

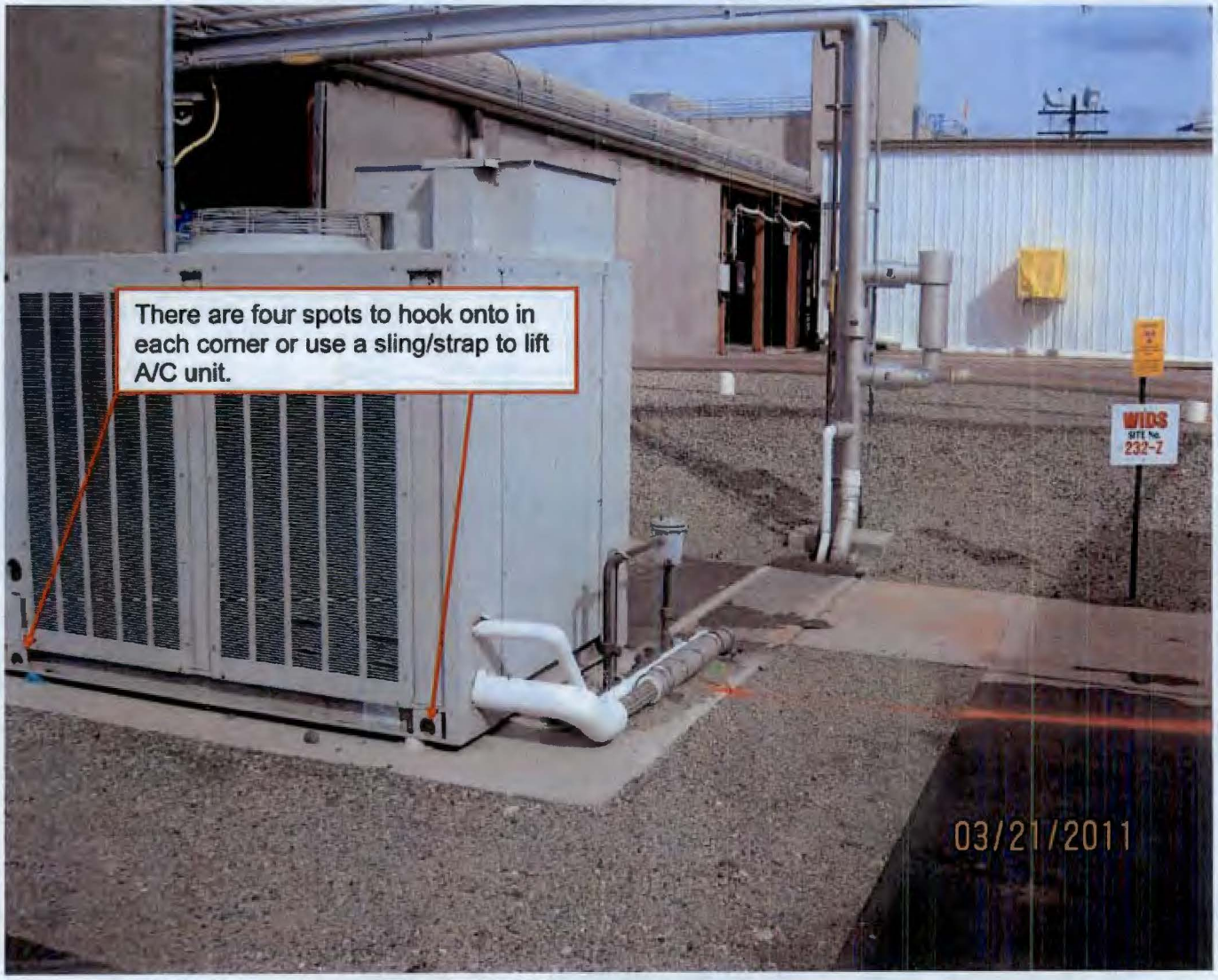


Work Instruction

Remediate 2721-Z Diesel Tank

6.4.5 **Remove** A/C Unit #1 from the pad reference DOE-RL-92-36 "Hanford Site Hoisting and Rigging Manual. See photo 10 on page 26. The approximate weight of A/C Unit #1 is 1041 pounds.

Photo #10



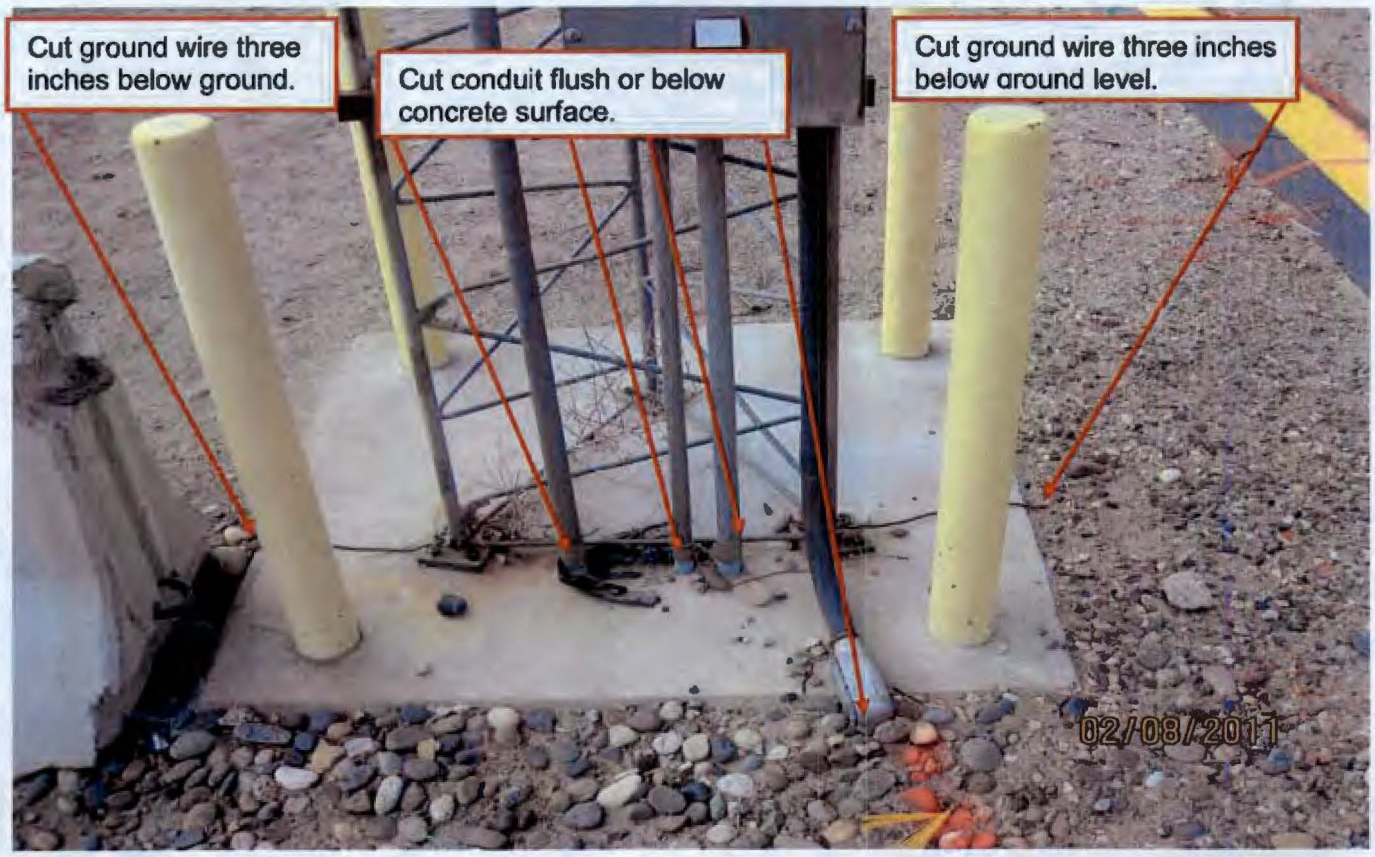
6.4.6 After the HVAC unit is removed, using wet methods **Break up** the concrete pad using a Jack Hammer or other approved means and remove.

6.5 TASK 5: Isolate and Remove Security Cameras and Tower 14.

NOTE: *The electrical isolation was performed in work package 2Z-10-6780/.M. See section 5.2 for isolation verification.*

6.5.1 **Cut** conduit flush or below the concrete surface. See photo #11 on page 27.

Photo #11



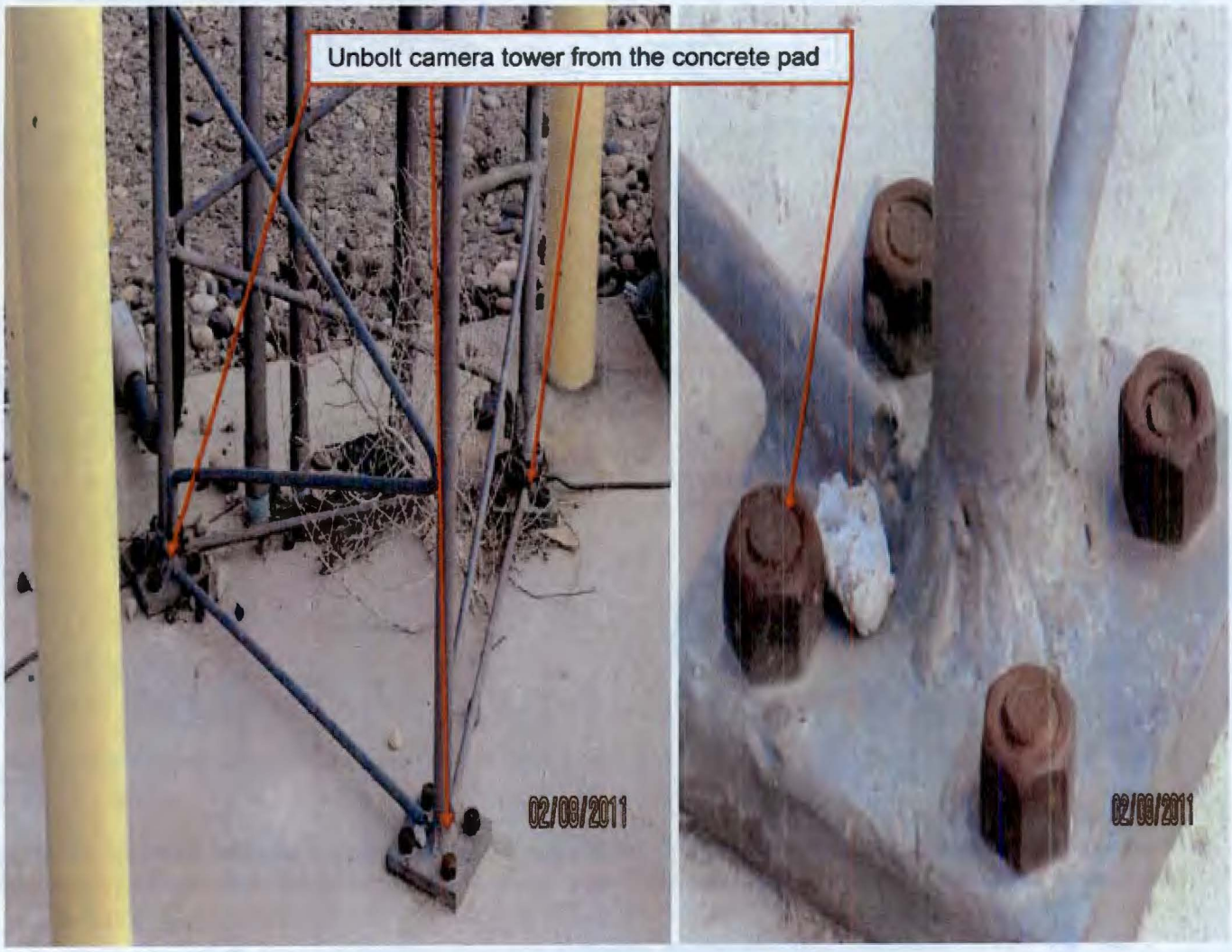
Work Instruction

Remediate 2721-Z Diesel Tank

6.5.2 **Using** an aerial lift or Scaffolding **Hook up** the crane to the camera tower.

6.5.3 **Unbolt/cut** bolts to the camera tower from the concrete pad. Reference photos #12 and 13 on page 28.

Photo #12 **Photo #13**



6.5.4 Lay the camera tower down on the ground, cut tower up in sections and place in ERDF container.

6.5.5 After tower has been removed **cut** protruding bolts flush with the concrete surface. Reference photo 14 on page 30.

NOTE: 1 *The concrete pad for the tower will remain in place, it measures 4 foot X 4 foot X 3 foot deep.*

NOTE: 2 *The bollards maybe filled with concrete.*

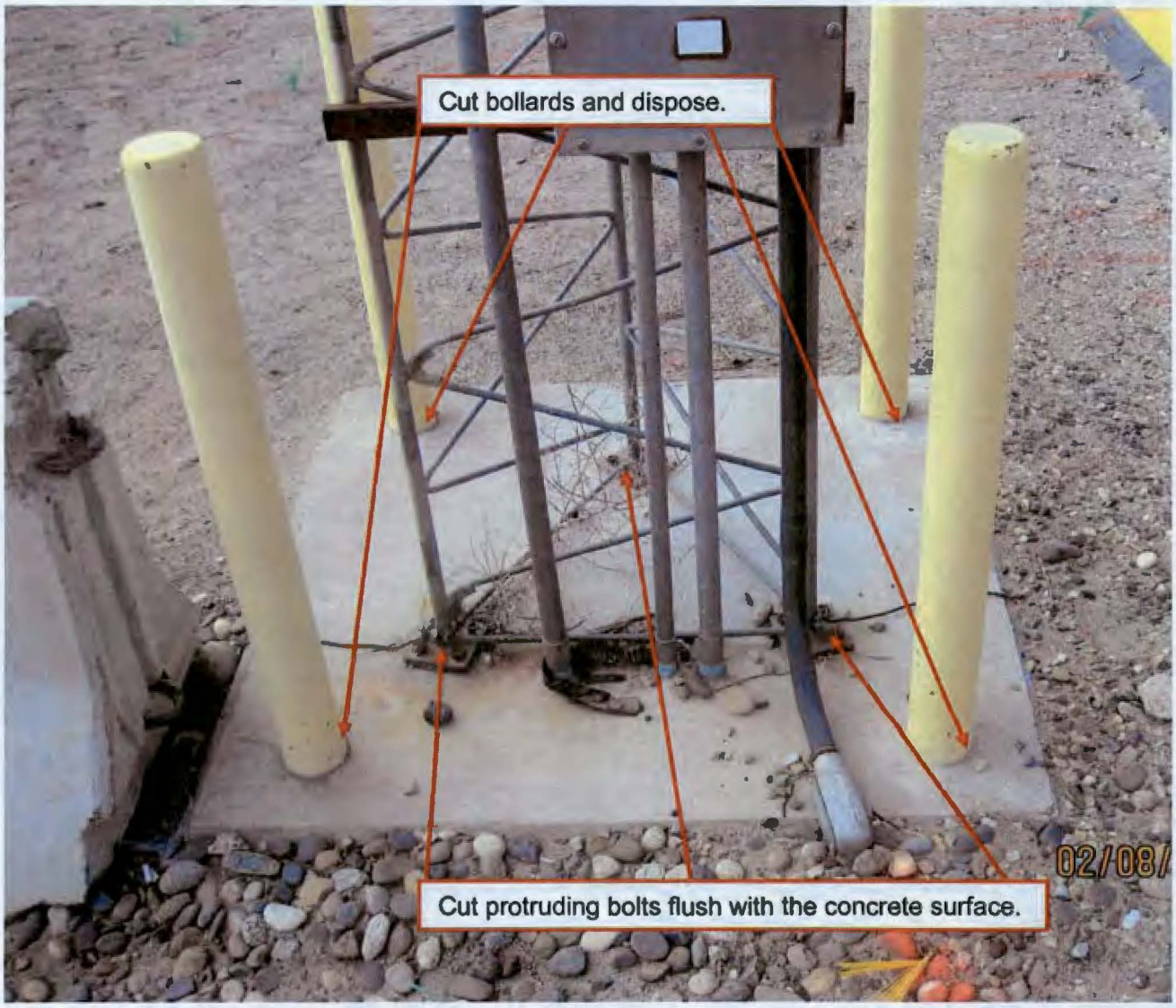
6.5.6 Cut bollards all the way around and break off. Tape any sharp edges. Reference photo #14 on page 30.

6.5.7 Seal the open ends of the conduit in the tower pad with 3M Fire Barrier CP 25WB+ Caulk MSDS #035627D. Reference photos #11and 14 on pages 27 and 30.

Work Instruction

Remediate 2721-Z Diesel Tank

Photo #14



6.6 TASK 6: Digging and removing supply and return fuel lines.

NOTE: *The electrical isolations were be performed by work package 2Z-10-6780/M. See section 5.2 for isolation verification.*

6.6.1 At building 2721-Z, place a catch pan and absorbent pads and plastic down under the supply and return lines entering the building. Reference photo #15 on page 32.

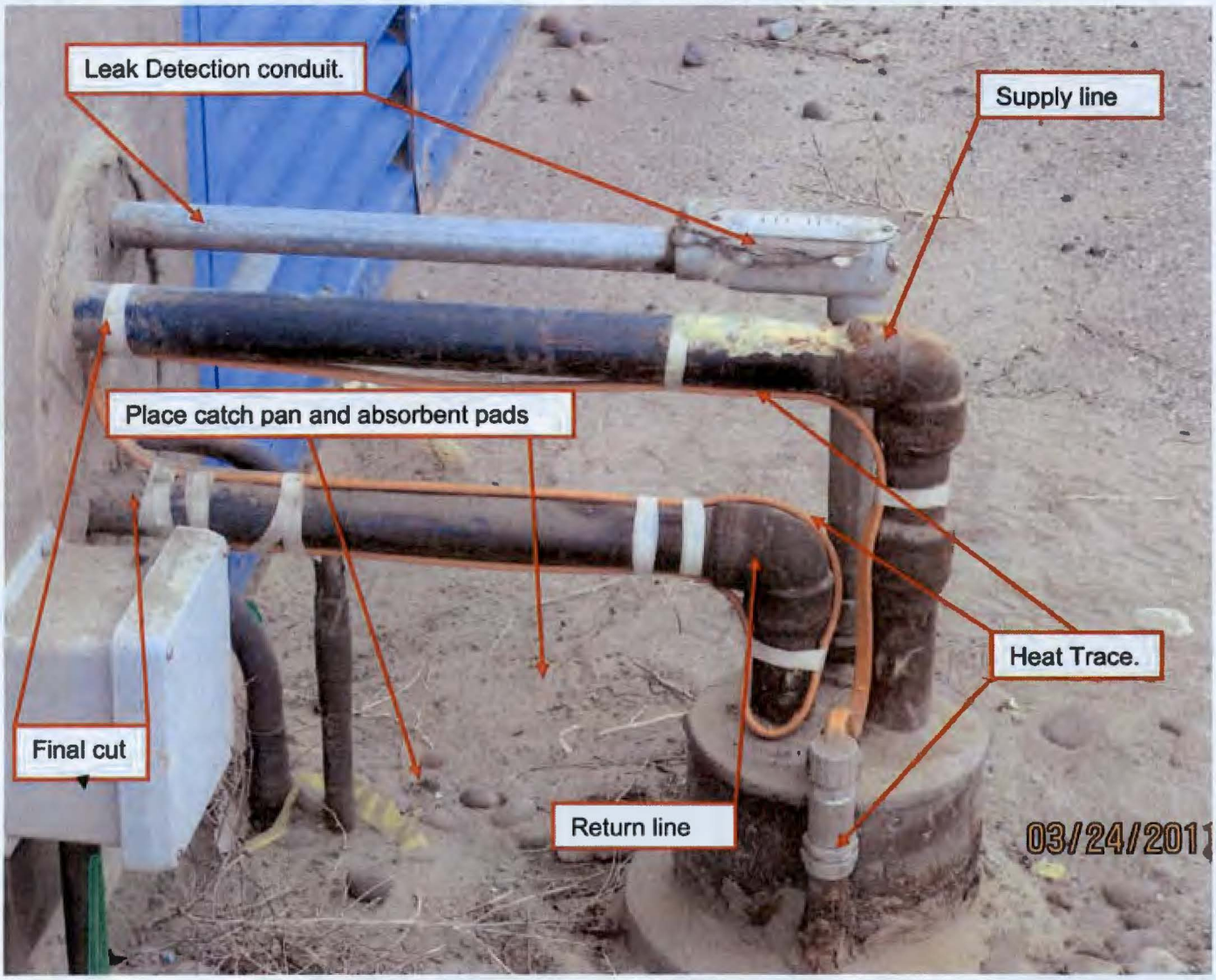
6.6.2 Using a band saw **Cut** supply and return lines as close to the building as possible. Reference photo #15 on page32.

- **Contact** IH for any monitoring requirements.

Work Instruction

Remediate 2721-Z Diesel Tank

Photo #15



NOTE: *You may have to cut the supply and return lines a couple of times to install the expandable plugs.*

6.6.3 Label the supply and return lines as Deactivated per ZAP-000-002.

Work Instruction

Remediate 2721-Z Diesel Tank

6.6.4 Cut leak detection and heat trace conduit when cutting the supply and return lines. Seal the open end of the conduit going into building 2721-Z with 3M Fire Barrier CP 25WB+ Caulk MSDS #035627D.Reference photo #15 on page 32.

6.6.5 Insert expandable 1 ½ inch plugs for the supply and return lines, tighten/seal.

6.6.6 Perform rad surveys as required of the concrete and soil. Reference photo #16 on page 34.

CAUTION:

Supply and Return lines run directly underneath the concrete. Use caution when breaking up the concrete.

6.6.7 Break up concrete using wet methods and remove.

6.6.8 Using wet methods Use the guzzler or hand excavate the supply and return lines all the way back to the pump pit. Reference photo #16 on page 34.

6.6.9 Cut and remove the supply and return lines placing catch basin/absorbent pads under were the cuts will be made. Continue until both the supply and return lines have been removed up into the pump pit.

6.6.10 Take one soil sample every 50 feet or as directed by the ECO.

6.6.11 Back fill at risk per PFP ECO. Reference photo 16 on page 34.

- This would be based on visual inspection and on consultation with UST contracted Personnel.

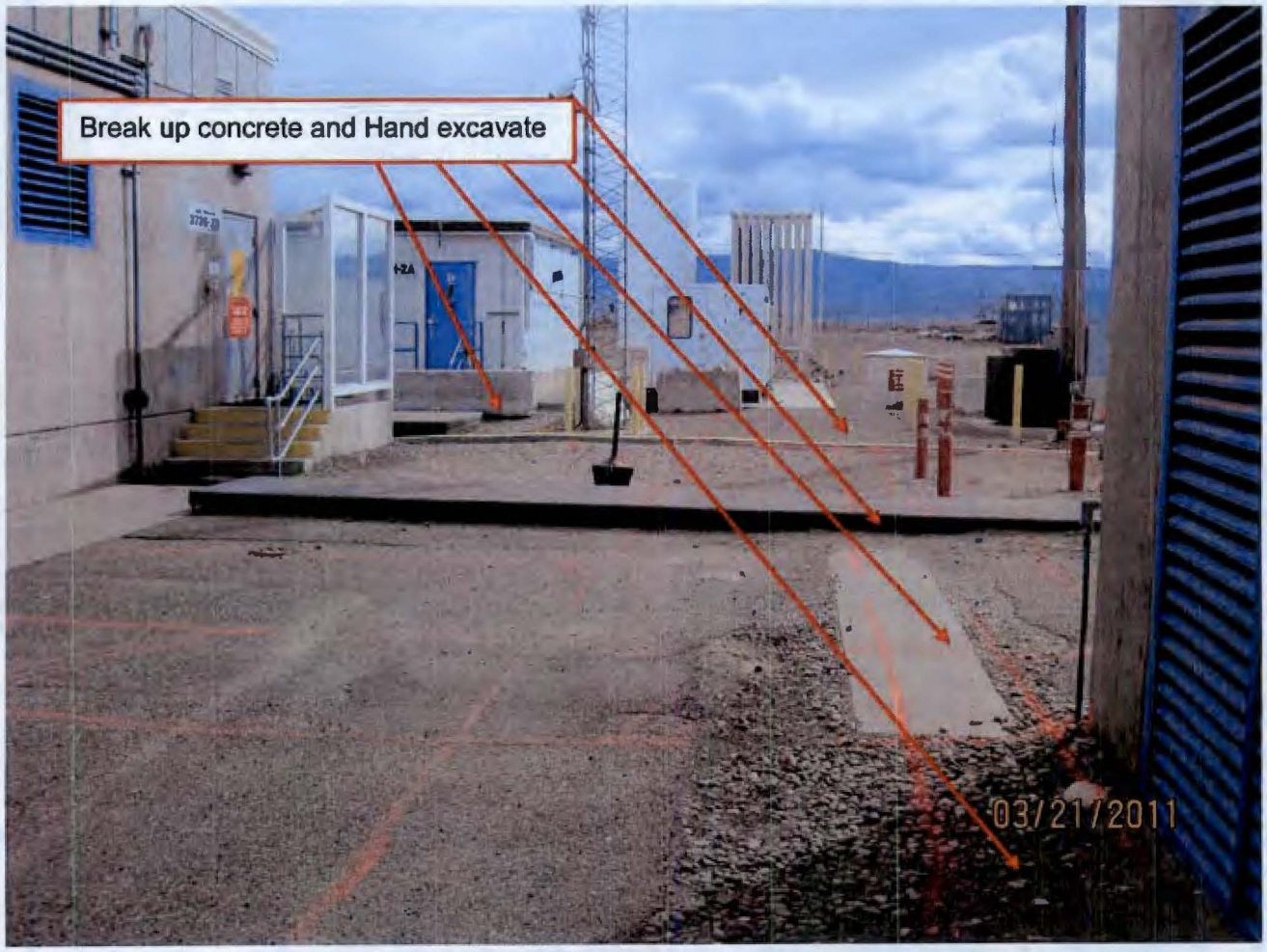
ECO_____ / _____ / _____

Print Signature Date

Work Instruction

Remediate 2721-Z Diesel Tank

Photo #16



6.6.12 **Prior** to removing the pump pit cover, **perform** a rad survey of the cover.

6.6.13 **Remove** the pit cover.

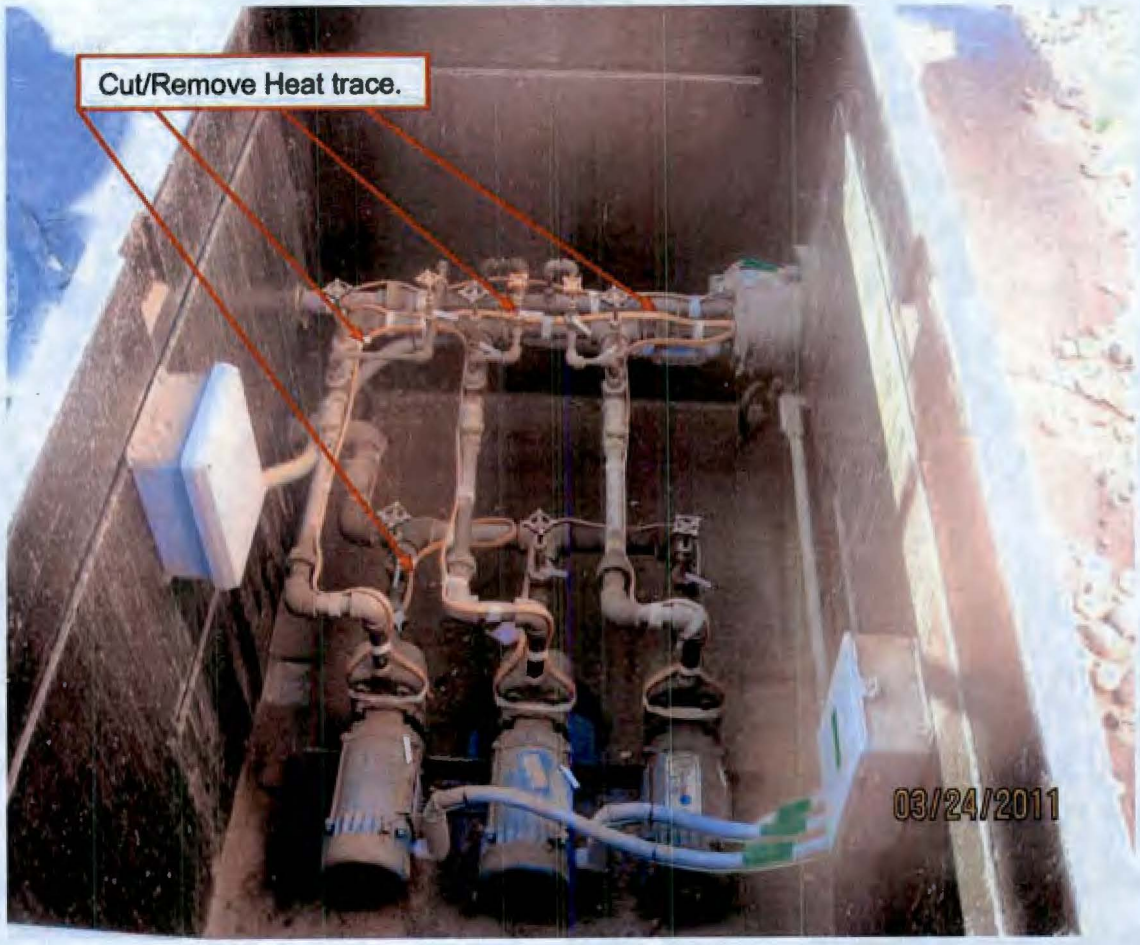
Work Instruction

Remediate 2721-Z Diesel Tank

6.6.14 Prior to entering the pump pit contact IH to access non permit confined space (CS #113) relative to activity. Reference Confined Space Hazard Identification form in Appendix 3. See SME contact list in appendix 7.

6.6.15 Cut/Remove Heat trace as needed to remove all piping/fittings. Reference photo #17 on page 35.

Photo #17



Work Instruction

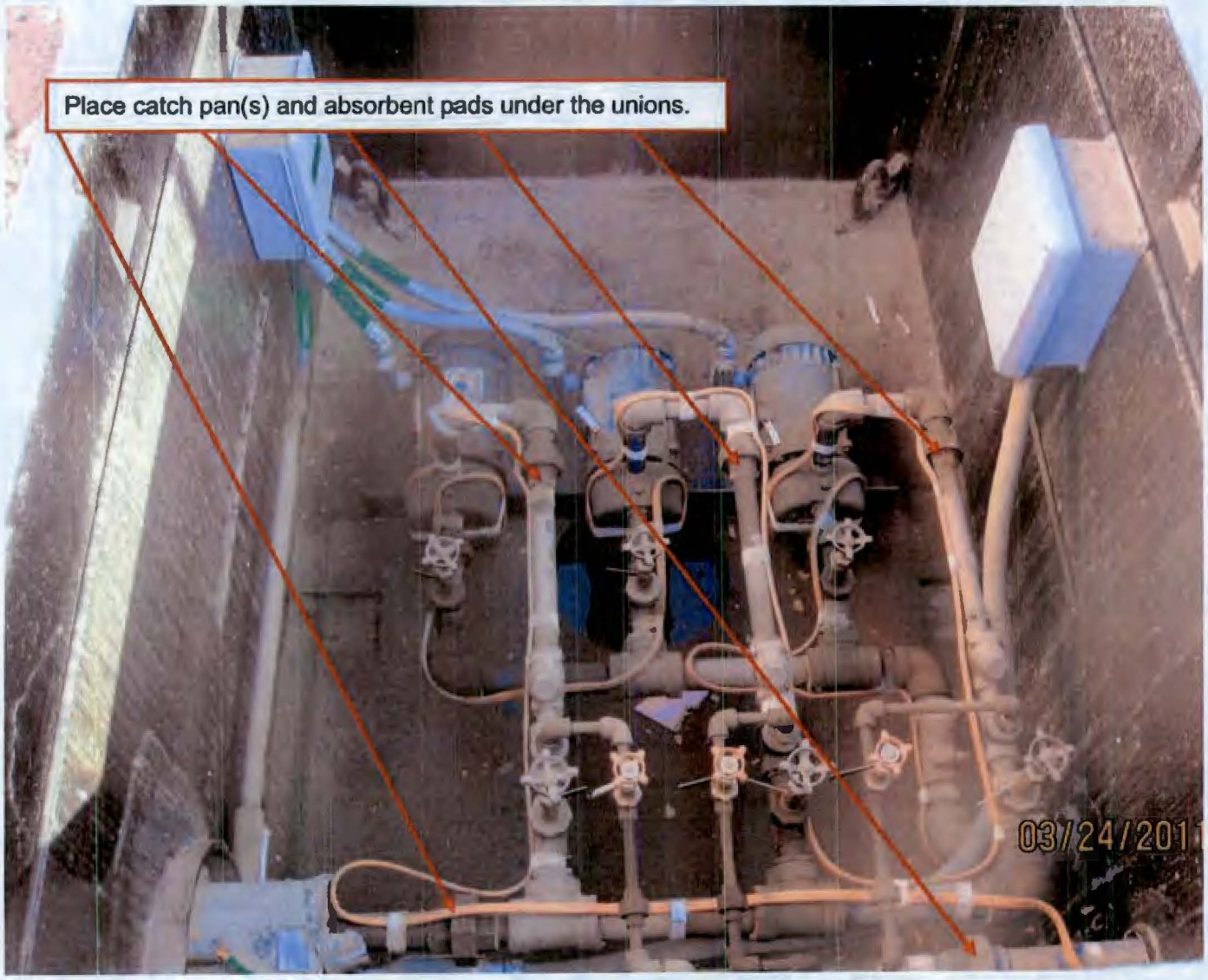
Remediate 2721-Z Diesel Tank

6.7 TASK 7: Remove Pumps and Equipment in Pump Pit and the Pump Pit.

NOTE: *The electrical isolations were be performed by work package 2Z-10-6780/M. See section 5.2 for isolation verification.*

6.7.1 Place catch pan(s) and absorbent pads under the unions. Reference photo #18 on page 36.

Photo #18



6.7.2 Unscrew the unions and drain any residual Diesel into catch pan(s).

Reference photo #18 on page 36.

6.7.3 **Open** by-pass valves to drain any residual fuel back into the tank. Reference photo 19 on page 37.

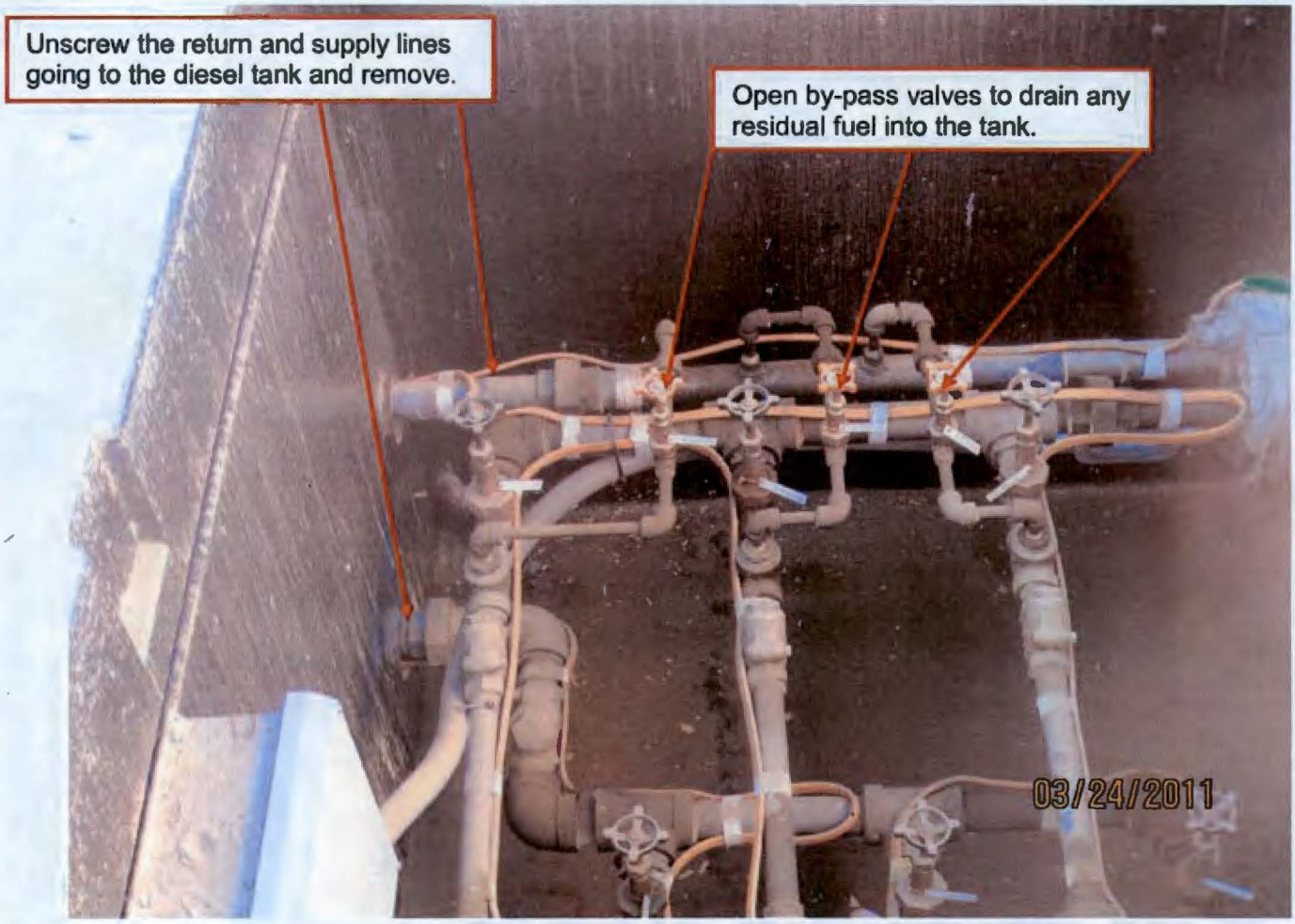
6.7.4 **Dismantle** the piping in the pump pit, keeping a catch pan and absorbent pads under each piece being unscrewed. Reference photo #18 on page 36.

6.7.5 After all the piping/fittings have been removed, **unscrew** the return and supply lines going to the diesel tank and remove. Reference photo #19 on page 38.

Work Instruction

Remediate 2721-Z Diesel Tank

Photo #19



Work Instruction

Remediate 2721-Z Diesel Tank

HP 6.7.1 **Inspect** picking eyes prior to hooking up and lifting the pump pit.

Contact (Wayne Adamek at 373-4197 or Bill Magruder at 373-6741).

See SME contact list in Appendix 7. Reference photo #20 on page 39.

Circle appropriate answer: Accept Reject

DA_____ / _____ / _____

Print Signature Date

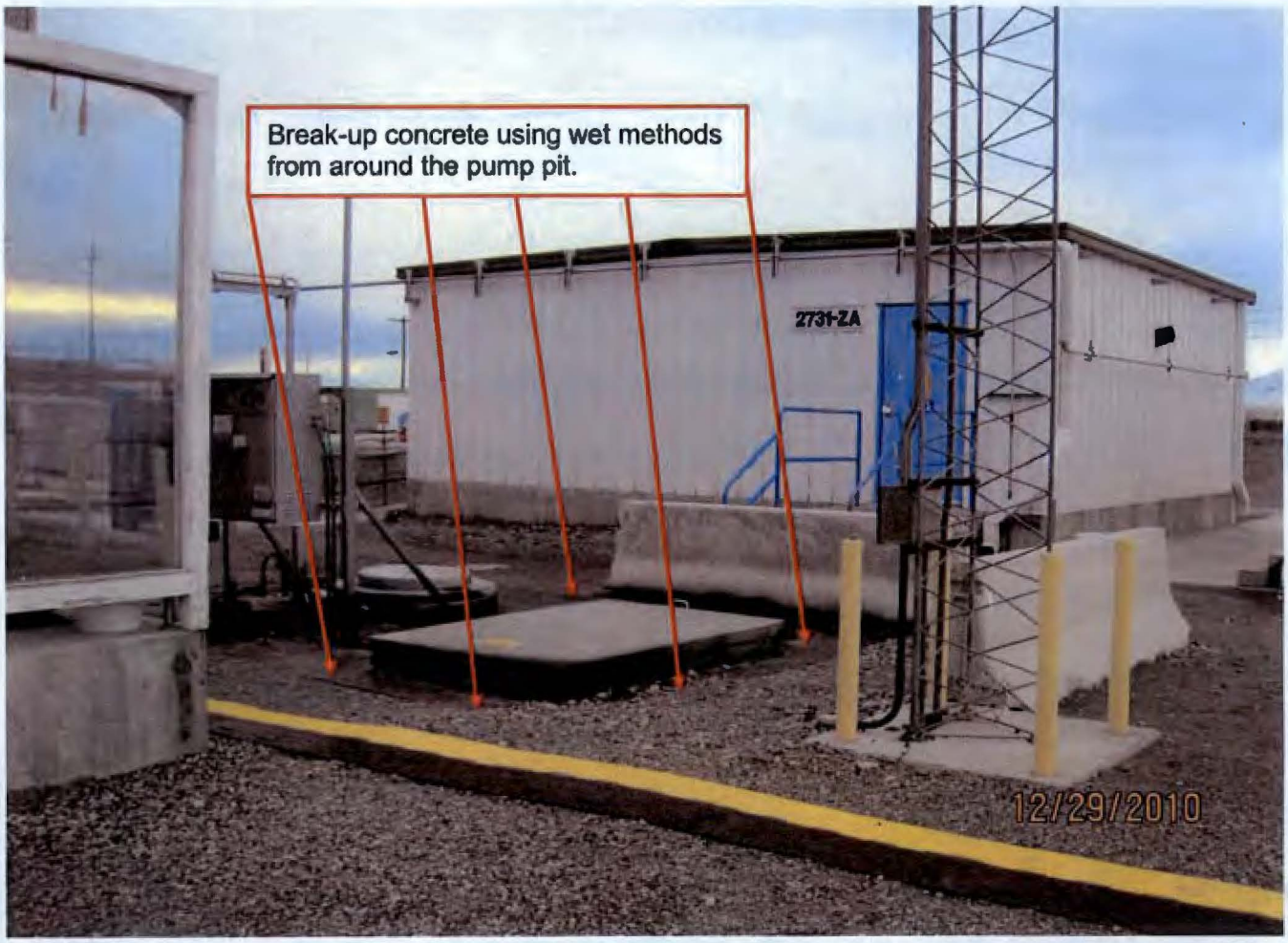
Photo #20

6.7.2 If rejected, using wet methods break up the pump pit along with step 6.7.4.

6.7.3 **If accepted Replace** pump pit cover to keep debris from falling inside the pump pit.

6.7.4 **Break-up** the concrete using wet methods from around the pump pit with a jack hammer or a backhoe with jack hammer attachment. Reference photo #21 on page 41.

Photo #21



6.7.5 **Excavate** soil from around the pump pit either by hand digging or using the guzzler.

6.7.6 **Remove** pump pit cover and dispose per waste planning checklist.

6.7.7 **Remove** the pump pit and set inside an ERDF container. A track hoe will break it up at a later time. Reference DOE-RL-92-036 Hanford Site Hoisting and Rigging Manual.

6.8 TASK 8: Removal of concrete pad over Diesel Tank and tank excavation.

NOTE *The electrical isolations were be performed by work package 2Z-10-6780/M. See section 5.2 for isolation verification.*

NOTE *The concrete pad above the diesel tank is a Fixed Contamination Area (FCA-Z-039).*

6.8.1 **Cut** vent line to approximately 6 feet above the concrete.

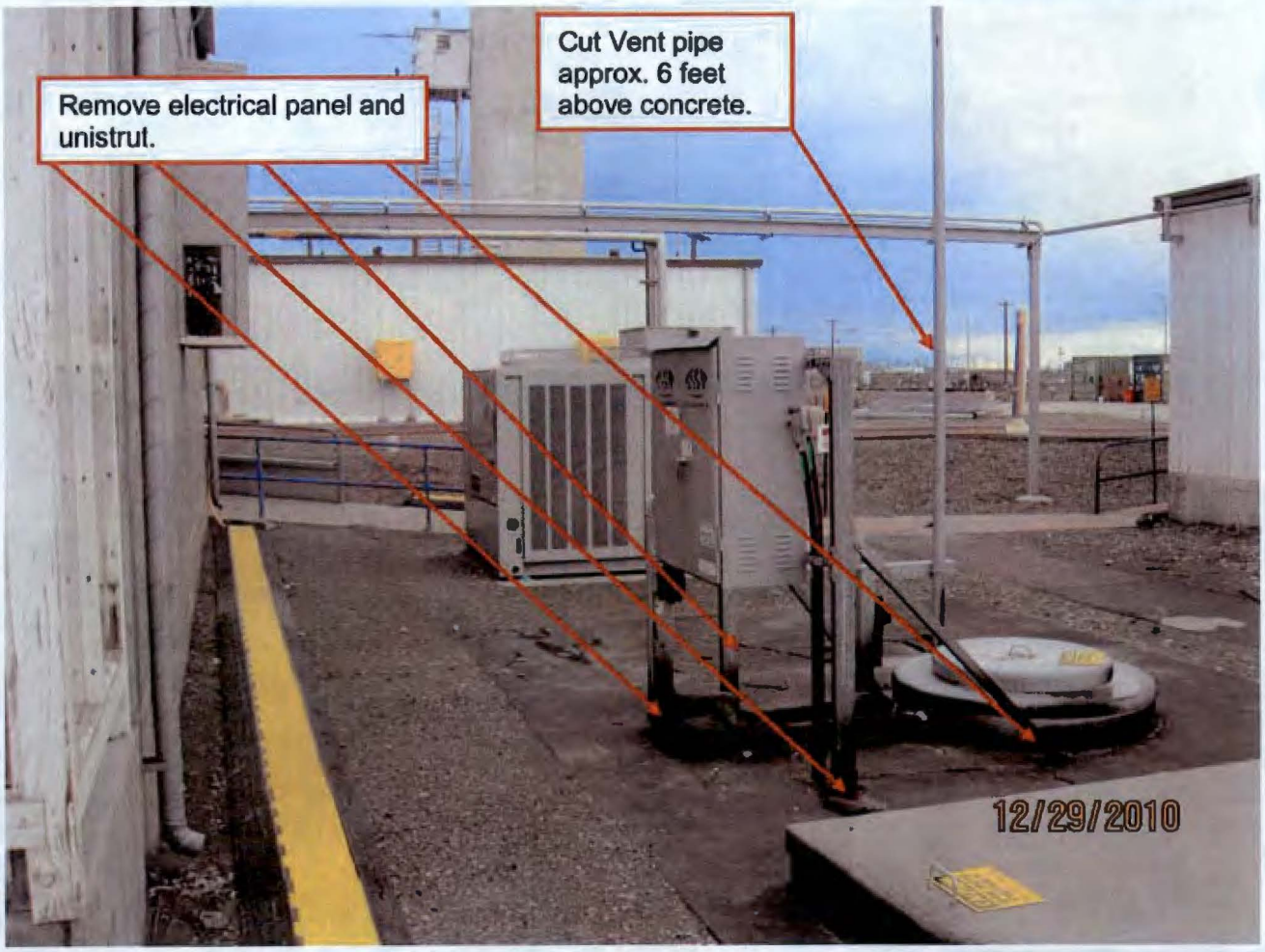
6.8.2 **Perform** periodic rad surveys of the FCA area as it is removed and remove from the FCA Log Book when completed.

6.8.3 **Remove** the electrical panel and unistrut from the concrete pad over the Diesel Tank. Reference photo 22 on page 43.

Work Instruction

Remediate 2721-Z Diesel Tank

Photo #22



Work Instruction

Remediate 2721-Z Diesel Tank

6.8.4 **Break-up** the concrete pad using wet methods from above the diesel tank with a jack hammer or a backhoe with jack hammer attachment. Reference photo #23 on page 44.

Photo #23

6.8.5 **Remove** concrete rubble and package per the Waste Planning Checklist.

6.8.6Excavate soil using wet methods over the Diesel Tank using the regulated Guzzler Vacuum truck and/or hand dig below spring line of tank. To remove the diesel tank reference WPE-2Z0907547-001-00 in appendix 6. Reference photos #22 and #23 on pages 43 and 44.

- **Use** the Guzzler Attachment form located in Appendix 3 for surveying for contamination while excavation is being performed.
- **When** excavating refer to the Scan Data Report (Located in appendix 6) for pipe, conduit, etc. that may be in the area of the excavation.
- **If** any other lines, conduit etc. are encountered that are not shown on the scan data report, stop work, place in a safe condition and notify the FWS.

6.8.7 If contamination is found, **Stop** excavation with the Guzzler and finish excavation by hand and use the Guzzler attachment for surveying for contamination.

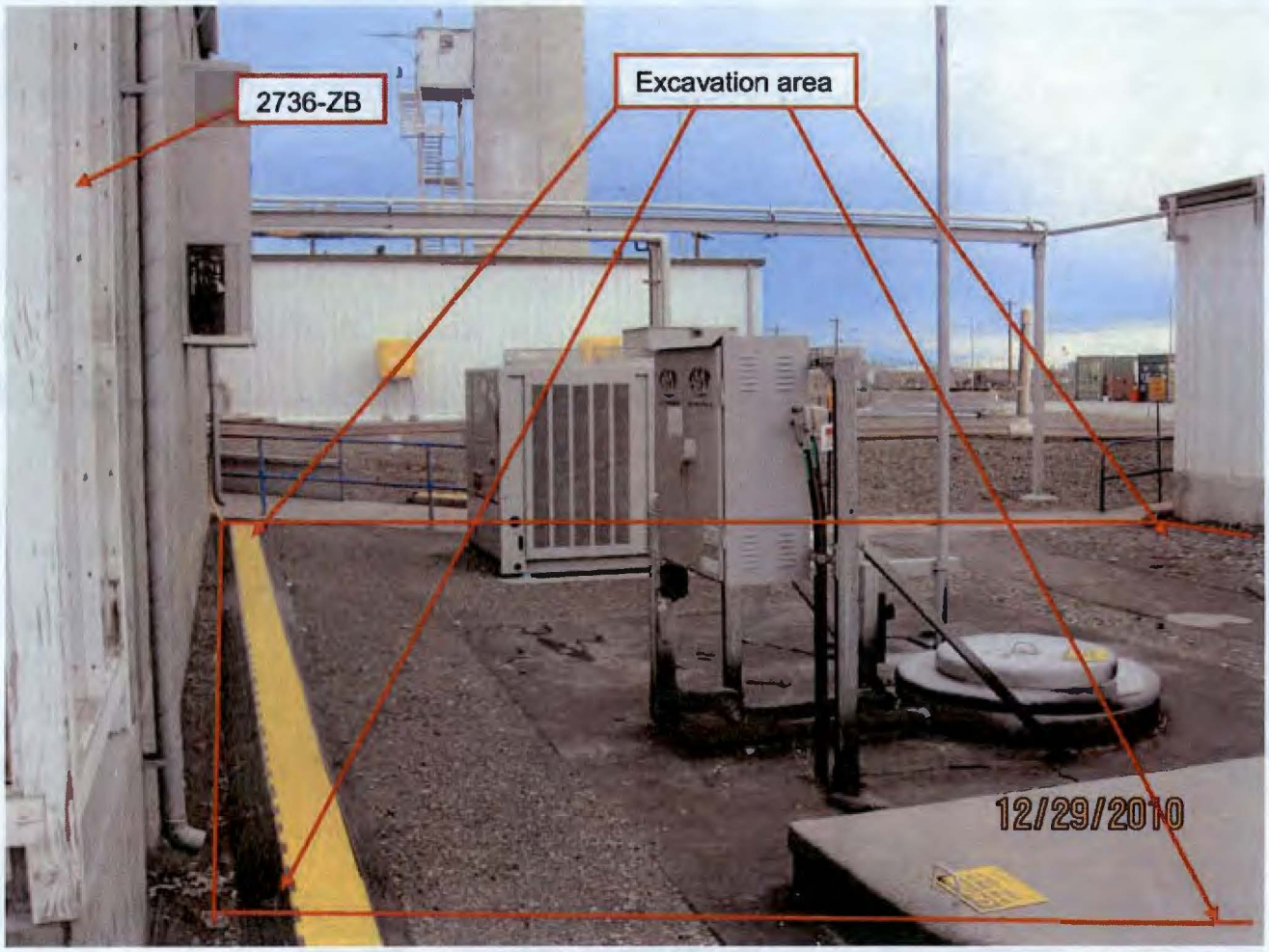
- When **hand digging,** a **backhoe** with front end loader may be used to place soil in the bucket and then dumped into the ERDF Container.
- Contact IH to perform any air monitoring that me be required.

Work Instruction

Remediate 2721-Z Diesel Tank

6.8.8 When **excavating** on the 2736-ZB side of the tank, excavate no more than two feet down along the building then start the 1 ½ Horizontal to 1 Vertical slope. Reference WPE 2Z0907547-001-00 in Appendix 6. Reference photo #24 on page 46.

Photo #24

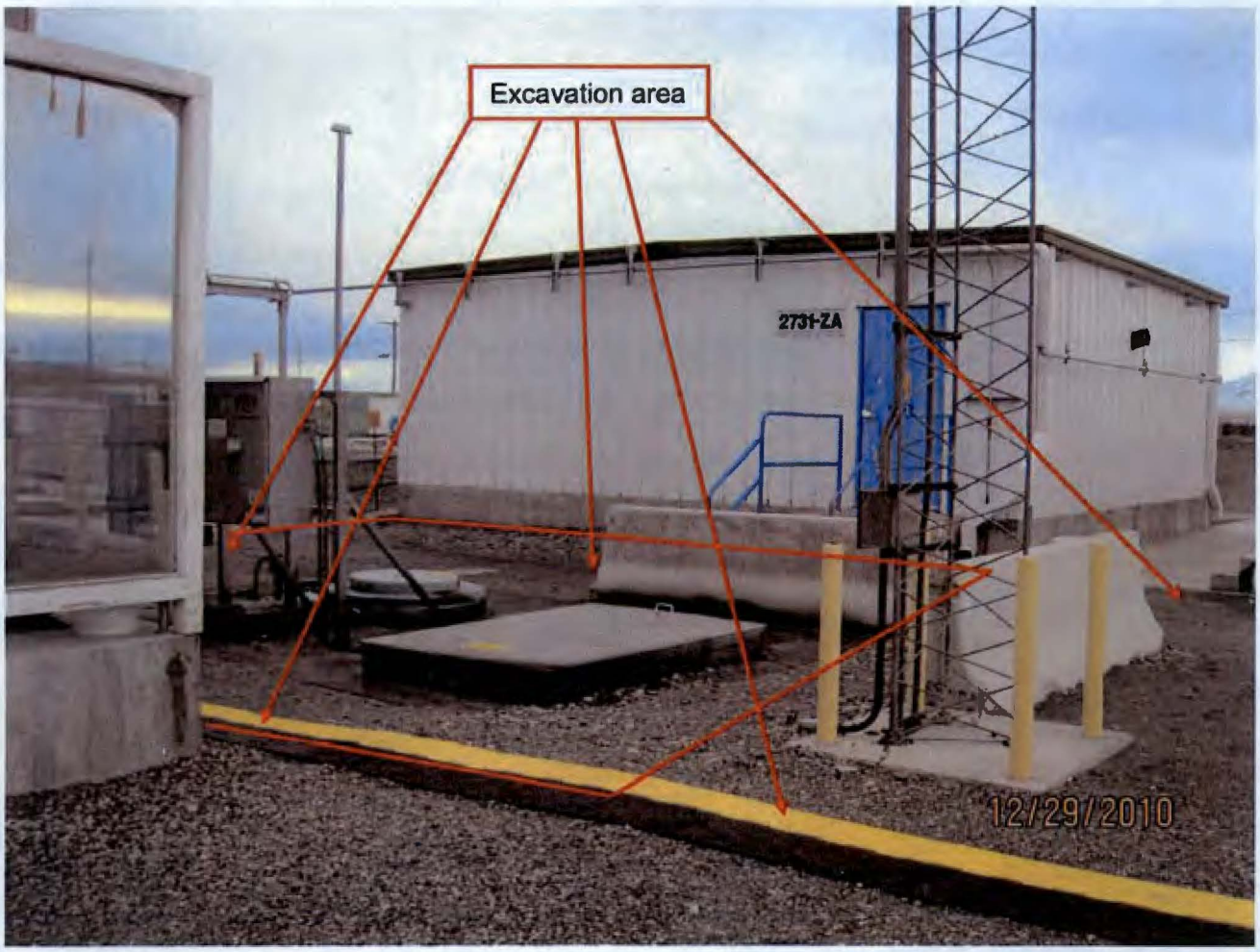


Work Instruction

Remediate 2721-Z Diesel Tank

6.8.9 When **excavating** on the 2731-ZA side of the tank start the 1 ½ Horizontal to 1 vertical slope at the base of the building. Reference WPE 2Z0907547-001-00 in Appendix 6. Reference photo #25 on page 47.

Photo #25



6.8.10 When **excavating** on the East and West ends of the tank reference the WPE 2Z0907547-001-00 in Appendix 6.

6.8.11 Set up temporary containment area for diesel tank.

6.8.12 Excavate soil

6.8.13 When the bottom of the Fiberglass Riser Housing is exposed, remove the housing, perform the following per FWS direction.

- **Remove** insulation using Work Package 2Z-10-03841
- **Remove** risers.
- **Cap** or **Plug** openings.

HP **6.8.14** When the lifting Lugs are **exposed** on the diesel tank contact (Wayne Adamek at 373-4197 or Bill Magruder at 373-6741), to **Inspect** picking Lugs. See SME contact list in Appendix 7.

Circle appropriate answer: Accept Reject

DA_____ / _____ / _____

Print Signature Date

6.8.15 If **accepted**, excavate tank down to the spring line.

6.8.16 If **rejected** continue digging to bottom of diesel tank.

6.8.17 Once **excavation** is complete, lift the diesel tank out of the ground. Reference DOE-RL-92-036 Hanford Site Hoisting and Rigging Manual.

6.8.18 **Set** tank down in a pre-determined containment area.

6.8.19 **Roll** tank on its side to gain access to the manhole cover.

6.8.20 **FWS** contact IH prior to cutting ends of diesel tank to discuss any additional needs for PPE.

6.8.21 **Cut** the hemispherical ends on each end of the tank approximately 4 foot X 4 foot per FWS direction.

6.8.22 **Remove** manhole cover.

6.8.23 Using a peristaltic pump **remove** any remaining fuel inside the tank into approved containers. Package per Waste Planning Checklist Diesel Tank-03 in Appendix 3.

6.8.24 **FWS** contact IH prior to entering the diesel tank to discuss any additional needs for PPE.

6.8.25 Using Simple Green, MSDS #069757 **clean/rinse** the interior of the diesel tank.

6.8.26 Using a peristaltic pump **remove** liquids from the diesel tank. Package per Waste Planning Checklist Diesel Tank-02 in Appendix 3.

6.8.27 Using rags wipe down the interior of the diesel tank. Package per Waste Planning Checklist Diesel Tank-01 in Appendix 3.

Work Instruction

Remediate 2721-Z Diesel Tank

6.8.28 Have the Certified UST Inspector **inspect** the interior of the diesel tank

6.8.29 Circle appropriate answer: Accept Reject

HP **UST Inspector**_____ / _____ / _____

Print Signature Date

6.8.30 **If rejected** repeat steps 6.8.25 and 6.8.26 until the tank is accepted.

6.8.31 **Place** Diesel Tank into a designated waste container.

6.8.32 **Dispose** of all waste per the Waste Planning Checklist.

6.8.33 **Perform** soil sampling soil under where the diesel tank as directed by the ECO.

6.8.34 **Backfill** excavation with clean fill dirt.

6.8.35 **Back fill** at risk per PFP ECO.

- **This** would be based on visual inspection and on consultation with UST Contracted Personnel.

ECO_____ / _____ / _____

Print Signature Date

6.8.36 When **backfilling** the excavation, refer to WPE-2Z0907547-001-00 for compaction of soil.

Work Instruction

Remediate 2721-Z Diesel Tank

7.0 WORK PACKAGE CLOSEOUT

7.1 PIC/FWS perform the following:

7.1.1 **Verify** by signing below that all tasks listed in this work document have been completed satisfactorily.

7.1.2 **Notify** the PFP Hazardous Material Coordinator upon completion of work so that the PFP Facility Chemical Vulnerability Assessment can be updated.

FWS_____ / _____ / _____

Print name Signature Date

7.2 Design Authority (DA) or Designee perform the following:

7.2.1 **Ensure** the actions identified on the Modification Impact Review sheet (if any), have been completed, prior to proceeding.

7.2.2 **Verify** by signing below, that through review and walkdown of the modification(s) on affected components the work has been completed as intended

DA_____ / _____ / _____

Print name Signature Date

7.3 **Return/Close** all permits, forms, checklists and reports to the appropriate organization or department.

PIC/FWS: _____ / _____ / _____

Print name / Signature / Date

SCAN DATA REPORT

Project No.:	Title: PFP-2721Z DIESEL TANK REMOVAL GROUND SCAN	Request No.: 111-138
		File No. : S2WZP013

Job No.:	Prepared by:	Date:	Reviewer:	Page
PRC/CACN 301895-DP20	Rand Taylor	1/5/11		1 of 4

DESCRIPTION OF WORK:

Performed a ground scan on the south west side of the 2736 -ZB Blgd to support the removal of the underground diesel tank. Scanned the area as highlighted on the sketch.

DISTRIBUTION	SDR	SKETCH	DWG
Survey File	OR	OR	
R.Krebs	1	1	
B.Magruder	1	1	
N.Parsons	1	1	
S.Hamblin	1	1	
J.Cozad	1	1	

DATE OF FIELD INVESTIGATION: 1/5/11

Weather: Temp 18°F Wind 2 MPH

☐ Cloudy ☐ Clear ☒ P. Cloudy ☒ Fog

Soil Conditions: ☐ Rocky ☐ Sandy ☐ Wet ☒ Dry

Depth of Investigation 8 feet

Equipment Used:	Required Functional Checks Current/Completed
x 50/60 Hz detector (for energized lines)	☒
x Radio Frequency Electromagnetics (RF)	☒
x Ground Penetrating Radar (GPR)	☒
____ Other (identify)	☐

GPR Antenna(s) Used: ☐ 1000 MHz ☐ 500 MHz ☐ 400 MHz ☒ 300 MHz

Documentation Provided: Email w/Scan Boundary Sketch H-2-829352, Sht.1, Rev.1 H-2-829360, Sht.1, Rev.1 H-2-829362, Sht.1, Rev.2

Limits of Investigation: Performed a ground scan on the south west side of the 2736-ZB Bldg to support the proposed removal of the diesel tank.

EQUIPMENT LIMITATIONS:

1. Objects made of concrete, clay pipe, PVC pipe, and fiberglass pipe are generally not detectable.
2. The transducers have a horizontal scanning limit to existing structures: the 1000 MHz is within 6 in. of an existing structure; the 500 MHz is within 1 ft. of an existing structure; the 400 MHz is within 1 ft. of an existing structure; and the 300 MHz is within 3 ft. of an existing structure.

Discussion of Findings: Client is advised that subsurface location scanning is not 100% accurate. Client is herby notified that equipment limitations, soil /concrete conditions, utility congestion and other factors beyond Contractor control may cause subsurface objects to be missed or incorrectly located. Client assumes such risk. It is critical that Client delegate responsibility to its employees, staff and management for application of safety controls during excavation, cutting or drilling activities to prevent physical injury or property damage. Contractor shall not be liable for any injuries or damages arising from or caused by subsurface objects.

Note, All located U.G. Lines/Obstructions were marked with pink marking paint on the ground.

PFP

FIELD SURVEY NOTES

Date 12-5-11

File No. S 0 W Z P 0 1 3

Title 2701-Z Diesel Tank Removal - Scan

Req. No. 111-138

Crew Taylor Bandser

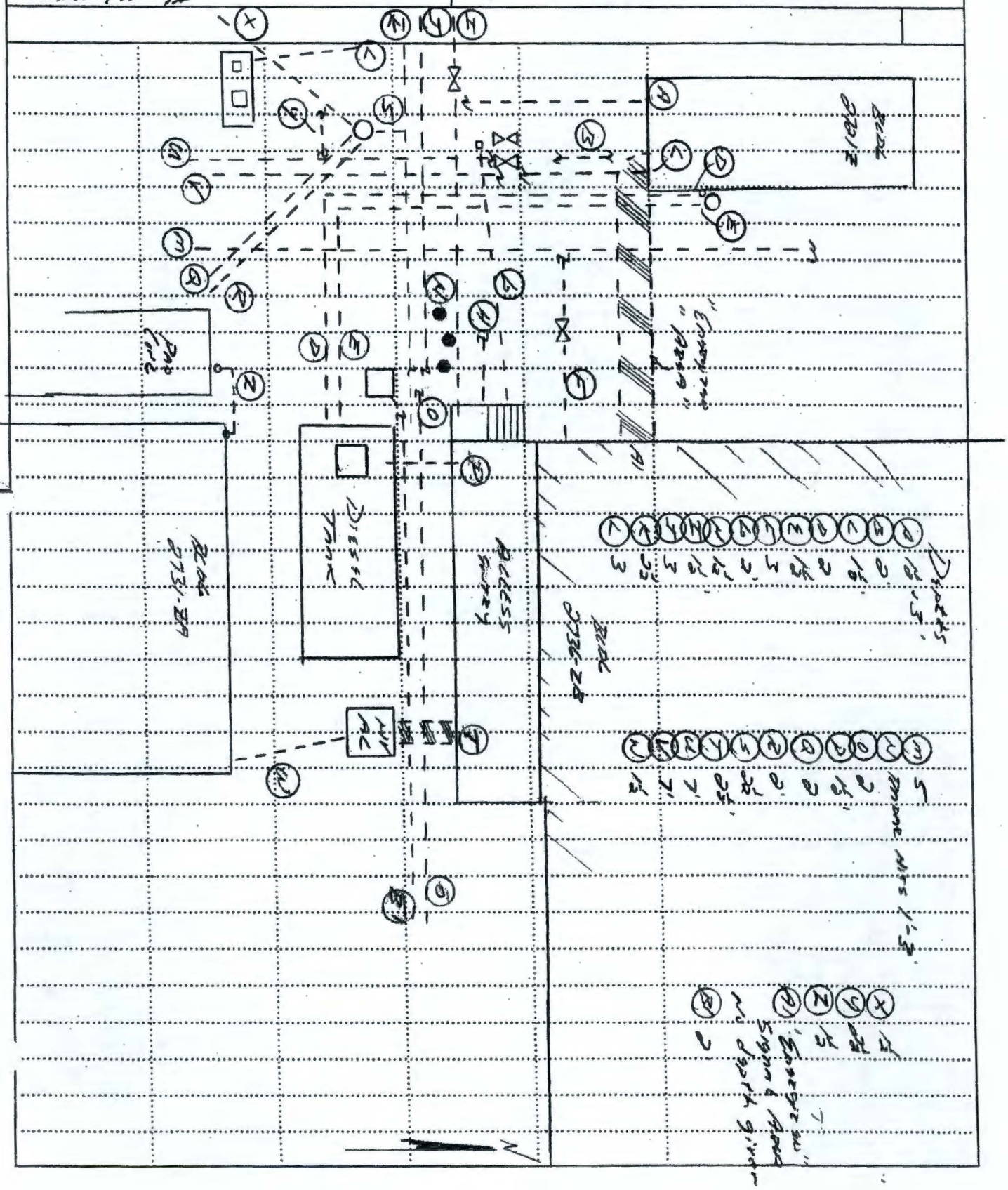
Weather Clouds

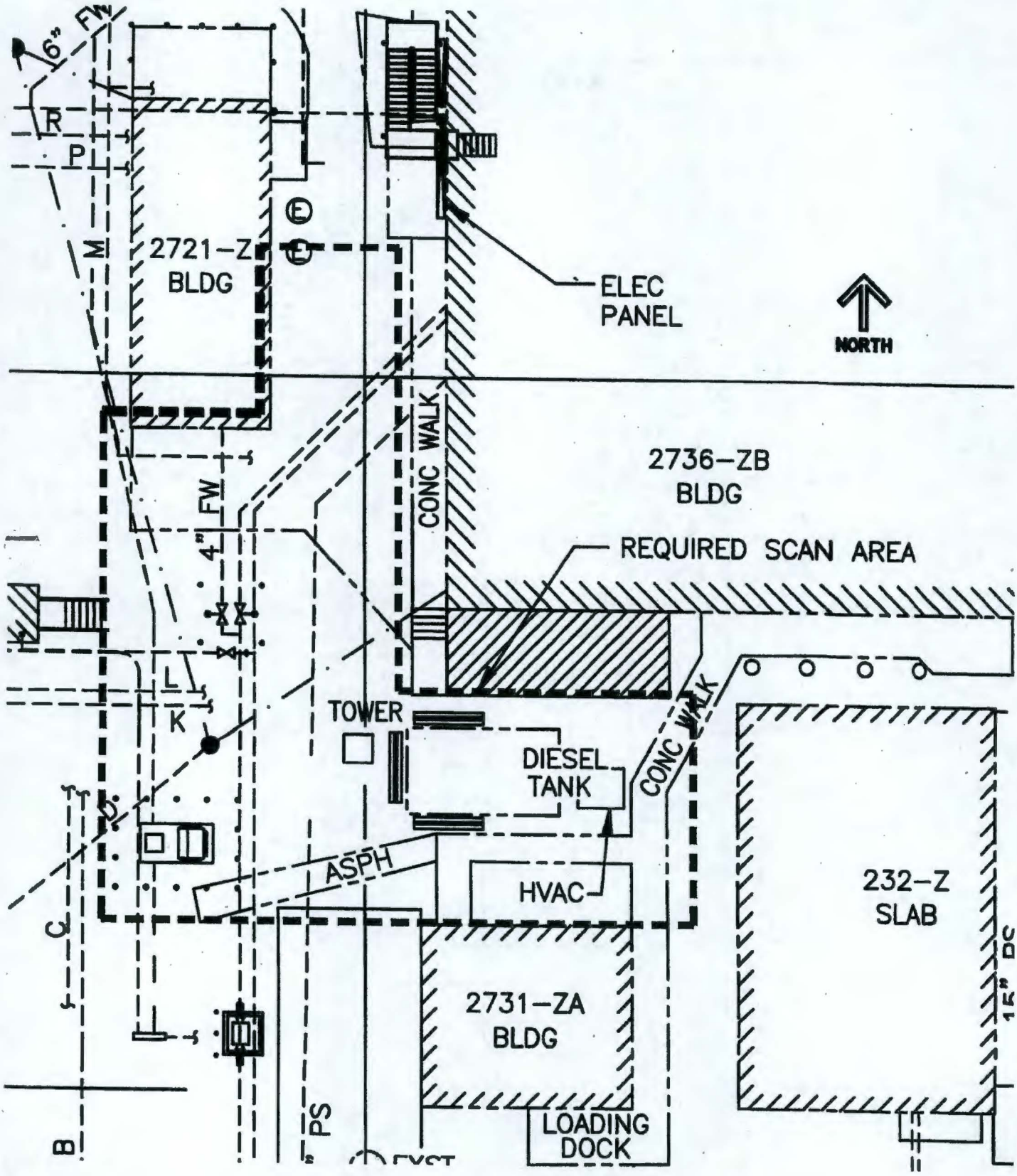
Inst. Sokkia Set

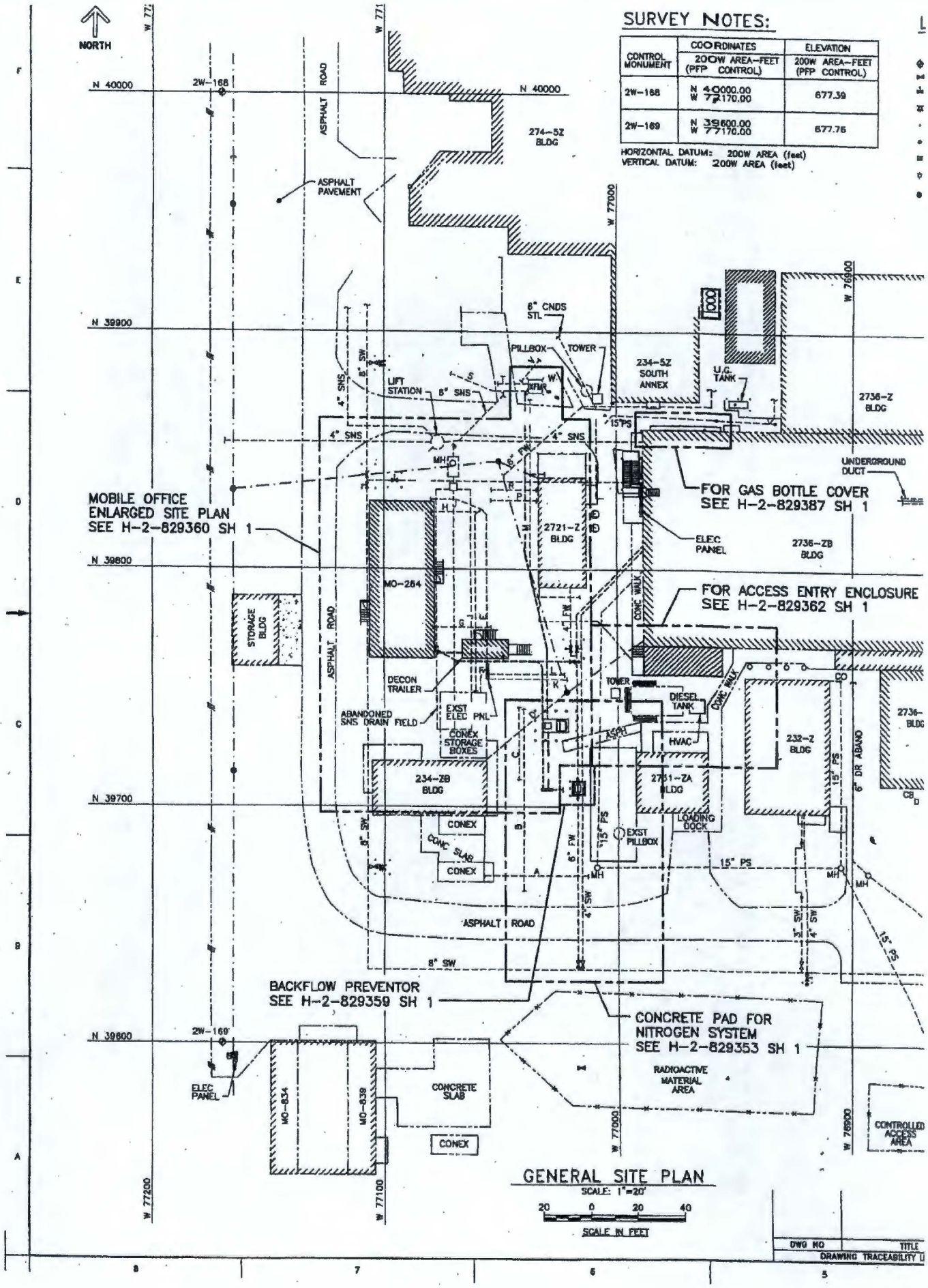
Temp. 15°

Bar.

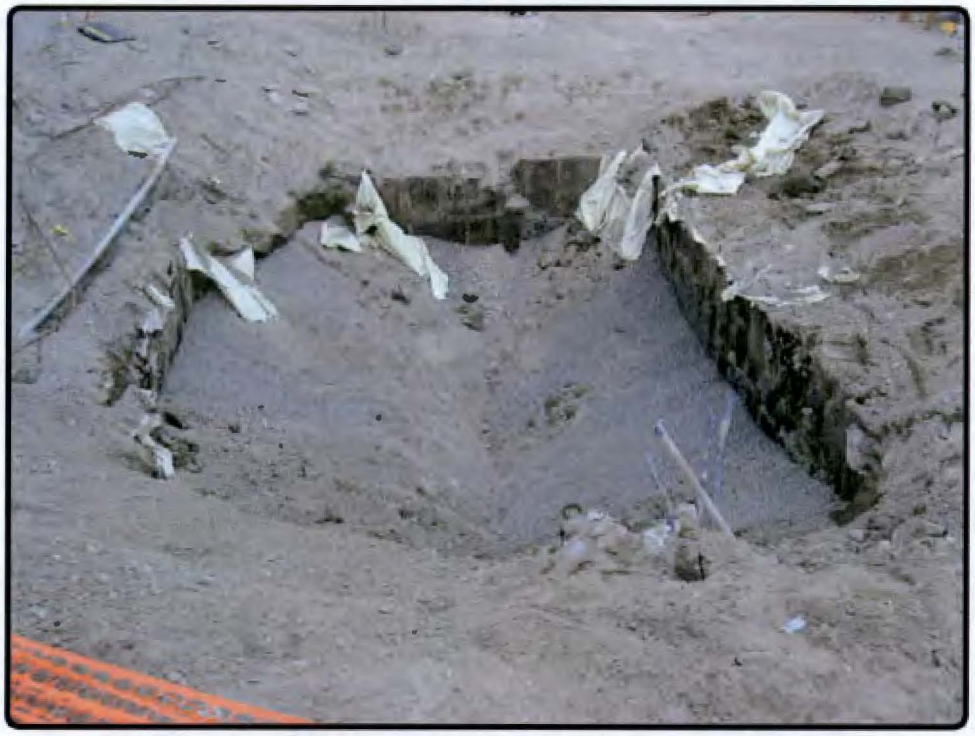
PPM




6"
FW
R
P
M
2721-Z
BLDG
ELEC
PANEL
NORTH
CONC WALK
2736-ZB
BLDG
4" FW
REQUIRED SCAN AREA
L
K
TOWER
DIESEL
TANK
CONC WALK
D
ASPH
HVAC
232-Z
SLAB
C
2731-ZA
BLDG
15" DC
B
PS
LOADING
DOCK


NORTH
SURVEY NOTES:
CONTROL MONUMENT
COORDINATES 200W AREA-FEET (PFP CONTROL)
ELEVATION 200W AREA-FEET (PFP CONTROL)
2W-168 N 40000.00 W 77170.00 677.39
2W-169 N 39600.00 W 77170.00 677.76
HORIZONTAL DATUM: 200W AREA (feet)
VERTICAL DATUM: 200W AREA (feet)
N 40000
N 39900
N 39800
N 39700
N 39600
W 77200
W 77100
W 77000
W 76900
2W-168
2W-169
ASPHALT ROAD
ASPHALT PAVEMENT
274-5Z BLDG
6" CNDS STL
PILLBOX
TOWER
234-5Z SOUTH ANNEX
U.G. TANK
2736-Z BLDG
LIFT STATION
8" SNS
4" SNS
15" PS
MH
UNDERGROUND DUCT
MOBILE OFFICE ENLARGED SITE PLAN SEE H-2-829360 SH 1
FOR GAS BOTTLE COVER SEE H-2-829387 SH 1
2721-Z BLDG
ELEC PANEL
2736-ZB BLDG
MO-264
FOR ACCESS ENTRY ENCLOSURE SEE H-2-829362 SH 1
STORAGE BLDG
CONC WALK
DECON TRAILER
EXST ELEC PNL
ABANDONED SNS DRAIN FIELD
CONEX STORAGE BOXES
DIESEL TANK
HVAC
232-Z BLDG
2736-BLDG
6" DR ABAND
234-ZB BLDG
2751-ZA BLDG
LOADING DOCK
CONEX
CONC SLAB
EXST PILLBOX
8" SW
8" FW
4" SW
ASPHALT ROAD
BACKFLOW PREVENTOR SEE H-2-829359 SH 1
CONCRETE PAD FOR NITROGEN SYSTEM SEE H-2-829353 SH 1
RADIOACTIVE MATERIAL AREA
ELEC PANEL
MO-834
MO-839
CONCRETE SLAB
CONTROLLED ACCESS AREA
GENERAL SITE PLAN
SCALE: 1"=20'
20 0 20 40
SCALE IN FEET
DWG NO
TITLE
DRAWING TRACEABILITY

(2011 05 02) Additional Photographs



Photograph 1: Former UST Cavity and Wooden Shoring

Photograph 2: Former UST

5-3-11

Traveler#: TRVL-11-167
S.A.F.#: F11-074 and F11-075 **Sample Date:** 05/02/2011
PROJECT TITLE: PFP Diesel UST Removal Verification Samples
CUSTOMER: Rich Clinton 372-1718
FIELD CONTACTS: Jim Leary, William Cox ECO
PERSONAL: K.B. Hulse, B.E. Briggs, C. Chamberlain NCO
Kelly Olson Env. Eng.
Danya Laurendeau, Justyne Corso HPT
Josh Owen US Site Ecologist
Ronald Sasser Certified UST
David Diedtrich IH
Steve Hamblin, Jim Hogan FWS
Greg Hauge PIC

PURPOSE: Soil verification once the Under Ground Diesel tank and associated pipelines had been removed.
LOCATION: Diesel Tank 2721Z-2 just north of the 2731-ZA building.
SAMPLE POINT:

Location	VOA #	Dup	TPH/Rad	Dup	Time	Comments
Pipeline loc. A	B2D174	B2D175	B2D1B6	B2D1B7	1415	At joint/seam 1 ft bbp
Pipeline loc. B	B2D176	B2D177	B2D1B8	B2D1B9	1355	At elbow entering 2721-Z 1 ft below bottom of pipe (bbp)
Pipeline Extra	B2D184	B2D185	B2D1C6	B2D1C7	1430	At elbow where pipe turned north toward 2721-Z, 1 ft bbp
Stockpile East	B2D178	B2D179	B2D1C0	B2D1C1	1455	Composite from one pile near excavation
Stockpile center	B2D180	B2D181	B2D1C2	B2D1C3	1440	Composite of two piles see photo
Stockpile West	B2D182	B2D183	B2D1C4	B2D1C5	1422	Composite of three piles farthest from excavation
Equipment Blank	B2D1B3	Done on backhoe bucket using Ultra High Purity water			1310	Bucket had been cleaned prior to pouring water inside.
FXR	B2D1B2	Taken at pipeline B location			1355	Used Ultra High Purity Water

SAMPLING METHOD: For below the pipeline the soil was removed with a shovel to within three inches of sample depth. Then a disposable cleaned scoop was used to remove the final three inches of soil. The Terra-Cores were used to collect the VOAs. The soil was then loosened and mixed prior to filling the certified clean sample bottles. For the stockpiles a composite was taken of at least two locations. Some surface soil was removed. A clean scoop was used to collect some soil into a new plastic bag and then the terra-Cores were used to collect the VOAs from the pile. After the composite had been collected into the bag it was mixed and the sample bottles were filled. One zip lock baggy was filled for the field screening to be done by IH from each sample location.

DOCUMENTS: Ground water procedures GRP-FS-04-G-029,-030,-016,-020

5-3-11

ONE ATTACHMENT ON THIS PAGE

5-3-11

Continued on Page 93

Read and Understood By

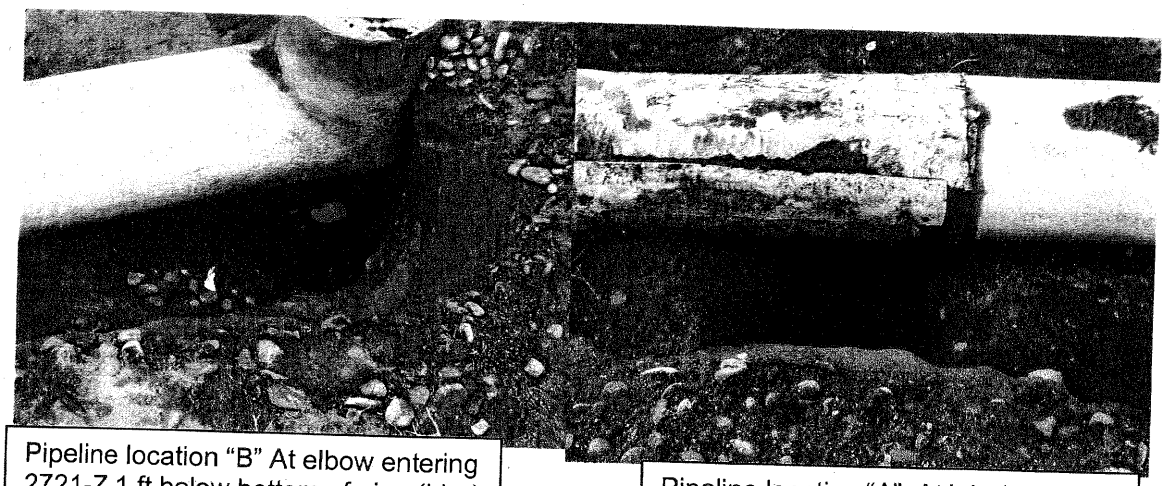
KB Hulse 5-3-11

Signed Date Signed Date

5-3-11

SAMPLING EVENT:
1200 on site at Rich Clinton's office. Met with Kelly and Jim and proceeded to excavation for pre-job.
1230 pre-job conducted by Steve Hamblin
1300 Backhoe in place ready to dig in pit. Workers wiping off bucket due to rain.
1310 poured water in bucket for equipment blank and dipped it out into sample bottles.
1315 began moving pea gravel per Ron Sasser's direction in an attempt to get into soil for sample. The gravel kept sloughing back into the hole. Discussed how to clean out the pit. The old wooden shoring began to move and at 1344 the pit was determined unsafe and backhoe work was halted. Per Kelly's direction began exposing and sampling the pipeline and the stockpiles. Sample points were directed by Ron Sasser.
1510 done sampling, finishing sealing and labeling the sample bottles.
1620 samples locked into SSU at 6269 for delivery to the lab on 5/3/11.

WEATHER CONDITIONS: It began raining during the pre-job but had let up to a light sprinkle during sampling. About 50°F with a light wind.
PPE: Hardhats, safety shoes, nitrile gloves, and safety glasses.
SHIPPING INFORMATION:
All samples were delivered to WSCF lab on 5/3/11 at 0800.



Pipeline location "B" At elbow entering 2721-Z 1 ft below bottom of pipe (bbp)

Pipeline location "A". At joint/seam 1 ft bbp

5-3-11

ONE ATTACHMENT ON THIS PAGE

5-3-11

Continued on Page 94

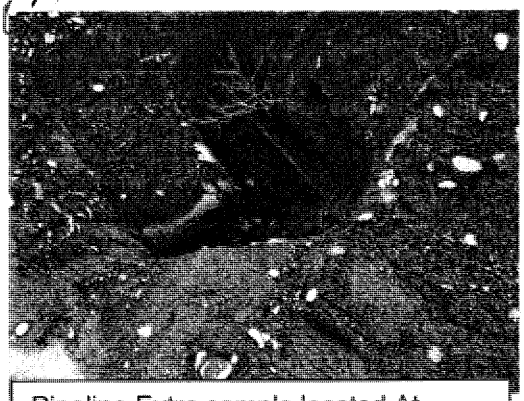
Read and Understood By

Signed	Date	Signed	Date
B Hulse	5-3-11		

Project PFP Diesel UST Notebook No. HNF-N-507-15

Continues from Page 93

5-3-11



Pipeline Extra sample located At elbow where pipe turned north toward 2721-Z

Stockpile East Composite taken from both sides of pile near excavation

Stockpile center Composite of two piles Stockpile West Composite of three piles

ONE ATTACHMENT ON THIS PAGE, 5-3-11

5-3-11

Continued on Page NONE

Read and Understood By

Signed	Date	Signed	Date
KB Hulse	5-3-11		

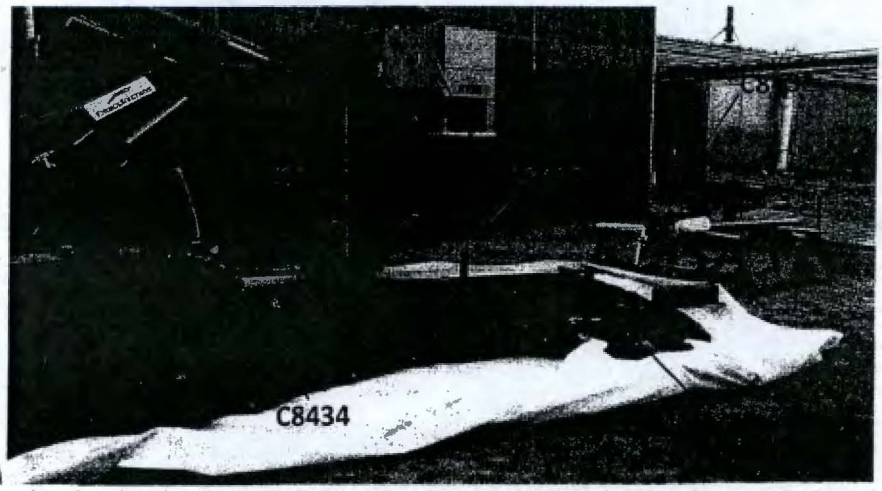
PROJECT: PFP diesel - UST Geo Probe **LOG BOOK #:** HNF-N-507-19
SAF #s: F11-074, F11-075 **SAMPLE DATE:** 05/10/2011
Charge code: 301901/ES10 **SHIPMENT DATE:** 05/11/2011
TYPE OF PROTOCOL: Sampling Done to RCRA protocol. **RWP:** Z-988 Rev. 1
Customer / point of contact (poc): R. Clinton **Phone:** 509-372-1718
WORK DOCUMENTS: Work Package# 2Z-09-0754/m **S&GRP Traveler#:** TRVL-11-168

PERSONNEL:

J. Mehrer	BTR/FWS	R. Clinton	PFP E&W Mgr
J. Scales	NCO Sampler	S. Hamlin	PFP project PIC
B. Briggs	NCO Sampler	K. Patterson	NCO Sampler
J. Owen	Site Assessor	D. Skoglie	Field ops ES
J. Hogan	GW FWS	R. Gasser	UST Supervisor
J. Ulmer	Project Mgr.	B. Thackabery	SGRP QA
K. Olson	Env. Eng.	B. Cox	Enviromental
M. Ehrgot	Driller	J. Leary	Env. Compliance
M. Passey	Drillers Helper	D. Laurendean	PFP RCT
J. Corso	PFP RCT	C. Wright	SGRP Well Mgnt
P. Vopalensky	S&GRP Safety	D. Johnson	Safety
D. Diedtrich	IH&S	B. Schilperoort	D&D Mgr / SSO

COPY

PURPOSE: To perform verification sampling for PFP Diesel oil tank removal.
Weather: 62 °F Sunny and clear Wind from West at 7 mph.
LOCATION: PFP complex, the oil tank was buried just South 2736-ZB and just North 2731-ZA.as seen in the attached Traveler.
Sample Points: There will be five Geo Probe sample locations C8432, C8433, C8431, C8435, C8434 Identified by the Stakes laid out to identify borehole locations. Location identified by Traveler TRVL-11-186 and confirmed by Site Assessor. The Soil Sampling Report for each sample will correlate the sample points with sample numbers taken see correlating traveler and attached maps.



5/10/11

* NOTE - ONE FORM ATTACHED THIS PAGE.

Continued on Page 2

Read and Understood By

Signed Date Signed Date

05/10/2011 Continued **LOG BOOK #:** HNF-N-507-19

SAMPLE METHOD: An Energy Solutions Geo Probe push rig was used to reach the natural soil underneath where the diesel tank was buried. It was determined that a depth of 11 to 13 feet would be the sample depth, if no soil was recovered then another sampler would be pushed 13 to 15 feet, per Site Assessor and Env Eng concurrence. The contents will then be emptied from the sample tubes into a stainless steel bowl and the VOA sample bottles filled first using new clean Terra Core samplers, the soil will then be homogenized and placed into the remaining sample bottles using a new clean scoop by priority of the Attached Email sent by B. Cox, PFP environmental compliance and agreed with by GW FWS.

COPY

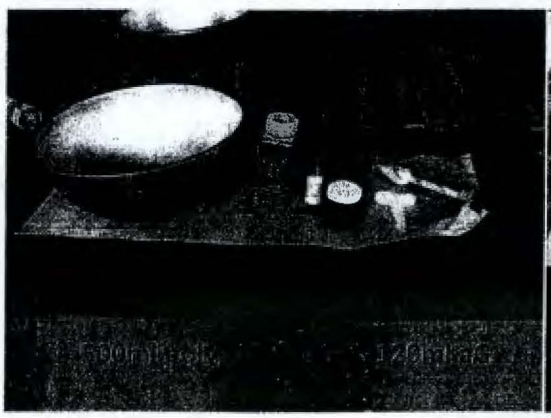
PPE: Safety glasses, Nitrile gloves, leather gloves safety boots, reflective clothing, and Hard hats.

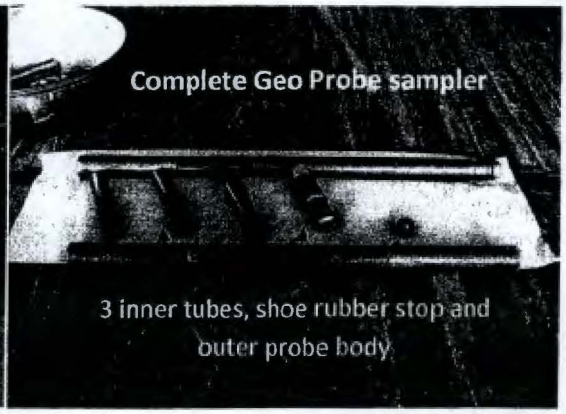
0600 - Filled Equipment Blank at the 6268 facility using Ultra-High Purity Water per TRVL-11-186. This was done by pouring the Ultra-High Purity Water over the Geo probe sleeves and shoe into a large stainless steel bowl. The water was then pumped into the certified clean sample bottles (lot #s1L aG-042319, ,500ml P-HN03- 042116, 40 ml aGs* HCL - 0162050) using a peristaltic pump and clean tygon tubing.Sample # B2DVR6

0730 - Arrived on site PFP Bldg 270-Z for Pre-job.

0737 - Pre-job given by J. Mehrer and S. Hamblin.

0810 - On site of oil tank sampling. Began setting up for sampling evolution. All sample bottles have same lot number throughout evolution VOAs – 40ml aGs* - B-0-152-01VB, TPH- Diesel – 120ml aG – 028784, gross-alph/gross beta – 500 square poly – 036639.





1016 – Sample C8432 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 50 percent recovery. Sample #: B2DVL6, B2DVN6. I-001 DUP Sample #: B2DVL7, B2DVN7. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 100ml of soil for gross alpha/ beta on I-001, per the attached priority email.

COPY

1256 – Sample C8433 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 70 percent recovery. Sample #: B2DVL8, B2DVN8. I-001 DUP Sample #: B2DVL9, B2DVN9. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 175ml of soil for gross alpha/ beta on I-001, per the attached priority email. The equipment from the Equipment Blank was used on this interval per GW-FWS. The field QC (FXR) was taken at this time Sample # B2DVR4 also with GW FWS concurrence.

5-10-11

* NOTE - ONE FORM ATTACHED THIS PAGE.

Continued on Page 3

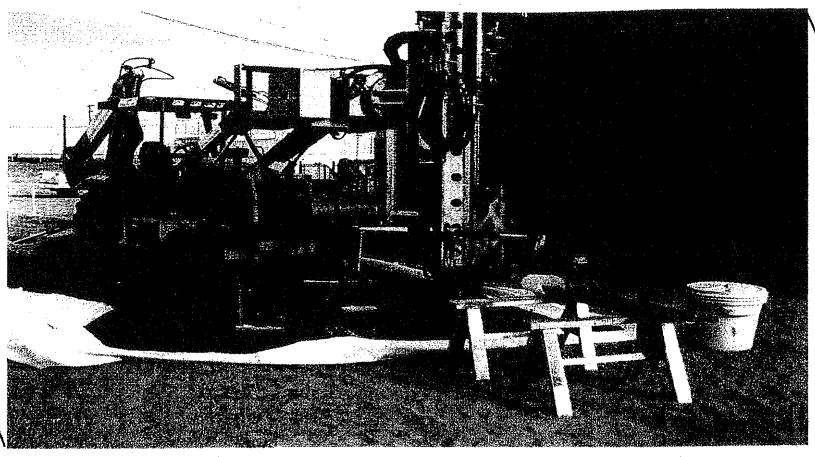
Read and Understood By

Signed Date Signed Date

5-10-11

05/10/2011 Continued **LOG BOOK #:** HNF-N-507-19

1420 – Sample C8431 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, Again only 50 percent recovery. Sample #: B2DVL4, B2DVN4. I-001 DUP Sample #: B2DVL5, B2DVN5. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 100ml of soil for gross alpha/ beta on I-001, per the attached priority email.



1445 – RCT surveyed field sampling equipment. Triple rinsed cleaned all sampling equipment. After BTR assessed time left decided to call an end to sampling for the day due to time constraints. Set up push rig on next well site will start on C8435 on 05/11/2011. Disposed of the triple rinse water in large plastic bags filled with absorbent pads that where provided by PFP operations personnel. Discarded all waste per PFP project PIC.

COPY

1510 – Off-site PFP, all samples to 6269 sample storage unit (SSU 1) due to shut down of WSCF laboratory due to waste concerns.

1530 – Samples logged into SSU#1.

5-10-11

* NOTE - ONE FORM ATTACHED THIS PAGE.
NO FURTHER ENTRIES THIS DATE.

5/18/11

Continued on Page

Read and Understood By

Signed Date Signed Date

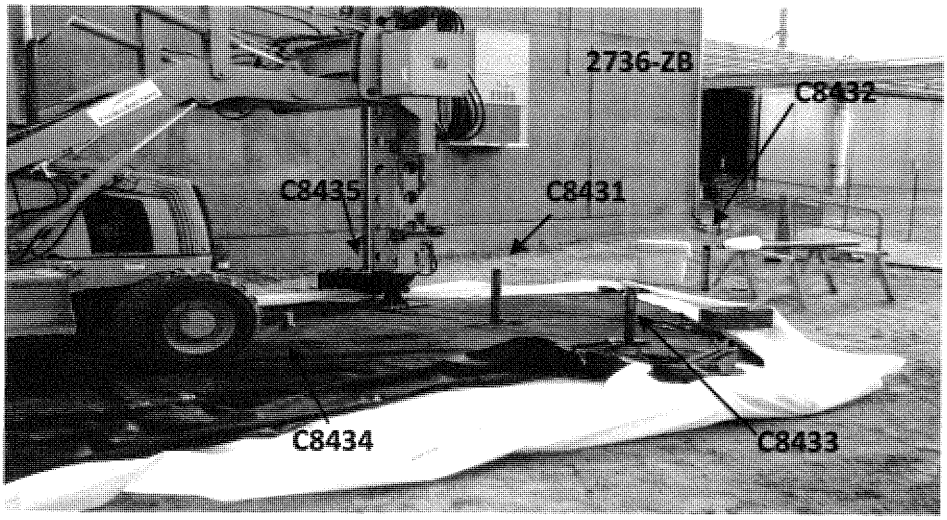
PROJECT: PFP diesel - UST Geo Probe
LOG BOOK #: HNF-N-507-19
SAF #s: F11-074, F11-075
SAMPLE DATE: 05/10/2011
Charge code: 301901/ES10
SHIPMENT DATE: 05/11/2011
TYPE OF PROTOCOL: Sampling Done to RCRA protocol.
RWP: Z-988 Rev. 1
Customer / point of contact (poc): R. Clinton
Phone: 509-372-1718
WORK DOCUMENTS: Work Package# 2Z-09-0754/m
S&GRP Traveler#: TRVL-11-168

PERSONNEL:

J. Mehrer	BTR/FWS	R. Clinton	PFP E&W Mgr
J. Scales	NCO Sampler	S. Hamlin	PFP project PIC
B. Briggs	NCO Sampler	K. Patterson	NCO Sampler
J. Owen	Site Assessor	D. Skoglie	Field ops ES
J. Hogan	GW FWS	R. Sasser	UST Supervisor
J. Ulmer	Project Mgr.	B. Thackabery	SGRP QA
K. Olson	Env. Eng.	B. Cox	Enviromental
M. Ehrgot	Driller	J. Leary	Env. Compliance
M. Passey	Drillers Helper	D. Laurendean	PFP RCT
J. Corso	PFP RCT	C. Wright	SGRP Well Mgnt
P. Vopalensky	S&GRP Safety	D. Johnson	Safety
D. Diedtrich	IH&S	B. Schilperoort	D&D Mgr / SSO

COPY

PURPOSE: To perform verification sampling for PFP Diesel oil tank removal.
Weather: 62 ®F Sunny and clear Wind from West at 7 mph.
LOCATION: PFP complex, the oil tank was buried just South 2736-ZB and just North 2731-ZA.as seen in the attached Traveler.
Sample Points: There will be five Geo Probe sample locations C8432, C8433, C8431, C8435, C8434 Identified by the Stakes laid out to identify borehole locations. Location identified by Traveler TRVL-11-186 and confirmed by Site Assessor. The Soil Sampling Report for each sample will correlate the sample points with sample numbers taken see correlating traveler and attached maps.



05/10/2011 Continued **LOG BOOK #:** HNF-N-507-19

SAMPLE METHOD: An Energy Solutions Geo Probe push rig was used to reach the natural soil underneath where the diesel tank was buried. It was determined that a depth of 11 to 13 feet would be the sample depth, if no soil was recovered then another sampler would be pushed 13 to 15 feet, per Site Assessor and Env Eng concurrence. The contents will then be emptied from the sample tubes into a stainless steel bowl and the VOA sample bottles filled first using new clean Terra Core samplers, the soil will then be homogenized and placed into the remaining sample bottles using a new clean scoop by priority of the Attached Email sent by B. Cox PFP environmental compliance and agreed with by GW FWS.

PPE: Safety glasses, Nitrile gloves, leather gloves safety boots, reflective clothing, and Hard hats.

0600 - Filled Equipment Blank at the 6268 facility using Ultra-High Purity Water per TRVL-11-186. This was done by pouring the Ultra-High Purity Water over the Geo probe sleeves and shoe into a large stainless steel bowl. The water was then pumped into the certified clean sample bottles (lot #s1L aG-042319, ,500ml P-HN03- 042116, 40 ml aGs* HCL - 0162050) using a peristaltic pump and clean tygon tubing.Sample # B2DVR6

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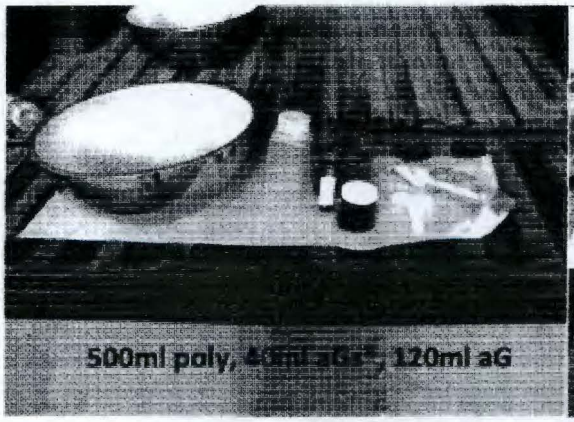
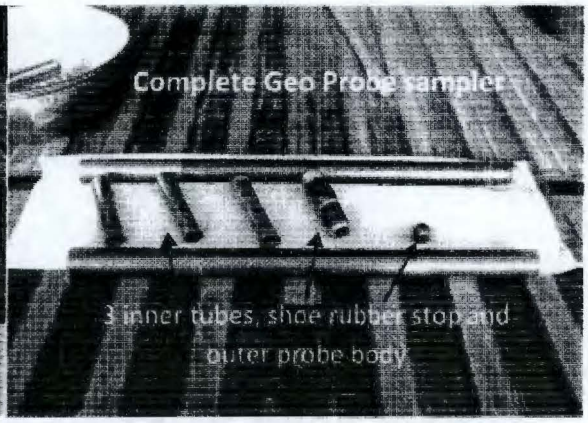




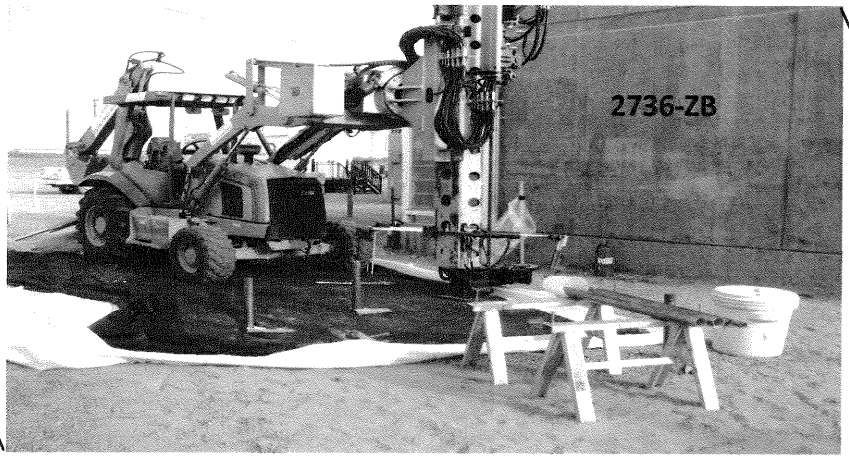
1016 – Sample C8432 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 50 percent recovery. Sample #: B2DVL6, B2DVN6. I-001 DUP Sample #: B2DVL7, B2DVN7. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 100ml of soil for gross alpha/ beta on I-001, per the attached priority email.

1256 – Sample C8433 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 70 percent recovery. Sample #: B2DVL8, B2DVN8. I-001 DUP Sample #: B2DVL9, B2DVN9. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 175ml of soil for gross alpha/ beta on I-001, per the attached priority email. The equipment from the Equipment Blank was used on this interval per GW-FWS. The field QC (FXR) was taken at this time Sample # B2DVR4 also with GW FWS concurrence.

COPY

05/10/2011 Continued **LOG BOOK #:** HNF-N-507-19

1420 – Sample C8431 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, Again only 50 percent recovery. Sample #: B2DVL4, B2DVN4. I-001 DUP Sample #: B2DVL5, B2DVN5. Filled VOAs, TPH, on both I-001 and I-001 DUP and was only able to recover 100ml of soil for gross alpha/ beta on I-001, per the attached priority email.



1445 – RCT surveyed field sampling equipment. Triple rinsed cleaned all sampling equipment. After BTR assessed time left decided to call an end to sampling for the day due to time constraints. Set up push rig on next well site will start on C8435 on 05/11/2011. Disposed of the triple rinse water in large plastic bags filled with absorbent pads that where provided by PFP operations personnel. Discarded all waste per PFP project PIC.

COPY

1510 – Off-site PFP, all samples to 6269 sample storage unit (SSU 1) due to shut down of WSCF laboratory due to waste concerns.

1530 – Samples logged into SSU#1.

Hogan, James G

From:	Cox, William G (Bill)
Sent:	Monday, May 09, 2011 4:15 PM
To:	Hogan, James G; Patterson, Kevin C
Cc:	Clinton, Richard (Rich); Olson, Kelly A
Subject:	Sample Priority

This is to confirm what we discussed in the meeting for the PFP diesel storage tank sampling earlier today.

I understand that the sampler may not contain enough material for all proposed samples. Therefore, here is the priority.

The primary sample is the top priority, then if there is enough additional material the duplicate is the next priority. If there is not enough material for duplicate VOA and TPH, then the VOA is the next priority.

COPY

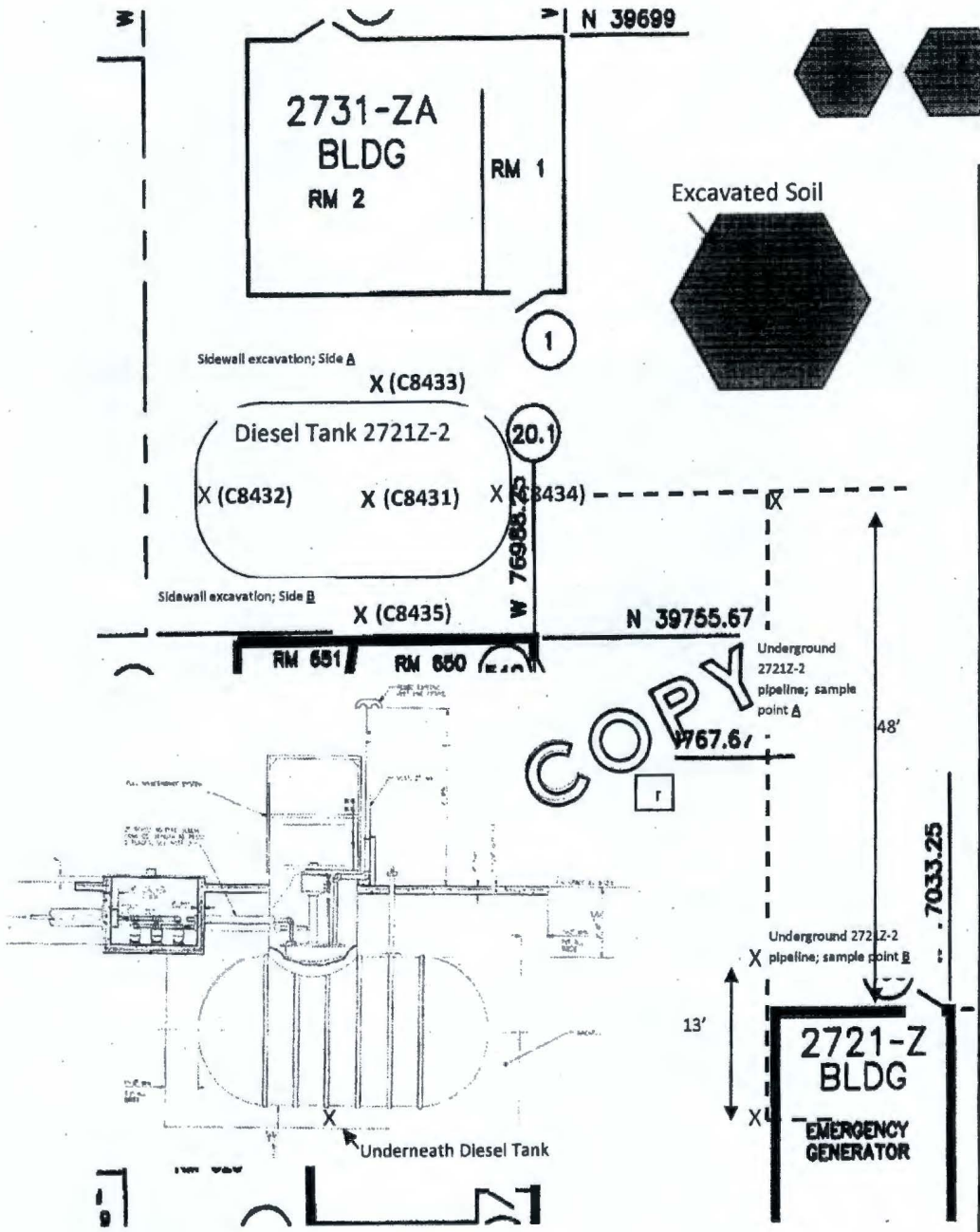
Anything left over after the primary and duplicate samples, can be used for the rad sample.

Bill Cox
PFP Environmental Compliance

5-10-11
J Hogan FWS CONCURRENCE

COPY

Updated Map May 11,2011



Sampling Instructions:

2721Z-2 UST Removal

- Take two (2) separate grab samples from each location marked with a red X for 22 samples.
- Collect samples from 1.) Bucket of the excavator, and/or 2.) soil pile(s).3.)and/or push sample from Geoprobe
- Two QA/QC samples required per day; or as directed by ECO or Designee.
- If an anomaly is noted; up to five (5) additional samples may be taken as directed by ECO or Designee.
- [redacted] Soil pile samples will be composite samples. Large soil pile will be a composite from two locations within pile. Small piles will be a composite of one sample from two piles and one sample from three piles.

NOTE: There are no directional arrows on this map. This is not to scale.

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 10 2011 1016	
SAF NO.(S) F11-074			
LOCATION C8432; I-001		**LOGBOOK NO./PAGE** HNF-N-507-19-1	
WELL NAME C8432	**ORIGINAL**	**WELL ID** C8432	**ACTUAL DEPTH** 11-13 ☒ft ☐m
BOTTOM OF CASING (bgs) 11 ☒ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☒ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** JS Scales CHPRC

WSCF F11-074-057

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL6	5 / 40mL / aGs	B-0152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-058

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN6	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN6	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☒ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☒ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See Logbook 5/10/11

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

	PRINT NAME	SIGN NAME	DATE
RECORDED BY	B.E. Briggs CHPRC	BeBriggs	MAY 10 2011
INDEPENDENT REVIEW			

PRINTED BY TMJOHANS ON 5/5/2011 10:49:29 AM

A-6004-701 (REV 2)

ORIGINAL

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 10 2011 1516	
SAF NO.(S) F11-074			
LOCATION C8432; I-001 DUP		**LOGBOOK NO./PAGE** HNF-N-507-19.1	
WELL NAME C8432	**ORIGINAL**	**WELL ID** C8432	**ACTUAL DEPTH** 11-13 ☒ ft ☐ m
BOTTOM OF CASING (bgs) 11 ☒ ft ☐ m		**BOTTOM OF BOREHOLE (bgs)** 13 ☒ ft ☐ m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** ~~JS Scales~~ CHPRC

WSCF F11-074-059

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL7	5 / 40mL / aGs	B-0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-060

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN7	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN7	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☒ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☒ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

COPY

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See Logbook 5/10/11

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 10 2011 (DATE)

INDEPENDENT REVIEW PRINT NAME SIGN NAME DATE

PRINTED BY TMJOHANS ON 5/5/2011 10:49:37 AM A-6004-701 (REV 2)

ORIGINAL

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC		**PAGE** 1 **OF** 2	
		DATE/TIME 5/10/11 0600	
SAF NO.(S) F11-075			
LOCATION C8433; I-001 EB		**LOGBOOK NO./PAGE** HNF-N-507-19 pg 1	
WELL NAME C8433	**ORIGINAL**	**WELL ID** C8433	**ACTUAL DEPTH** N/A ☐ft ☐m
BOTTOM OF CASING (bgs) N/A ☐ft ☐m		**BOTTOM OF BOREHOLE (bgs)** N/A ☐ft ☐m	
SAMPLES COLLECTED			
TOTAL NUMBER OF BOTTLES 7	**TOTAL NUMBER OF CHAINS** 1	**COLLECTOR** Scales	

WSCF **F11-075-006**

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVR6	3 / 40mL / aGs*	0162050	HCl or H2SO4 to pH <2/Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVR6	3 / 1L / aG	042319	HCl to pH <2/Cool~4C	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
B2DVR6	1 / 500mL / G/P	042116	HNO3 to pH <2	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

COPY

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC		**PAGE** 2 **OF** 2	
		DATE/TIME 5/10/11 0600	
SAF NO.(S) F11-075			
LOCATION C8433; I-001 EB		**LOGBOOK NO./PAGE** HNF-N-507-19 pg 7	
WELL NAME C8433	**ORIGINAL**	**WELL ID** C8433	**ACTUAL DEPTH** N/A ☐ft ☐m
BOTTOM OF CASING (bgs) N/A ☐ft ☐m		**BOTTOM OF BOREHOLE (bgs)** N/A ☐ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 1 **COLLECTOR** Scales

FIELD INFORMATION

PURGE RATE ☐ gpm ☐ Lpm	**TIME ON**	**TIME WATER**	**TIME PURGE**	**TIME SAMP**	**TIME OFF**	
PURGE VOLUME REQUIRED ☐ gal ☐ L						
WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☐ OTHER						

FIELD MEASUREMENTS

SAMPLE NO.											
TIME											
pH (unitless)											
TEMP ☐°F ☐°C											
COND (µs/cm)											
TURB. (NTU)											
D.O. (mg/L)											
ORP (mV)											

JB 5/10/11

COP

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☐ YES ☒ NO

RECORDED BY	Joe Scales (PRINT NAME)	(SIGN NAME)	5/10/11 (DATE)
INDEPENDENT REVIEW	(PRINT NAME)	(SIGN NAME)	~~5/10/11~~ bb 5/10/11 (DATE)

PRINTED BY TMJOHANS ON 5/5/2011 10:50:01 AM

A-6004-700 (REV 2)

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC		PAGE 1 OF 1	
		DATE/TIME MAY 10 2011 1256	
SAF NO.(S) F11-075			
LOCATION ~~C8431~~; I-001 FXR bb 5/10/11		LOGBOOK NO./PAGE HNF-N-507-19-1	
WELL NAME ~~C8431~~ C8433 bb 5/10/11	ORIGINAL	WELL ID C8431	ACTUAL DEPTH N/A ☐ft ☐m
BOTTOM OF CASING (bgs) N/A ☐ft ☐m		BOTTOM OF BOREHOLE (bgs) N/A ☐ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 3	TOTAL NUMBER OF CHAINS 1	COLLECTOR	~~JS Scales~~ CHPRC

WSCF F11-075-005

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVR4	3 / 40mL / aGs*	B0162050	HCl or H2SO4 to pH <2/Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

FIELD INFORMATION

PURGE RATE N/A	☐ gpm ☐ Lpm	TIME ON	TIME WATER	TIME PURGE	TIME SAMP	TIME OFF
PURGE VOLUME REQUIRED N/A	☐ gal ☐ L	N/A	N/A	N/A	1256	N/A

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ ~~OTHER~~

FIELD MEASUREMENTS

SAMPLE NO.										
TIME										
pH (unitless)										
TEMP ☐°F ☐°C										
COND (µs/cm)										
TURB. (NTU)										
D.O. (mg/L)										
ORP (mV)										

COPY

See Logbook bb 5/10/11

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☐ YES ☐ NO

RECORDED BY	B.E. Briggs CHPRC	BE Briggs	MAY 10 2011
	PRINT NAME	SIGN NAME	DATE
INDEPENDENT REVIEW			
	PRINT NAME	SIGN NAME	DATE

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ORIGINAL

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 10 2011 1256	
SAF NO.(S) F11-074			
LOCATION C8433; I-001		**LOGBOOK NO./PAGE** HNF-N-507-19-1	
WELL NAME C8433	**ORIGINAL**	**WELL ID** C8433	**ACTUAL DEPTH** 11 ☒ft ☐m
BOTTOM OF CASING (bgs) 11 ☒ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☒ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** JS Scales CHPRC

WSCF F11-074-061

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL8	5 / 40mL / aGs	BD-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-062

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN8	1 / 120mL / aG	0287784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN8	1 / 500mL / G/P	0306639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-748 ☐ 6250 ☒ OTHER

COPY

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☑ OTHER bb 5/10/11

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

FIELD OBSERVATIONS

See Logbook 5/10/11 bb

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 10 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

PRINTED BY TMJOHANS ON 5/5/2011 10:49:45 AM A-6004-701 (REV 2)

ORIGINAL

ORIGINAL

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S)	PFP Diesel UST Removal Verification Sampling - Soil	PAGE 1 OF 1	
		DATE/TIME	MAY 10 2011 1256
SAF NO.(S)	F11-074		
LOCATION	C8433; I-001 DUP	LOGBOOK NO./PAGE	HNF -N-507-19.1
WELL NAME	C8433 **ORIGINAL**	WELL ID C8433	ACTUAL DEPTH 11-15 ☑ft ☐m
BOTTOM OF CASING (bgs)	11 ☑ft ☐m	BOTTOM OF BOREHOLE (bgs)	13 ☑ft ☐m

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7	TOTAL NUMBER OF CHAINS 2	COLLECTOR	JS Scales CHPRC

WSCF F11-074-063

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL9	5 / 40mL / aGs	B-0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-064

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN9	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN9	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

FIELD OBSERVATIONS

See Logbook 5/10/11 bb

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO BLUE CARD NO N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

	PRINT NAME	SIGN NAME	DATE
RECORDED BY	B.E. Briggs CHPRC	BEBriggs	MAY 10 2011
INDEPENDENT REVIEW			

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S)	PFP Diesel UST Removal Verification Sampling - Soil	PAGE 1 OF 1	
		DATE/TIME	MAY 10 2011 1420
SAF NO.(S)	F11-074		
LOCATION	C8431; I-001	LOGBOOK NO./PAGE	HNF-N-507-P.1
WELL NAME	C8431 **ORIGINAL**	WELL ID C8431	ACTUAL DEPTH 11-13 ☑ ft ☐ m
BOTTOM OF CASING (bgs)	11 ☑ ft ☐ m	BOTTOM OF BOREHOLE (bgs)	13 ☑ ft ☐ m

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7	TOTAL NUMBER OF CHAINS 2	COLLECTOR	JS Scales CHPRC

WSCF F11-074-053

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL4	5 / 40mL / aGs	B0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-054

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN4	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN4	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See Logbook 5/10/11 bb

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO BLUE CARD NO

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 10 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

ORIGINAL

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 10 2011	
SAF NO.(S) F11-074			
LOCATION C8431; I-001 DUP		**LOGBOOK NO./PAGE** HNF-N-507-19-1	
WELL NAME C8431	**ORIGINAL**	**WELL ID** C8431	**ACTUAL DEPTH** 11-13 ☑ft ☐m
BOTTOM OF CASING (bgs) 11 ☑ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☑ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** ~~JS Scales~~ CHPRC

WSCF F11-074-055

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVL5	5 / 40mL / aGs	B-0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-056

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVN5	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVN5	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See logbook 5/10/11 bb

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 10 2011 (DATE)

INDEPENDENT REVIEW PRINT NAME SIGN NAME DATE

PRINTED BY TMJOHANS ON 5/5/2011 10:49:18 AM

A-6004-701 (REV 2)

ORIGINAL

Project PFP DIESEL - UST GEO Probe Notebook No. HNF-N-507-19

Continues from Page N/A

PROJECT: PFP diesel - UST Geo Probe **LOG BOOK #:** HNF-N-507-19

SAF #s: F11-074, F11-075 **SAMPLE DATE:** 05/11/2011

Charge code: 301901/ES10 **SHIPMENT DATE:** 05/11/2011

TYPE OF PROTOCOL: Sampling Done to RCRA protocol. **RWP:** Z-988 Rev. 1

Customer / point of contact (poc): R. Clinton **Phone:** 509-372-1718

WORK DOCUMENTS: Work Package# 2Z-09-0754/m **S&GRP Traveler#:** TRVL-11-168

PERSONNEL:

J. Mehrer	BTR/FWS	R. Clinton	PFP E&W Mgr
J. Scales	NCO Sampler	S. Hamlin	PFP project PIC
B. Briggs	NCO Sampler	K. Patterson	NCO Sampler
J. Owen	Site Assessor	D. Skoglie	Field ops ES
J. Hogan	GW FWS	R. Cassee	UST Supervisor
J. Ulmer	Project Mgt.	B. Thackabery	SGRP QA
K. Olson	Env. Eng.	B. Cox	Enviromental
M. Ehrgot	Driller	J. Leary	Env. Compliance
M. Passey	Drillers Helper	D. Laurendean	PFP RCT
J. Corso	PFP RCT	C. Wright	SGRP Well Mgnt
P. Vopalensky	S&GRP Safety	D. Johnson	Safety
D. Diedtrich	IH&S	B. Schilperoort	D&D Mgr / SSO

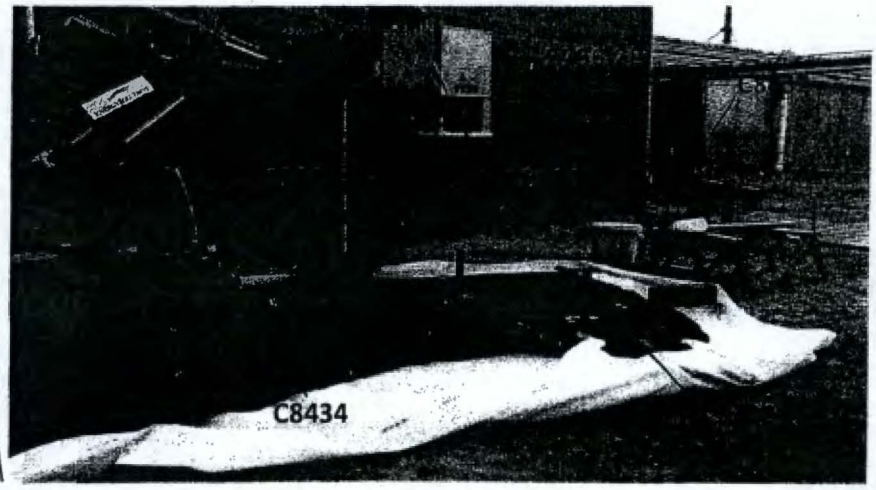
COPY

PURPOSE: To perform verification sampling for PFP Diesel oil tank removal.

Weather: 70 °F Partly cloudy Wind from SE at 6 mph.

LOCATION: PFP complex, the oil tank was buried just South 2736-ZB and just North 2731-ZA.as seen in the attached Traveler.

Sample Points: There will be five Geo Probe sample locations C8432, C8433, C8431, C8435, C8434 Identified by the Stakes laid out to identify borehole locations. Location identified by Traveler TRVL-11-186 and confirmed by Site Assessor. The Soil Sampling Report for each sample will correlate the sample points with sample numbers taken see correlating traveler and attached maps.



* NOTE - ONE FORM ATTACHED THIS PAGE

Continued on Page 5

Read and Understood By

Signed Date Signed Date

05/11/2011 Continued **LOG BOOK #:** HNF-N-507-19

SAMPLE METHOD: An Energy Solutions Geo Probe push rig was used to reach the natural soil underneath where the diesel tank was buried. It was determined that a depth of 11 to 13 feet would be the sample depth, if no soil was recovered then another sampler would be pushed 13 to 15 feet, per Site Assessor and Env Eng concurrence. The contents will then be emptied from the sample tubes into a stainless steel bowl and the VOA sample bottles filled first using new clean Terra Core samplers, the soil will then be homogenized and placed into the remaining sample bottles using a new clean scoop by priority of the Attached Email sent by B. Cox, PFP environmental compliance and agreed with by GW FWS.

PPE: Safety glasses, Nitrile gloves, leather gloves safety boots, reflective clothing, and Hard hats.

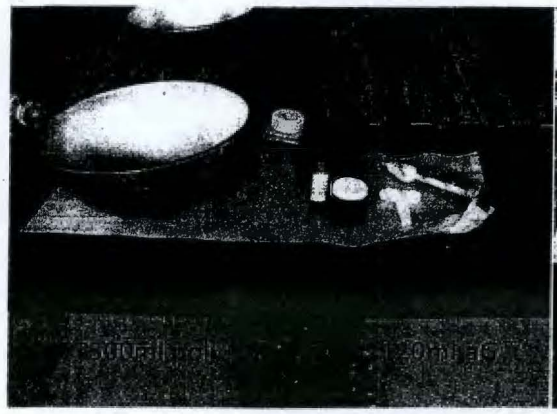
0630 - Filled Equipment Blank at the 6268 facility using Ultra-High Purity Water per TRVL-11-186. This was done by pouring the Ultra-High Purity Water over the Geo probe sleeves and shoe into a large stainless steel bowl. The water was then pumped into the certified clean sample bottles (lot #s1L aG-042319, 500ml P-HN03- 042749, 40 ml aGs* HCL- 0162050) using a peristaltic pump and clean tygon tubing. Sample # B2DVR7.

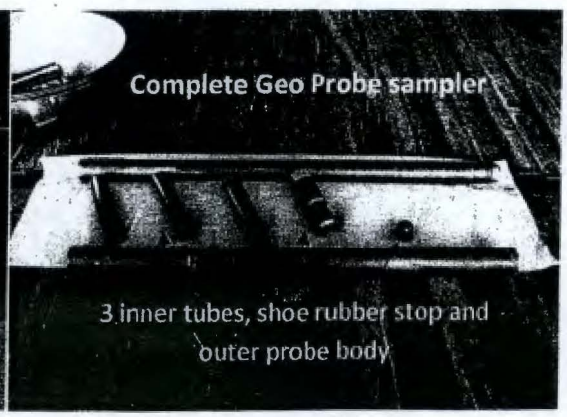
COPY

0730 - Arrived on site PFP Bldg 270-Z for pre-job.

0742 - Pre-job given by J. Mehrer and S. Hamblin.

0805 - On site of oil tank sampling. Began setting up for sampling evolution. All sample bottles have same lot number throughout evolution VOAs – 40ml aGs* - B-0-152-01VB, TPH- Diesel – 120ml aG – 028784, gross-alph/gross beta – 500 square poly – 036639.





0835 – While getting paper work set up it was noticed that the borehole labeling did not match the map in the TRVL-11-186, the stakes that identified the hole numbers were not in the correct location per the map. The BTR, PFP, PIC, GW FWS, site assessor, and Env Eng, were notified of the discrepancy. The Environmental Engineer agreed to re assign the C Numbers on the map to correlate to the position they were thought to have been sampled in, the new map was issued dated and will accompany the traveler and the paperwork.

0902 – Sample C8435 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 40 percent recovery. Sample #: B2DVM2, B2DVP2. I-001 DUP Sample #: B2DVM3, B2DVP3. Filled VOAs, TPH, on both I-001 and I-001 DUP and was not able to recover any soil for gross alpha/ beta on I-001, per the attached priority email. The equipment from the Equipment Blank was used on this interval per GW-FWS. The field QC (FXR) was taken at this time Sample # B2DVR5 also with GW FWS concurrence.

COPY

5-11-11

* NOTE - ONE FORM ATTACHED THIS PAGE.

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
	5-11-11		

05/11/2011 Continued **LOG BOOK #:** HNF-N-507-19

1420 – Sample C8434 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, Again only 40 percent recovery. Sample #: B2DVM1, B2DVP1. I-001 DUP Sample #: B2DVM0, B2DVP0. Filled VOAs, TPH, on both I-001 and I-001 DUP and was not able to recover any soil for gross alpha/ beta on I-001, per the attached priority email.

1102 – RCT surveyed field sampling equipment. Triple rinsed cleaned all sampling equipment. After BTR assessed time left decided to call an end to sampling for the day due to time constraints. Set up push rig on next well site will start on C8435 on 05/11/2011. Disposed of the triple rinse water in large plastic bags filled with absorbent pads that where provided by PFP operations personnel. Discarded all waste per PFP project PIC.

1135– Off-site PFP.

1140 – Samples delivered and accepted at WSCF laboratory. Energy solutions driller and helper will finish sealing sample holes and place brass markers in correct locations of attached map.

5/11/11

* NOTE - ONE FORM ATTACHED THIS PAGE -
NO FURTHER ENTRIES THIS DATE.

5/11/11

COPY

Continued on Page

Read and Understood By

Signed 5/11/11 Date Signed Date

PROJECT: PFP diesel - UST Geo Probe
LOG BOOK #: HNF-N-507-19
SAF #s: F11-074, F11-075
SAMPLE DATE: 05/11/2011
Charge code: 301901/ES10
SHIPMENT DATE: 05/11/2011
TYPE OF PROTOCOL: Sampling Done to RCRA protocol.
RWP: Z-988 Rev. 1
Customer / point of contact (poc): R. Clinton
Phone: 509-372-1718
WORK DOCUMENTS: Work Package# 2Z-09-0754/m
S&GRP Traveler#: TRVL-11-168

PERSONNEL:

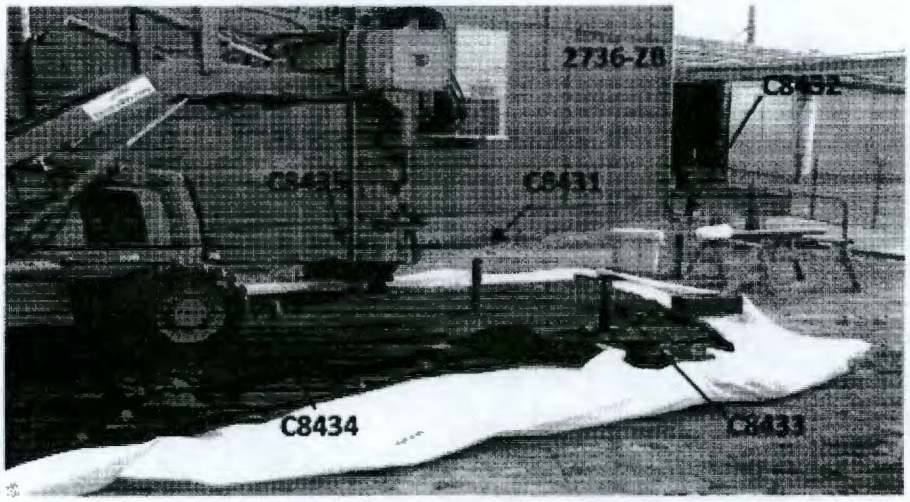
J. Mehrer	BTR/FWS	R. Clinton	PFP E&W Mgr
J. Scales	NCO Sampler	S. Hamlin	PFP project PIC
B. Briggs	NCO Sampler	K. Patterson	NCO Sampler
J. Owen	Site Assessor	D. Skoglie	Field ops ES
J. Hogan	GW FWS	R. Sasser	UST Supervisor
J. Ulmer	Project Mgr.	B. Thackabery	SGRP QA
K. Olson	Env. Eng.	B. Cox	Enviromental
M. Ehrgot	Driller	J. Leary	Env. Compliance
M. Passey	Drillers Helper	D. Laurendean	PFP RCT
J. Corso	PFP RCT	C. Wright	SGRP Well Mgnt
P. Vopalensky	S&GRP Safety	D. Johnson	Safety
D. Diedtrich	IH&S	B. Schilperoort	D&D Mgr / SSO

COPY

PURPOSE: To perform verification sampling for PFP Diesel oil tank removal.
Weather: 70 °F Partly cloudy Wind from SE at 6 mph.
LOCATION: PFP complex, the oil tank was buried just South 2736-ZB and just North 2731-ZA.as seen in the attached Traveler.

COPY

Sample Points: There will be five Geo Probe sample locations C8432, C8433, C8431, C8435, C8434 Identified by the Stakes laid out to identify borehole locations. Location identified by Traveler TRVL-11-186 and confirmed by Site Assessor. The Soil Sampling Report for each sample will correlate the sample points with sample numbers taken see correlating traveler and attached maps.



05/11/2011 Continued **LOG BOOK #:** HNF-N-507-19

SAMPLE METHOD: An Energy Solutions Geo Probe push rig was used to reach the natural soil underneath where the diesel tank was buried. It was determined that a depth of 11 to 13 feet would be the sample depth, if no soil was recovered then another sampler would be pushed 13 to 15 feet, per Site Assessor and Env Eng concurrence. The contents will then be emptied from the sample tubes into a stainless steel bowl and the VOA sample bottles filled first using new clean Terra Core samplers, the soil will then be homogenized and placed into the remaining sample bottles using a new clean scoop by priority of the Attached Email sent by B. Cox, PFP environmental compliance and agreed with by GW FWS.

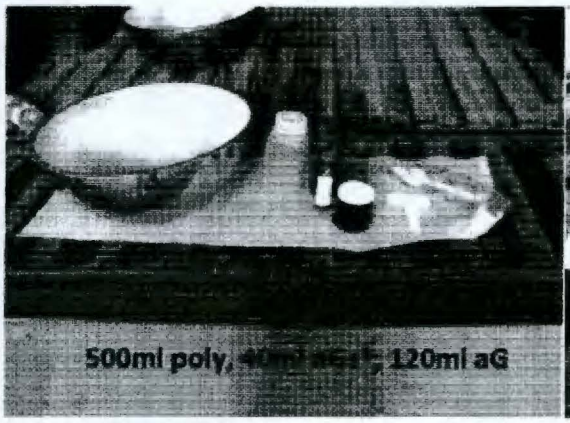
PPE: Safety glasses, Nitrile gloves, leather gloves safety boots, reflective clothing, and Hard hats.

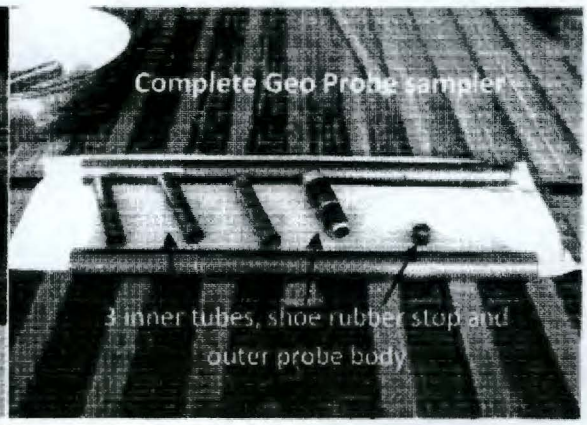
0630 - Filled Equipment Blank at the 6268 facility using Ultra-High Purity Water per TRVL-11-186. This was done by pouring the Ultra-High Purity Water over the Geo probe sleeves and shoe into a large stainless steel bowl. The water was then pumped into the certified clean sample bottles (lot #s1L aG-042319, 500ml P-HN03- 042749, 40 ml aGs* HCL - 0162050) using a peristaltic pump and clean tygon tubing. Sample # B2DVR7.

0730 - Arrived on site PFP Bldg 270-Z for pre-job.

0742 - Pre-job given by J. Mehrer and S. Hamblin.

0805 - On site of oil tank sampling. Began setting up for sampling evolution. All sample bottles have same lot number throughout evolution VOAs – 40ml aGs* - B-0-152-01VB, TPH- Diesel – 120ml aG – 028784, gross-alph/gross beta – 500 square poly – 036639.





0835 – While getting paper work set up it was noticed that the borehole labeling did not match the map in the TRVL-11-186, the stakes that identified the hole numbers were not in the correct location per the map. The BTR, PFP, PIC, GW FWS, site assessor, and Env Eng, were notified of the discrepancy. The Environmental Engineer agreed to re assign the C Numbers on the map to correlate to the position they were thought to have been sampled in, the new map was issued dated and will accompany the traveler and the paperwork.

0902 – Sample C8435 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, 40 percent recovery. Sample #: B2DVM2, B2DVP2. I-001 DUP Sample #: B2DVM3, B2DVP3. Filled VOAs, TPH, on both I-001 and I-001 DUP and was not able to recover any soil for gross alpha/ beta on I-001, per the attached priority email. The equipment from the Equipment Blank was used on this interval per GW-FWS. The field QC (FXR) was taken at this time Sample # B2DVR5 also with GW FWS concurrence.

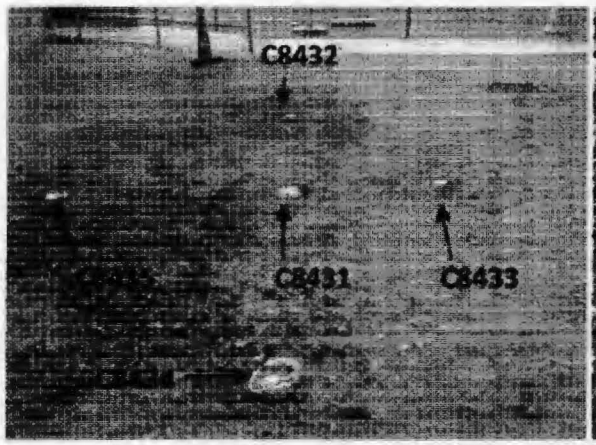
COPY
COPY

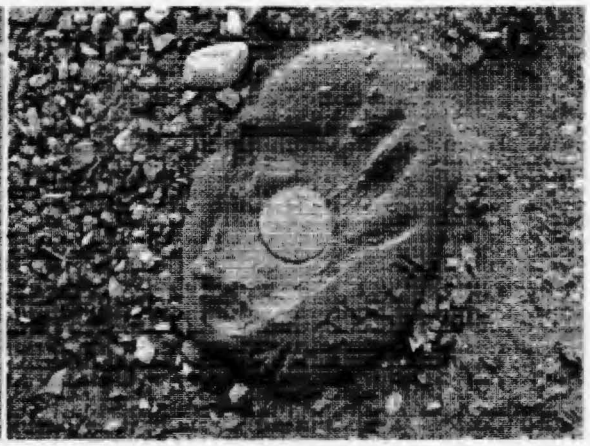
05/11/2011 Continued **LOG BOOK #:** HNF-N-507-19

1420 – Sample C8434 I-001 per direction of Site Assessor depth at 11-13 feet, soil in sampler, Again only 40 percent recovery. Sample #: B2DVM1, B2DVP1. I-001 DUP Sample #: B2DVM0, B2DVP0. Filled VOAs, TPH, on both I-001 and I-001 DUP and was not able to recover any soil for gross alpha/ beta on I-001, per the attached priority email.

1102 – RCT surveyed field sampling equipment. Triple rinsed cleaned all sampling equipment. After BTR assessed time left decided to call an end to sampling for the day due to time constraints. Set up push rig on next well site will start on C8435 on 05/11/2011. Disposed of the triple rinse water in large plastic bags filled with absorbent pads that where provided by PFP operations personnel. Discarded all waste per PFP project PIC.

COPY





1135– Off-site PFP.

1140 – Samples delivered and accepted at WSCF laboratory. Energy solutions driller and helper will finish sealing sample holes and place brass markers in correct locations of attached map.

COPY

Hogan, James G

From: Cox, William G (Bill)
Sent: Monday, May 09, 2011 4:15 PM
To: Hogan, James G; Patterson, Kevin C
Cc: Clinton, Richard (Rich); Olson, Kelly A
Subject: Sample Priority

This is to confirm what we discussed in the meeting for the PFP diesel storage tank sampling earlier today.

I understand that the sampler may not contain enough material for all proposed samples. Therefore, here is the priority.

The primary sample is the top priority, then if there is enough additional material the duplicate is the next priority. If there is not enough material for duplicate VOA and TPH, then the VOA is the next priority.

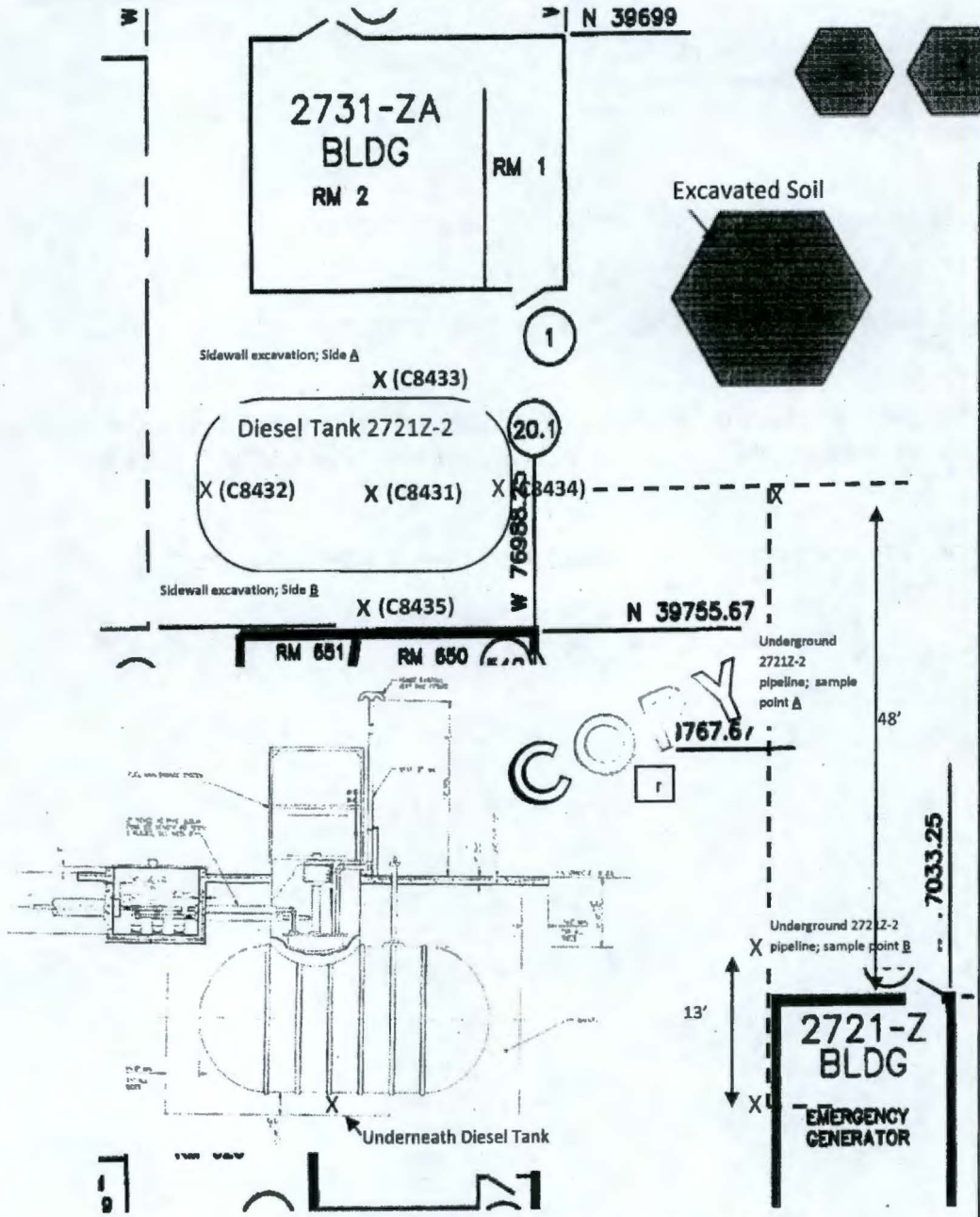
Anything left over after the primary and duplicate samples, can be used for the rad sample.

Bill Cox
PFP Environmental Compliance

5-10-11
J Hogan FWS CONCURRENCE

COPY

Updated Map May 11,2011



Sampling Instructions:

2721Z-2 UST Removal

- Take two (2) separate grab samples from each location marked with a red X for 22 samples.
- Collect samples from 1.) Bucket of the excavator, and/or 2.) soil pile(s).3.)and/or push sample from Geoprobe
- Two QA/QC samples required per day; or as directed by ECO or Designee.
- If an anomaly is noted; up to five (5) additional samples may be taken as directed by ECO or Designee.
- [redacted] Soil pile samples will be composite samples. Large soil pile will be a composite from two locations within pile. Small piles will be a composite of one sample from two piles and one sample from three piles.

NOTE: There are no directional arrows on this map. This is not to scale.

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		PAGE 1 OF 1	
		DATE/TIME MAY 11 2011 0902	
SAF NO.(S) F11-074			
LOCATION C8435; I-001		LOGBOOK NO./PAGE HNF-N-507-19.3	
WELL NAME C8435	ORIGINAL	WELL ID C8435	ACTUAL DEPTH 11-13 ☒ft ☐m
BOTTOM OF CASING (bgs) 11 ☒ft ☐m		BOTTOM OF BOREHOLE (bgs) 13 ☒ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 TOTAL NUMBER OF CHAINS 2 COLLECTOR JS Scales CHPRC

WSCF F11-074-069

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVM2	5 / 40mL / aGs	B-0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-070

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVP2	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVP2	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☒ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☒ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See Logbook 5/11/11 bb

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO BLUE CARD NO N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 11 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

PRINTED BY TMJOHANS ON 5/5/2011 10:50:20 AM A-6004-701 (REV 2)

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-070

COLLECTOR JS Scales CHPRC

COMPANY CONTACT EVANS, RT

TELEPHONE NO. 373-7924

PROJECT COORDINATOR EVANS, RT

PRICE CODE 8A

DATA TURNAROUND 3 Days / 15 Days

SAMPLING LOCATION C8435; I-001

PROJECT DESIGNATION PFP Diesel UST Removal Verification Sampling - Soil

SAF NO. F11-074

AIR QUALITY ☐

ICE CHEST NO.

FIELD LOGBOOK NO. HNF-N-507-19.3

ACTUAL SAMPLE DEPTH 11-13ft

COA 301901ES10

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO Waste Sampling & Characterization

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	GAS
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP2	SOIL	MAY 11 2011	0902	✓	N/C

COPY

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
~~JS Scales~~ CHPRC	1140 MAY 11 2011	M. Nelson Meals	MAY 11 2011 1140
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

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

N/C - Not collected per PAL

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-069

COLLECTOR
JS Scales
CHPRC

SAMPLING LOCATION
C8435; I-001

ICE CHEST NO.

SHIPPED TO
Waste Sampling & Characterization

COMPANY CONTACT
EVANS, RT

TELEPHONE NO.
373-7924

PROJECT COORDINATOR
EVANS, RT

PRICE CODE 8A

DATA TURNAROUND
3 Days / 15 Days

PROJECT DESIGNATION
PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.
F11-074

AIR QUALITY ☐

FIELD LOGBOOK NO.
HNF-N-507-19.3

ACTUAL SAMPLE DEPTH
11-13 ft

COA
301901ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

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	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

COPY

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM2	SOIL	MAY 11 2011	0907	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M Nelson M Neb	MAY 11 2011 1140

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A 6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-069

COLLECTOR JS Scales CHPRC	**COMPANY CONTACT** EVANS, RT	**TELEPHONE NO.** 373-7924	**PROJECT COORDINATOR** EVANS, RT	**PRICE CODE** 8A
SAMPLING LOCATION C8435; I-001	**PROJECT DESIGNATION** PFP Diesel UST Removal Verification Sampling - Soil		**SAF NO.** F11-074	**AIR QUALITY** ☐
ICE CHEST NO.	**FIELD LOGBOOK NO.** ~~INF-N-507-~~ 19-3	**ACTUAL SAMPLE DEPTH** 11-13 ft.	**COA** 301901ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A	

DATA TURNAROUND 3 Days / 15 Days

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

COPY

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Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8435; I-001

Sampler Initials and Date: MAY 1 1 2011 JS Scales CHPRC

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM2	K	29.15	34.22	5.07
B2DVM2	L	28.52	33.29	4.77
B2DVM2	M	28.94	34.14	5.20
B2DVM2	N	28.86	33.72	4.86
B2DVM2	P	28.50	33.42	4.92

COPY

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 1 1 2011 0902	
SAF NO.(S) F11-075			
LOCATION ~~C8435~~ bb 5-11-11 ~~C8438~~; CONTENGENCY; I-001 FXR		**LOGBOOK NO./PAGE** HNF-N-507-19.3	
WELL NAME ~~C8438~~ bb 5-11-11 C8435	**ORIGINAL**	**WELL ID** ~~C8438~~ bb 5-11-11 C8435	**ACTUAL DEPTH** 11-13 ☑ft ☐m
BOTTOM OF CASING (bgs) 11 ☑ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☑ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 3	**TOTAL NUMBER OF CHAINS** 1	**COLLECTOR** ~~JS Scales~~ CHPRC

WSCF F11-075-008

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVR5	3 / 40mL / aGs*	0162050	HCl or H2SO4 to pH <2/Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

FIELD INFORMATION

PURGE RATE N/A	☐ gpm ☐ Lpm	**TIME ON**	**TIME WATER**	**TIME PURGE**	**TIME SAMP**	**TIME OFF**
PURGE VOLUME REQUIRED N/A	☐ gal ☐ L	N/A	N/A	N/A	0902	N/A

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

FIELD MEASUREMENTS

SAMPLE NO.											
TIME											
pH (unitless)											
TEMP ☐°F ☐°C											
COND (µs/cm)											
TURB. (NTU)											
D.O. (mg/L)											
ORP (mV)											

See logbook 5/11/11 bb

COPY

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

RECORDED BY	B.E. Briggs CHPRC	BeBriggs	MAY 1 1 2011
	PRINT NAME	SIGN NAME	DATE
INDEPENDENT REVIEW			
	PRINT NAME	SIGN NAME	DATE

PRINTED BY TMJOHANS ON 5/5/2011 10:51:28 AM

A-6004-700 (REV 2)

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-008

COLLECTOR: JS Scales CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: 00 5.11.11 C8435 C8435; CONTENGENCY; I-001 FXR	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - QC		SAF NO.: F11-075
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-19-3	ACTUAL SAMPLE DEPTH: N/A	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 7C

AIR QUALITY: ☐

DATA TURNAROUND: 15 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

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	HCl or H2SO4 to pH <2/Cool~4C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs*
NO. OF CONTAINER(S)	3
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVR5	WATER	MAY 11 2011	0902	✓

COPY

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson M. Nelson	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV. 2)

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC

DATE/TIME 5/11/11 / 0230

SAF NO.(S) F11-075

LOCATION ~~C8438~~ bb5.11.11 C8435; CONTENGENCY; I-001 EB

LOGBOOK NO./PAGE HNF-N-507-19

WELL NAME ~~C8438~~ bb5.11.11 C8435

ORIGINAL

WELL ID ~~C8438~~ bb5.11.11 C8435

ACTUAL DEPTH N/A ☐ft ☐m

BOTTOM OF CASING (bgs) N/A ☐ft ☐m

BOTTOM OF BOREHOLE (bgs) N/A ☐ft ☐m

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 1 **COLLECTOR** KC Patterson CHPRC

WSCF F11-075-007

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVR7	3 / 40mL / aGs*	0162050	HCl or H2SO4 to pH <2/Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVR7	3 / 1L / aG	042319	HCl to pH <2/Cool~4C	SEE ITEM (2) IN SPECIAL INSTRUCTIONS
B2DVR7	1 / 500mL / G/P	042749	HNO3 to pH <2	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

COPY

ORIGINAL

FIELD CHARACTERIZATION WATER/OTHER LIQUID SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - QC		**PAGE** 2 **OF** 2	
		DATE/TIME 5/11/11 / 0630	
SAF NO.(S) F11-075			
LOCATION ~~C8438~~ 665.11.11; CONTENGENCY; I-001 EB		**LOGBOOK NO./PAGE** HNF-N-507	
WELL NAME ~~C8438~~ 665.11.11 C8435	**ORIGINAL**	**WELL ID** ~~C8438~~ 665.11.11 C8435	**ACTUAL DEPTH** N/A ☐ft ☐m
BOTTOM OF CASING (bgs) N/A ☐ft ☐m		**BOTTOM OF BOREHOLE (bgs)** N/A ☐ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7	**TOTAL NUMBER OF CHAINS** 1	**COLLECTOR**	KC Patterson CHPRC

FIELD INFORMATION

PURGE RATE N/A	☐ gpm ☐ Lpm	**TIME ON**	**TIME WATER**	**TIME PURGE**	**TIME SAMP**	**TIME OFF**
PURGE VOLUME REQUIRED N/A	☐ gal ☐ L	N/A	—		0630	N/A

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☑ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☐ OTHER

FIELD MEASUREMENTS

SAMPLE NO.											
TIME											
pH (unitless)											
TEMP ☐°F ☐°C											
COND (µs/cm)											
TURB. (NTU)											
D.O. (mg/L)											
ORP (mV)											

N/A

COPY

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☐ YES ☑ NO

RECORDED BY	KC Patterson CHPRC (PRINT NAME)	(SIGN NAME)	5/11/11 (DATE)
INDEPENDENT REVIEW	PRINT NAME	SIGN NAME	DATE

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil		**PAGE** 1 **OF** 1	
		DATE/TIME MAY 11 2011 1102	
SAF NO.(S) F11-074			
LOCATION C8434; I-001		**LOGBOOK NO./PAGE** HNF-N-507-19.3	
WELL NAME C8434	**ORIGINAL**	**WELL ID** C8434	**ACTUAL DEPTH** 11-13 ☑ft ☐m
BOTTOM OF CASING (bgs) 11 ☑ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☑ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** JS Scales CHPRC

WSCF F11-074-065

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVM0	5 / 40mL / aGs	B0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-066

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVP0	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVP0	1 / 500mL / G/P	0366391	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

COPY

See logbook 5/11/11 BB

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 11 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-066

COLLECTOR: JS Scales CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days		
SAMPLING LOCATION: C8434; I-001	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
AIR QUALITY: ☐			
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-~~N-507~~-19-3	ACTUAL SAMPLE DEPTH: 11-13 ft.	COA: 301901ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	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	~~None~~
HOLDING TIME	14/40 Days	~~6 Months~~ 5
TYPE OF CONTAINER	aG	~~aG~~
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP0	SOIL	MAY 11 2011	1102	✓	NC

COPY

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson	MAY 11 2011 1140

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

NC - Not collected per PAL

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-074-066	PAGE 2 OF 2
COLLECTOR JS Scales CHPRC	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 8A	DATA TURNAROUND 3 Days / 15 Days
SAMPLING LOCATION C8434; I-001	PROJECT DESIGNATION PFP Diesel UST Removal Verification Sampling - Soil		SAF NO. F11-074	AIR QUALITY ☐	
ICE CHEST NO.	FIELD LOGBOOK NO. ~~HNF-N-507-~~ 9-3	ACTUAL SAMPLE DEPTH 11-13ft.	COA 301901ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO Waste Sampling & Characterization	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

COPY

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-065

COLLECTOR JS Scales CHPRC

COMPANY CONTACT EVANS, RT

TELEPHONE NO. 373-7924

PROJECT COORDINATOR EVANS, RT

PRICE CODE 8A

DATA TURNAROUND 3 Days / 15 Days

SAMPLING LOCATION C8434; I-001

PROJECT DESIGNATION PFP Diesel UST Removal Verification Sampling - Soil

SAF NO. F11-074

AIR QUALITY ☐

ICE CHEST NO.

FIELD LOGBOOK NO. HNF -N-507- 19-3

ACTUAL SAMPLE DEPTH 11-13 ft

COA 301901ES10

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO Waste Sampling & Characterization

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	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM0	SOIL	MAY 11 2011	1102	✓

COPY

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	1140 MAY 11 2011	M. Nelson Hines	MAY 11 2011 1140

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-065

COLLECTOR JS Scales CHPRC	**COMPANY CONTACT** EVANS, RT	**TELEPHONE NO.** 373-7924	**PROJECT COORDINATOR** EVANS, RT
SAMPLING LOCATION C8434; I-001	**PROJECT DESIGNATION** PFP Diesel UST Removal Verification Sampling - Soil		**SAF NO.** F11-074
ICE CHEST NO.	**FIELD LOGBOOK NO.** HNF-N-507-19.3	**ACTUAL SAMPLE DEPTH** 11-13ft	**COA** 301901ES10
SHIPPED TO Waste Sampling & Characterization	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 8A

AIR QUALITY ☐

DATA TURNAROUND 3 Days / 15 Days

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

COPY

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

COPY

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8434; I-001

Sampler Initials and Date: ~~JS Scales~~ CHPRC MAY 11 2011

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM0	K	28.96	33.14	4.18
B2DVM0	L	28.60	33.31	4.71
B2DVM0	M	28.71	33.82	5.11
B2DVM0	N	28.27	33.94	5.67
B2DVM0	P	28.44	34.30	5.86

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

COPY

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil			**PAGE** 1 **OF** 1
			DATE/TIME MAY 1 1 2011
SAF NO.(S) F11-074			
LOCATION C8434; I-001 DUP		**LOGBOOK NO./PAGE** HNF-N-507-91.3	
WELL NAME C8434	**ORIGINAL**	**WELL ID** C8434	**ACTUAL DEPTH** 11-13 ☑ft ☐m
BOTTOM OF CASING (bgs) 11 ☑ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☑ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** JS Scales CHPRC

WSCF F11-074-067

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVM1	5 / 40mL / aGs	B0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-068

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVP1	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVP1	1 / 500mL / G/P	0366639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See Logbook 5/11/11

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 1 1 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

PRINTED BY TMJOHANS **ON** 5/5/2011 10:50:13 AM

ORIGINAL

A-6004-701 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-068

COLLECTOR JS Scales CHPRC

COMPANY CONTACT EVANS, RT

TELEPHONE NO. 373-7924

PROJECT COORDINATOR EVANS, RT

PRICE CODE 8A

DATA TURNAROUND 3 Days / 15 Days

SAMPLING LOCATION C8434; I-001 DUP

PROJECT DESIGNATION PFP Diesel UST Removal Verification Sampling - Soil

SAF NO. F11-074

AIR QUALITY ☐

ICE CHEST NO.

FIELD LOGBOOK NO. HNF-N-507-19-3

ACTUAL SAMPLE DEPTH 11-13ft

COA 301901ES10

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO Waste Sampling & Characterization

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	None
HOLDING TIME	14/40 Days	~~6 Months~~
TYPE OF CONTAINER	aG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP1	SOIL	MAY 11 2011	1102	✓	NC

COPY

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson M. Nelson	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

NC- Not collected per pal

LABORATORY SECTION **RECEIVED BY** **TITLE** **DATE/TIME**

FINAL SAMPLE DISPOSITION **DISPOSAL METHOD** **DISPOSED BY** **DATE/TIME**

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-067

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

AIR QUALITY: ☐

SAMPLING LOCATION: C8434; I-001 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-19-3

ACTUAL SAMPLE DEPTH: 11-13ft

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM1	SOIL	MAY 11 2011	1102	✓

COPY

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson Hines	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 5/5/2011

A-6001-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-074-067	PAGE 2 OF 2
COLLECTOR: JS Scales CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT	PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days
SAMPLING LOCATION: C8434; I-001 DUP	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074	AIR QUALITY: ☐	ORIGINAL
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-19-3	ACTUAL SAMPLE DEPTH: 11-13ft.	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

COPY

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8434, I-001 DUP

Sampler Initials and Date: JS Scales CHPRC MAY 11 2011

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM1	K	28.65	34.04	5.39
B2DVM1	L	28.77	33.31	4.54
B2DVM1	M	28.77	33.51	4.74
B2DVM1	N	28.35	33.77	5.42
B2DVM1	P	28.77	33.69	4.92

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

COPY

A-6005-526 (REV 0)

FIELD CHARACTERIZATION SOIL/OTHER SOLIDS SAMPLING REPORT

PROJECT(S) PFP Diesel UST Removal Verification Sampling - Soil			**PAGE** 1 **OF** 1
			DATE/TIME MAY 11 2011 0902
SAF NO.(S) F11-074			
LOCATION C8435; I-001 DUP		**LOGBOOK NO./PAGE** HNF-N-507-19-3	
WELL NAME C8435	**ORIGINAL**	**WELL ID** C8435	**ACTUAL DEPTH** 11-13 ☑ft ☐m
BOTTOM OF CASING (bgs) 11 ☑ft ☐m		**BOTTOM OF BOREHOLE (bgs)** 13 ☑ft ☐m	

SAMPLES COLLECTED

TOTAL NUMBER OF BOTTLES 7 **TOTAL NUMBER OF CHAINS** 2 **COLLECTOR** ~~JS Scales~~ CHPRC

WSCF F11-074-071

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVM3	5 / 40mL / aGs	B-0-152-01VB	Frozen/Cool <-7C and >-20C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

WSCF F11-074-072

SAMPLE NO.	BOTTLE QTY/SIZE/TYPE	LOT NO.	PRESERVATION	ANALYSIS
B2DVP3	1 / 120mL / aG	028784	Cool~4C	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B2DVP3	1 / 500mL / G/P	036639	None	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

COPY

FIELD INFORMATION

WHERE ARE SAMPLES LOCATED AT THIS TIME? ☐ WSCF ☐ 222-S ☐ MO-413 ☐ MO-745 ☐ 6269 ☑ OTHER

CONTAINER/DRUM/TOTE/BOX N/A

SAMPLE MATRIX DESCRIPTION ☑ SOIL ☐ SLUDGE ☐ RESIN ☐ GAC ☐ FILTER PAPER ☐ OTHER

FURTHER SAMPLE MATRIX EXPLANATION/DESCRIPTION [NOTE ANY ODOR, COLOR, TEXTURE (E.G., SLIMY, OILY, GRANULAR, ETC.)]

See logbook 5/11/11 bb

FIELD OBSERVATIONS

WEATHER

FIELD COMMENTS

SUPPORT PERSONNEL

SAMPLES SURVEYED BY RCT ☑ YES ☐ NO

IS A BLUE CARD REQUIRED ☐ YES ☑ NO **BLUE CARD NO** N/A

IS SRS PROVIDED AND COMPLETE ☑ YES ☐ NO

RECORDED BY B.E. Briggs CHPRC (PRINT NAME) BeBriggs (SIGN NAME) MAY 11 2011 (DATE)

INDEPENDENT REVIEW (PRINT NAME) (SIGN NAME) (DATE)

PRINTED BY TMJOHANS ON 5/5/2011 10:50:28 AM A-6004-701 (REV 2)

ORIGINAL

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-071

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C8435; I-001 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-19-3

ACTUAL SAMPLE DEPTH: 11-13ft

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM3	SOIL	MAY 11 2011	0902	✓

COPY

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	1140 MAY 11 2011	M. Nelson	MAY 11 2011 1140
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

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-074-071	PAGE 2 OF 2
COLLECTOR: JS Scales, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT	PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days
SAMPLING LOCATION: C8435; I-001 DUP	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074	AIR QUALITY: ☐	
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507-19-3	ACTUAL SAMPLE DEPTH: 11-13ft	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

COPY

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8435; I-001 DUP

Sampler Initials and Date: JS Soales CHPRC MAY 1 1 2011

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM3	K	28.34	33.47	5.13
B2DVM3	L	28.68	33.72	5.04
B2DVM3	M	28.33	34.03	5.7
B2DVM3	N	28.41	32.79	4.65
B2DVM3	P	28.56	33.44	4.88

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

COPY

A-6005-526 (REV 0)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-072

COLLECTOR JS Scales CHPRC

COMPANY CONTACT EVANS, RT

TELEPHONE NO. 373-7924

PROJECT COORDINATOR EVANS, RT

PRICE CODE 8A

DATA TURNAROUND 3 Days / 15 Days

AIR QUALITY ☐

SAMPLING LOCATION C8435; I-001 DUP

PROJECT DESIGNATION PFP Diesel UST Removal Verification Sampling - Soil

SAF NO. F11-074

ICE CHEST NO.

FIELD LOGBOOK NO. HNF-N-507-19.3

ACTUAL SAMPLE DEPTH 11-13ft

COA 301901ES10

METHOD OF SHIPMENT GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO Waste Sampling & Characterization

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP3	SOIL	MAY 11 2011	0902	✓	NC

COPY

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	H. Nelson Hines	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

NC=Not Collected per PAL

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A-6003-614 (REV 2)

Appendix C

Department of Ecology Alternative Sampling Plan Approval Email

Josh Owen

From: Blum, Mike (ECY) [MBLU461@ECY.WA.GOV]
Sent: Wednesday, May 04, 2011 5:38 PM
To: Josh Owen
Subject: RE: Hanford Decommissioning Alternative Plan Verification

Josh,
I looked at your sketch. I was thinking a total of 5 samples from the tank "pit". One sample from the bottom (middle of former tank area) and one from each end and each side. Usually, when samples are collected from a tank excavation, the site assessor can see what they are sampling. When necessary, they can focus on areas of stained or smelly soils. In your case, you're doing it "blind" because there is no excavation from which to collect samples. Therefore the greater number of samples from the "pit". Not sure of the scale of the drawing, but samples along the piping run should be at least every fifty feet and at locations where leakage is greatest (fittings, elbows, connections, etc.). Those requirements are identified in our Site Assessment guidance. http://www.ecy.wa.gov/biblio/9052.html

Mike Blum
Department of Ecology
UST & LUST Coordinator
360-407-6913
mblu461@ecy.wa.gov

From: Josh Owen [mailto:jowen-msba@gorge.net]
Sent: Wednesday, May 04, 2011 2:09 PM
To: Blum, Mike (ECY)
Subject: Hanford Decommissioning Alternative Plan Verification

Hi Mike:

We spoke earlier regarding the alternative sampling plan for the Hanford Nuclear Reservation diesel tank decommissioning using a Geoprobe. Based on my understanding of your sample location requests, I have prepared a site sketch illustrating the sample locations. Please send a quick reply to verify that the sample locations are what you had in mind. Please call me if you have any questions or if the sample locations are different than your recollection of our discussion.

Thank you,

Josh Owen
Project Manager

MSBA

Martin S. Burck Associates, Inc.
Geologic and Environmental Consulting Services

200 North Wasco Court
Hood River, Oregon 97031
Phone: 541 387 4422
Cell: 503 805 8797
Fax: 541 387 4813
Email: jowen-msba@gorge.net

Appendix D

Laboratory Analytical Reports

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

May 12, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112159

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112159

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112159
Data Deliverable Date 05/18/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-074	B2D1B6	112159001	SOIL	05/02/11	05/03/11
F11-074	B2D1B7	112159002	SOIL	05/02/11	05/03/11
F11-074	B2D1B8	112159003	SOIL	05/02/11	05/03/11
F11-074	B2D1B9	112159004	SOIL	05/02/11	05/03/11
F11-074	B2D1C0	112159005	SOIL	05/02/11	05/03/11
F11-074	B2D1C1	112159006	SOIL	05/02/11	05/03/11
F11-074	B2D1C2	112159007	SOIL	05/02/11	05/03/11
F11-074	B2D1C3	112159008	SOIL	05/02/11	05/03/11
F11-074	B2D1C4	112159009	SOIL	05/02/11	05/03/11
F11-074	B2D1C5	112159010	SOIL	05/02/11	05/03/11
F11-074	B2D1C6	112159011	SOIL	05/02/11	05/03/11
F11-074	B2D1C7	112159012	SOIL	05/02/11	05/03/11
F11-074	B2D174	112159013	SOIL	05/02/11	05/03/11
F11-074	B2D175	112159014	SOIL	05/02/11	05/03/11
F11-074	B2D176	112159015	SOIL	05/02/11	05/03/11
F11-074	B2D177	112159016	SOIL	05/02/11	05/03/11
F11-074	B2D178	112159017	SOIL	05/02/11	05/03/11
F11-074	B2D179	112159018	SOIL	05/02/11	05/03/11
F11-074	B2D180	112159019	SOIL	05/02/11	05/03/11
F11-074	B2D181	112159020	SOIL	05/02/11	05/03/11
F11-074	B2D182	112159021	SOIL	05/02/11	05/03/11
F11-074	B2D183	112159022	SOIL	05/02/11	05/03/11
F11-074	B2D184	112159023	SOIL	05/02/11	05/03/11
F11-074	B2D185	112159024	SOIL	05/02/11	05/03/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112159

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

TPHD-WA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112159

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gross Alpha / Gross Beta:
  - Batch QC 181565
    - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
    - All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 86 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF112159
Report Date	May 12, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181563	181651	1	BLANK	54705	BLANK		Extractable Diesel and Petroleum
181563	181651	2	LCS	54706	LCS		Extractable Diesel and Petroleum
181563	181651	3	MS	54707	B2D1B8(112159003MS)	112159003	Extractable Diesel and Petroleum
181563	181651	4	MSD	54708	B2D1B8(112159003MSD)	112159003	Extractable Diesel and Petroleum
181563	181651	5	SAMPLE	112159001	B2D1B6		Extractable Diesel and Petroleum
181563	181651	6	SAMPLE	112159002	B2D1B7		Extractable Diesel and Petroleum
181563	181651	7	SAMPLE	112159003	B2D1B8		Extractable Diesel and Petroleum
181563	181651	8	SAMPLE	112159004	B2D1B9		Extractable Diesel and Petroleum
181563	181651	9	SAMPLE	112159005	B2D1C0		Extractable Diesel and Petroleum
181563	181651	10	SAMPLE	112159006	B2D1C1		Extractable Diesel and Petroleum
181563	181651	11	SAMPLE	112159007	B2D1C2		Extractable Diesel and Petroleum
181563	181651	12	SAMPLE	112159008	B2D1C3		Extractable Diesel and Petroleum
181563	181651	13	SAMPLE	112159009	B2D1C4		Extractable Diesel and Petroleum
181563	181651	14	SAMPLE	112159010	B2D1C5		Extractable Diesel and Petroleum
181563	181651	15	SAMPLE	112159011	B2D1C6		Extractable Diesel and Petroleum
181563	181651	16	SAMPLE	112159012	B2D1C7		Extractable Diesel and Petroleum

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181578	181579	1	BLANK	54377	BLANK		SW-846 8260B Volatiles, separate prep
181578	181579	2	LCS	55166	LCS		SW-846 8260B Volatiles, separate prep
181578	181579	3	MS	55167	B2D4K2(112114002MS)	112114002	SW-846 8260B Volatiles, separate prep
181578	181579	4	MSD	55168	B2D4K2(112114002MSD)	112114002	SW-846 8260B Volatiles, separate prep
181578	181579	8	SAMPLE	112159013	B2D174		SW-846 8260B Volatiles, separate prep
181578	181579	9	SAMPLE	112159014	B2D175		SW-846 8260B Volatiles, separate prep
181578	181579	10	SAMPLE	112159015	B2D176		SW-846 8260B Volatiles, separate prep
181578	181579	11	SAMPLE	112159016	B2D177		SW-846 8260B Volatiles, separate prep
181578	181579	12	SAMPLE	112159017	B2D178		SW-846 8260B Volatiles, separate prep
181578	181579	13	SAMPLE	112159018	B2D179		SW-846 8260B Volatiles, separate prep
181578	181579	14	SAMPLE	112159019	B2D180		SW-846 8260B Volatiles, separate prep
181578	181579	15	SAMPLE	112159020	B2D181		SW-846 8260B Volatiles, separate prep
181580	181581	1	BLANK	54775	BLANK		SW-846 8260B Volatiles, separate prep
181580	181581	2	LCS	54776	LCS		SW-846 8260B Volatiles, separate prep
181580	181581	3	MS	54777	B2D182(112159021MS)	112159021	SW-846 8260B Volatiles, separate prep
181580	181581	4	MSD	54778	B2D182(112159021MSD)	112159021	SW-846 8260B Volatiles, separate prep
181580	181581	5	SAMPLE	112159021	B2D182		SW-846 8260B Volatiles, separate prep
181580	181581	6	SAMPLE	112159022	B2D183		SW-846 8260B Volatiles, separate prep
181580	181581	7	SAMPLE	112159023	B2D184		SW-846 8260B Volatiles, separate prep
181580	181581	8	SAMPLE	112159024	B2D185		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181564	181655	1	BLANK	54711	BLANK		Gross Alpha/Gross Beta
181564	181655	2	LCS	54712	LCS		Gross Alpha/Gross Beta
181564	181655	3	SAMPLE	112159001	B2D1B6		Gross Alpha/Gross Beta
181564	181655	4	DUP	54713	B2D1B6(112159001DUP)	112159001	Gross Alpha/Gross Beta
181564	181655	5	SAMPLE	112159002	B2D1B7		Gross Alpha/Gross Beta
181564	181655	6	SAMPLE	112159003	B2D1B8		Gross Alpha/Gross Beta
181564	181655	7	SAMPLE	112159004	B2D1B9		Gross Alpha/Gross Beta
181564	181655	8	SAMPLE	112159005	B2D1C0		Gross Alpha/Gross Beta
181564	181655	9	SAMPLE	112159006	B2D1C1		Gross Alpha/Gross Beta
181565	181656	1	BLANK	54714	BLANK		Gross Alpha/Gross Beta
181565	181656	2	LCS	54715	LCS		Gross Alpha/Gross Beta
181565	181656	3	SAMPLE	112159007	B2D1C2		Gross Alpha/Gross Beta
181565	181656	4	DUP	54716	B2D1C2(112159007DUP)	112159007	Gross Alpha/Gross Beta
181565	181656	5	SAMPLE	112159008	B2D1C3		Gross Alpha/Gross Beta
181565	181656	6	SAMPLE	112159009	B2D1C4		Gross Alpha/Gross Beta
181565	181656	7	SAMPLE	112159010	B2D1C5		Gross Alpha/Gross Beta
181565	181656	8	SAMPLE	112159011	B2D1C6		Gross Alpha/Gross Beta
181565	181656	9	SAMPLE	112159012	B2D1C7		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181706	181706	4	SAMPLE	112159021	B2D182		Dry Weight/Percent Moisture
181706	181706	5	SAMPLE	112159022	B2D183		Dry Weight/Percent Moisture
181706	181706	6	SAMPLE	112159023	B2D184		Dry Weight/Percent Moisture
181706	181706	7	SAMPLE	112159024	B2D185		Dry Weight/Percent Moisture
181733	181733	1	SAMPLE	112159001	B2D1B6		Dry Weight/Percent Moisture
181733	181733	2	SAMPLE	112159002	B2D1B7		Dry Weight/Percent Moisture
181733	181733	3	SAMPLE	112159003	B2D1B8		Dry Weight/Percent Moisture
181733	181733	4	SAMPLE	112159004	B2D1B9		Dry Weight/Percent Moisture
181733	181733	5	SAMPLE	112159005	B2D1C0		Dry Weight/Percent Moisture
181733	181733	6	SAMPLE	112159006	B2D1C1		Dry Weight/Percent Moisture
181733	181733	7	SAMPLE	112159007	B2D1C2		Dry Weight/Percent Moisture
181733	181733	8	SAMPLE	112159008	B2D1C3		Dry Weight/Percent Moisture
181733	181733	9	SAMPLE	112159009	B2D1C4		Dry Weight/Percent Moisture
181733	181733	10	SAMPLE	112159010	B2D1C5		Dry Weight/Percent Moisture
181733	181733	11	SAMPLE	112159011	B2D1C6		Dry Weight/Percent Moisture
181733	181733	12	SAMPLE	112159012	B2D1C7		Dry Weight/Percent Moisture
181733	181733	13	SAMPLE	112159013	B2D174		Dry Weight/Percent Moisture
181733	181733	14	SAMPLE	112159014	B2D175		Dry Weight/Percent Moisture
181733	181733	15	SAMPLE	112159015	B2D176		Dry Weight/Percent Moisture
181733	181733	16	SAMPLE	112159016	B2D177		Dry Weight/Percent Moisture
181733	181733	17	SAMPLE	112159017	B2D178		Dry Weight/Percent Moisture
181733	181733	18	SAMPLE	112159018	B2D179		Dry Weight/Percent Moisture
181733	181733	19	SAMPLE	112159019	B2D180		Dry Weight/Percent Moisture

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181733	181733	20	SAMPLE	112159020	B2D181		Dry Weight/Percent Moisture

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412	Total Residual Percent Solids Dried at 103 - 105 Degrees C		
	EPA-600/4-79-020	160.3	Total Residue
	Standard Methods	2540B	Total Solids Dried at 103-105 C
	HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159001
SAF# F11-074
Sample ID B2D1B6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159002
SAF# F11-074
Sample ID B2D1B7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159003
SAF# F11-074
Sample ID B2D1B8

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159004
SAF# F11-074
Sample ID B2D1B9

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493		9.0		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159005
SAF# F11-074
Sample ID B2D1C0

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159006
SAF# F11-074
Sample ID B2D1C1

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159007
SAF# F11-074
Sample ID B2D1C2

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159008
SAF# F11-074
Sample ID B2D1C3

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159009
SAF# F11-074
Sample ID B2D1C4

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159010
SAF# F11-074
Sample ID B2D1C5

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159011
SAF# F11-074
Sample ID B2D1C6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Sample # 112159012
SAF# F11-074
Sample ID B2D1C7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/03/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<4		mg/kg	1	4	5	05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159013
SAF# F11-074
Sample ID B2D174

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159014
SAF# F11-074
Sample ID B2D175

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159015
SAF# F11-074
Sample ID B2D176

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.8		ug/kg	1	0.8	4	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159016
SAF# F11-074
Sample ID B2D177

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159017
SAF# F11-074
Sample ID B2D178

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.9		ug/kg	1	0.9	4	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159018
SAF# F11-074
Sample ID B2D179

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159019
SAF# F11-074
Sample ID B2D180

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	7	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159020
SAF# F11-074
Sample ID B2D181

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159021
SAF# F11-074
Sample ID B2D182

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	6	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159022
SAF# F11-074
Sample ID B2D183

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159023
SAF# F11-074
Sample ID B2D184

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Toluene	108-88-3	LA-523-455	J	1.9		ug/kg	1	0.9	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Sample # 112159024
SAF# F11-074
Sample ID B2D185

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/03/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<0.9		ug/kg	1	0.9	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary dilution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159001
SAF# F11-074
Sample ID B2D1B6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		3.0	.96	pCi/g	1	1.0		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.8	1.1	pCi/g	1	1.6		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159002
SAF# F11-074
Sample ID B2D1B7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.86	.64	pCi/g	1	1.0		05/05/11
Gross Beta	12587-47-2	LA-508-415	U	1.2	.99	pCi/g	1	1.7		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159003
SAF# F11-074
Sample ID B2D1B8

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.7	.78	pCi/g	1	1.0		05/05/11
Gross Beta	12587-47-2	LA-508-415		1.9	1	pCi/g	1	1.7		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159004
SAF# F11-074
Sample ID B2D1B9

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.6	.73	pCi/g	1	0.97		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.2	1	pCi/g	1	1.7		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159005
SAF# F11-074
Sample ID B2D1C0

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.1	.85	pCi/g	1	1.0		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.1	1	pCi/g	1	1.7		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159006
SAF# F11-074
Sample ID B2D1C1

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.9	.82	pCi/g	1	1.0		05/05/11
Gross Beta	12587-47-2	LA-508-415	U	1.1	.97	pCi/g	1	1.7		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159007
SAF# F11-074
Sample ID B2D1C2

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.1	.94	pCi/g	1	1.3		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.6	.99	pCi/g	1	1.5		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159008
SAF# F11-074
Sample ID B2D1C3

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.7	.9	pCi/g	1	1.3		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.6	1	pCi/g	1	1.5		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159009
SAF# F11-074
Sample ID B2D1C4

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.83	.76	pCi/g	1	1.2		05/05/11
Gross Beta	12587-47-2	LA-508-415		1.6	.95	pCi/g	1	1.5		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159010
SAF# F11-074
Sample ID B2D1C5

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.8	.89	pCi/g	1	1.3		05/05/11
Gross Beta	12587-47-2	LA-508-415		3.0	1	pCi/g	1	1.4		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159011
SAF# F11-074
Sample ID B2D1C6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.89	.7	pCi/g	1	1.1		05/05/11
Gross Beta	12587-47-2	LA-508-415		2.5	.92	pCi/g	1	1.4		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

Sample # 112159012
SAF# F11-074
Sample ID B2D1C7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/03/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.2	.76	pCi/g	1	1.2		05/05/11
Gross Beta	12587-47-2	LA-508-415	U	1.3	.89	pCi/g	1	1.5		05/05/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159001
SAF# F11-074
Sample ID B2D1B6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159002
SAF# F11-074
Sample ID B2D1B7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159003
SAF# F11-074
Sample ID B2D1B8

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159004
SAF# F11-074
Sample ID B2D1B9

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		93		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159005
SAF# F11-074
Sample ID B2D1C0

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159006
SAF# F11-074
Sample ID B2D1C1

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159007
SAF# F11-074
Sample ID B2D1C2

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159008
SAF# F11-074
Sample ID B2D1C3

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159009
SAF# F11-074
Sample ID B2D1C4

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159010
SAF# F11-074
Sample ID B2D1C5

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159011
SAF# F11-074
Sample ID B2D1C6

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159012
SAF# F11-074
Sample ID B2D1C7

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159013
SAF# F11-074
Sample ID B2D174

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159014
SAF# F11-074
Sample ID B2D175

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159015
SAF# F11-074
Sample ID B2D176

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159016
SAF# F11-074
Sample ID B2D177

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159017
SAF# F11-074
Sample ID B2D178

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159018
SAF# F11-074
Sample ID B2D179

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		93		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159019
SAF# F11-074
Sample ID B2D180

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159020
SAF# F11-074
Sample ID B2D181

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159021
SAF# F11-074
Sample ID B2D182

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159022
SAF# F11-074
Sample ID B2D183

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159023
SAF# F11-074
Sample ID B2D184

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112159

Sample # 112159024
SAF# F11-074
Sample ID B2D185

Matrix SOIL
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/03/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/03/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

QC Batch 181563 **Test** Extractable Diesel and Petroleum
Associated Samples 112159001, 112159002, 112159003, 112159004, 112159005, 112159006, 112159007, 112159008, 112159009, 112159010, 112159011, 112159012

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #54705**							
Diesel	TPHDIESEL		<4	mg/kg					U	05/05/11
LCS			**QC Sample #54706**							
Diesel	TPHDIESEL		130	mg/kg	126.3	70 - 130				05/05/11
MS			**QC Sample #54707**							
			Original 112159003							
Diesel	TPHDIESEL	<4	520	mg/kg	119.1	70 - 130				05/05/11
MSD			**QC Sample #54708**							
			Original 112159003					**Paired**	**54707**	
Diesel	TPHDIESEL	<4	580	mg/kg	117.7	70 - 130	1.20	30		05/05/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

QC Batch 181564 **Test** Gross Alpha/Gross Beta
Associated Samples 112159001, 112159002, 112159003, 112159004, 112159005, 112159006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #54711**							
Gross Alpha	12587-46-1		0.21	pCi/g					U	05/05/11
Gross Beta	12587-47-2		-0.68	pCi/g					U	05/05/11
LCS			**QC Sample #54712**							
Gross Alpha	12587-46-1		8.5	pCi/g	104.6	80 - 120				05/05/11
Gross Beta	12587-47-2		25	pCi/g	112.2	80 - 120				05/05/11
DUP			**QC Sample #54713**							
			Original 112159001							
Gross Alpha	12587-46-1	3.0	2.4	pCi/g			19.60	30		05/05/11
Gross Beta	12587-47-2	2.8	2.4	pCi/g			16.70	30		05/05/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112159

QC Batch 181565 **Test** Gross Alpha/Gross Beta
Associated Samples 112159007, 112159008, 112159009, 112159010, 112159011, 112159012

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #54714**								
Gross Alpha	12587-46-1		2.1E-3	pCi/g						U	05/05/11
Gross Beta	12587-47-2		0.024	pCi/g						U	05/05/11
LCS			**QC Sample #54715**								
Gross Alpha	12587-46-1		8.2	pCi/g	100.9	80 - 120					05/05/11
Gross Beta	12587-47-2		24	pCi/g	108.6	80 - 120					05/05/11
DUP			**QC Sample #54716**								
			Original 112159007								
Gross Alpha	12587-46-1	2.1	0.78	pCi/g			92.00	30	*	U	05/05/11
Gross Beta	12587-47-2	2.6	1.8	pCi/g			38.10	30	*	X	05/05/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

QC Batch 181578 **Test** SW-846 8260B Volatiles, separate prep
Associated Samples 112159013, 112159014, 112159015, 112159016, 112159017, 112159018, 112159019, 112159020

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #54377**							
1,1-Dichloroethene	75-35-4		<1	ug/kg					U	05/04/11
Trichloroethene	79-01-6		<1	ug/kg					U	05/04/11
Benzene	71-43-2		<1	ug/kg					U	05/04/11
Toluene	108-88-3		<1	ug/kg					U	05/04/11
Chlorobenzene	108-90-7		<1	ug/kg					U	05/04/11
Ethylbenzene	100-41-4		<1	ug/kg					U	05/04/11
Total Xylenes	1330-20-7		<1	ug/kg					U	05/04/11
LCS			**QC Sample #55166**							
1,1-Dichloroethene	75-35-4		30	ug/kg	118.1	50 - 131				05/04/11
Trichloroethene	79-01-6		20	ug/kg	78.9	66 - 119				05/04/11
Benzene	71-43-2		22	ug/kg	87.8	73 - 123				05/04/11
Toluene	108-88-3		24	ug/kg	95.7	77 - 128				05/04/11
Chlorobenzene	108-90-7		24	ug/kg	97.3	81 - 126				05/04/11
Ethylbenzene	100-41-4		22	ug/kg	86.2	75 - 125				05/04/11
MS			**QC Sample #55167**							
			Original 112114002							
1,1-Dichloroethene	75-35-4		26	ug/kg	111.4	75 - 125				05/04/11
Trichloroethene	79-01-6		20	ug/kg	84.2	75 - 125				05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2		23	ug/kg	96.2	75 - 125				05/04/11
Toluene	108-88-3		23	ug/kg	97.7	75 - 125				05/04/11
Chlorobenzene	108-90-7		23	ug/kg	96.7	75 - 125				05/04/11
Ethylbenzene	100-41-4		19	ug/kg	82.2	75 - 125				05/04/11
MSD			**QC Sample #55168**							
			Original 112114002					**Paired**	**55167**	
1,1-Dichloroethene	75-35-4		26	ug/kg	111.2	75 - 125	0.20	30		05/04/11
Trichloroethene	79-01-6		20	ug/kg	85.6	75 - 125	1.60	30		05/04/11
Benzene	71-43-2		22	ug/kg	95.4	75 - 125	0.80	30		05/04/11
Toluene	108-88-3		23	ug/kg	98.7	75 - 125	1.00	30		05/04/11
Chlorobenzene	108-90-7		23	ug/kg	99.4	75 - 125	2.80	30		05/04/11
Ethylbenzene	100-41-4		20	ug/kg	85.7	75 - 125	4.20	30		05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

QC Batch 181580
Associated Samples 112159021, 112159022, 112159023, 112159024

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #54775**							
1,1-Dichloroethene	75-35-4		<1	ug/kg					U	05/04/11
Trichloroethene	79-01-6		<1	ug/kg					U	05/04/11
Benzene	71-43-2		<1	ug/kg					U	05/04/11
Toluene	108-88-3		<1	ug/kg					U	05/04/11
Chlorobenzene	108-90-7		<1	ug/kg					U	05/04/11
Ethylbenzene	100-41-4		<1	ug/kg					U	05/04/11
Total Xylenes	1330-20-7		<1	ug/kg					U	05/04/11
LCS			**QC Sample #54776**							
1,1-Dichloroethene	75-35-4		19	ug/kg	77.1	50 - 131				05/04/11
Trichloroethene	79-01-6		21	ug/kg	85.4	66 - 119				05/04/11
Benzene	71-43-2		23	ug/kg	91.4	73 - 123				05/04/11
Toluene	108-88-3		23	ug/kg	92.7	77 - 128				05/04/11
Chlorobenzene	108-90-7		24	ug/kg	97	81 - 126				05/04/11
Ethylbenzene	100-41-4		22	ug/kg	88.4	75 - 125				05/04/11
MS			**QC Sample #54777**							
			Original 112159021							
1,1-Dichloroethene	75-35-4	<1	17	ug/kg	80.2	75 - 125				05/04/11
Trichloroethene	79-01-6	<1	26	ug/kg	121.9	75 - 125				05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2	<1	20	ug/kg	95.1	75 - 125				05/04/11
Toluene	108-88-3	<1	20	ug/kg	91	75 - 125				05/04/11
Chlorobenzene	108-90-7	<1	20	ug/kg	95.1	75 - 125				05/04/11
Ethylbenzene	100-41-4	<1	19	ug/kg	87.6	75 - 125				05/04/11
MSD			**QC Sample #54778**							
			Original 112159021					**Paired**	**54777**	
1,1-Dichloroethene	75-35-4	<1	17	ug/kg	78.5	75 - 125	2.10	30		05/04/11
Trichloroethene	79-01-6	<1	25	ug/kg	118.7	75 - 125	2.70	30		05/04/11
Benzene	71-43-2	<1	20	ug/kg	95.3	75 - 125	0.20	30		05/04/11
Toluene	108-88-3	<1	19	ug/kg	90.3	75 - 125	0.80	30		05/04/11
Chlorobenzene	108-90-7	<1	20	ug/kg	94.6	75 - 125	0.50	30		05/04/11
Ethylbenzene	100-41-4	<1	19	ug/kg	91.7	75 - 125	4.60	30		05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

QC Batch 181563 **Test** Extractable Diesel and Petroleum
Associated Samples 112159001, 112159002, 112159003, 112159004, 112159005, 112159006, 112159007, 112159008, 112159009, 112159010, 112159011, 112159012

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112159001**							
o-Terphenyl	84-15-1				124.9	70 - 130				05/05/11
SAMPLE			**Sample #112159002**							
o-Terphenyl	84-15-1				104.9	70 - 130				05/05/11
SAMPLE			**Sample #112159003**							
o-Terphenyl	84-15-1				111.9	70 - 130				05/05/11
SAMPLE			**Sample #112159004**							
o-Terphenyl	84-15-1				98.3	70 - 130				05/05/11
SAMPLE			**Sample #112159005**							
o-Terphenyl	84-15-1				108.4	70 - 130				05/05/11
SAMPLE			**Sample #112159006**							
o-Terphenyl	84-15-1				114.4	70 - 130				05/05/11
SAMPLE			**Sample #112159007**							
o-Terphenyl	84-15-1				104.8	70 - 130				05/05/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112159008**							
o-Terphenyl	84-15-1				117.6	70 - 130				05/05/11
SAMPLE			**Sample #112159009**							
o-Terphenyl	84-15-1				100.5	70 - 130				05/05/11
SAMPLE			**Sample #112159010**							
o-Terphenyl	84-15-1				104.9	70 - 130				05/05/11
SAMPLE			**Sample #112159011**							
o-Terphenyl	84-15-1				112	70 - 130				05/05/11
SAMPLE			**Sample #112159012**							
o-Terphenyl	84-15-1				104.2	70 - 130				05/05/11
BLANK			**QC Sample #54705**							
o-Terphenyl	84-15-1				115.3	70 - 130				05/05/11
LCS			**QC Sample #54706**							
o-Terphenyl	84-15-1				140.3	50 - 150				05/05/11
MS			**QC Sample #54707**							
			Original 112159003							
o-Terphenyl	84-15-1				137.1	50 - 150				05/05/11
MSD			**QC Sample #54708**							
			Original 112159003						**Paired 54707**	
o-Terphenyl	84-15-1				136.7	50 - 150	0.30	30		05/05/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

QC Batch 181578 **Test** SW-846 8260B Volatiles, separate prep
Associated Samples 112159013, 112159014, 112159015, 112159016, 112159017, 112159018, 112159019, 112159020

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112159013**							
1,2-Dichloroethane-d4	17060-07-0				107.6	77 - 137				05/04/11
Toluene-d8	2037-26-5				80.2	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				75.9	66 - 125				05/04/11
SAMPLE			**Sample #112159014**							
1,2-Dichloroethane-d4	17060-07-0				114.6	77 - 137				05/04/11
Toluene-d8	2037-26-5				79.8	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				79.9	66 - 125				05/04/11
SAMPLE			**Sample #112159015**							
1,2-Dichloroethane-d4	17060-07-0				113	77 - 137				05/04/11
Toluene-d8	2037-26-5				82.1	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				76.1	66 - 125				05/04/11
SAMPLE			**Sample #112159016**							
1,2-Dichloroethane-d4	17060-07-0				116	77 - 137				05/04/11
Toluene-d8	2037-26-5				80.3	78 - 122				05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				75.9	66 - 125				05/04/11
SAMPLE			**Sample #112159017**							
1,2-Dichloroethane-d4	17060-07-0				117.4	77 - 137				05/04/11
Toluene-d8	2037-26-5				78.4	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				79	66 - 125				05/04/11
SAMPLE			**Sample #112159018**							
1,2-Dichloroethane-d4	17060-07-0				113.7	77 - 137				05/04/11
Toluene-d8	2037-26-5				78.8	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				78.4	66 - 125				05/04/11
SAMPLE			**Sample #112159019**							
1,2-Dichloroethane-d4	17060-07-0				116.4	77 - 137				05/04/11
Toluene-d8	2037-26-5				80.7	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				76.2	66 - 125				05/04/11
SAMPLE			**Sample #112159020**							
1,2-Dichloroethane-d4	17060-07-0				111.9	77 - 137				05/04/11
Toluene-d8	2037-26-5				80.2	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				76.3	66 - 125				05/04/11
BLANK			**QC Sample #54377**							

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
1,2-Dichloroethane-d4	17060-07-0				106.6	77 - 137				05/04/11
Toluene-d8	2037-26-5				80.9	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				78.2	66 - 125				05/04/11
LCS			**QC Sample #55166**							
1,2-Dichloroethane-d4	17060-07-0				106.2	77 - 137				05/04/11
Toluene-d8	2037-26-5				90.3	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				99.9	66 - 125				05/04/11
MS			**QC Sample #55167**							
			Original	**112114002**						
1,2-Dichloroethane-d4	17060-07-0				108.2	77 - 137				05/04/11
Toluene-d8	2037-26-5				93.4	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				96	66 - 125				05/04/11
MSD			**QC Sample #55168**							
			Original	**112114002**				**Paired**	**55167**	
1,2-Dichloroethane-d4	17060-07-0				104.5	77 - 137	3.50	30		05/04/11
Toluene-d8	2037-26-5				89.9	78 - 122	3.80	30		05/04/11
4-Bromofluorobenzene	460-00-4				95.1	66 - 125	0.90	30		05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

QC Batch 181580
Associated Samples 112159021, 112159022, 112159023, 112159024

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112159021**							
1,2-Dichloroethane-d4	17060-07-0				118	77 - 137				05/04/11
Toluene-d8	2037-26-5				92.6	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				94.3	66 - 125				05/04/11
SAMPLE			**Sample #112159022**							
1,2-Dichloroethane-d4	17060-07-0				120.2	77 - 137				05/04/11
Toluene-d8	2037-26-5				95	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				95	66 - 125				05/04/11
SAMPLE			**Sample #112159023**							
1,2-Dichloroethane-d4	17060-07-0				120.5	77 - 137				05/04/11
Toluene-d8	2037-26-5				97.8	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				97.7	66 - 125				05/04/11
SAMPLE			**Sample #112159024**							
1,2-Dichloroethane-d4	17060-07-0				121.6	77 - 137				05/04/11
Toluene-d8	2037-26-5				96	78 - 122				05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112159

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				97.9	66 - 125				05/04/11
BLANK			**QC Sample #54775**							
1,2-Dichloroethane-d4	17060-07-0				114.6	77 - 137				05/04/11
Toluene-d8	2037-26-5				95.6	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				108.3	66 - 125				05/04/11
LCS			**QC Sample #54776**							
1,2-Dichloroethane-d4	17060-07-0				116.1	77 - 137				05/04/11
Toluene-d8	2037-26-5				98.3	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				119	66 - 125				05/04/11
MS			**QC Sample #54777**							
			Original	**112159021**						
1,2-Dichloroethane-d4	17060-07-0				116.7	77 - 137				05/04/11
Toluene-d8	2037-26-5				97.9	78 - 122				05/04/11
4-Bromofluorobenzene	460-00-4				108.7	66 - 125				05/04/11
MSD			**QC Sample #54778**							
			Original	**112159021**				**Paired**	**54777**	
1,2-Dichloroethane-d4	17060-07-0				113	77 - 137	3.20	30		05/04/11
Toluene-d8	2037-26-5				96.2	78 - 122	1.80	30		05/04/11
4-Bromofluorobenzene	460-00-4				104.6	66 - 125	3.80	30		05/04/11

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF112159

Quality Control Comments

Department Radiochemistry

54716 B2D1C2(112159007DUP)

Analyte Gross Beta - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 51 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112159
Profile #: F11-074-033
Proj. Mgr.:
Phone:

The following samples were received from you on 5/3/2011 8:00:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112159001	B2D1B6	SOIL	5/2/2011 14:15	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159002	B2D1B7	SOIL	5/2/2011 14:15	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159003	B2D1B8	SOIL	5/2/2011 13:55	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159004	B2D1B9	SOIL	5/2/2011 13:55	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159005	B2D1C0	SOIL	5/2/2011 14:55	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159006	B2D1C1	SOIL	5/2/2011 14:55	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159007	B2D1C2	SOIL	5/2/2011 14:40	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159008	B2D1C3	SOIL	5/2/2011 14:40	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159009	B2D1C4	SOIL	5/2/2011 14:22	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159010	B2D1C5	SOIL	5/2/2011 14:22	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159011	B2D1C6	SOIL	5/2/2011 14:30	5/3/2011 08:00

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159012	B2D1C7	SOIL	5/2/2011 14:30	5/3/2011 08:00
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112159013	B2D174	SOIL	5/2/2011 14:15	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159014	B2D175	SOIL	5/2/2011 14:15	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159015	B2D176	SOIL	5/2/2011 13:55	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159016	B2D177	SOIL	5/2/2011 13:55	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159017	B2D178	SOIL	5/2/2011 14:55	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159018	B2D179	SOIL	5/2/2011 14:55	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159019	B2D180	SOIL	5/2/2011 14:40	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159020	B2D181	SOIL	5/2/2011 14:40	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159021	B2D182	SOIL	5/2/2011 14:22	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159022	B2D183	SOIL	5/2/2011 14:22	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159023	B2D184	SOIL	5/2/2011 14:30	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		
112159024	B2D185	SOIL	5/2/2011 14:30	5/3/2011 08:00
		8260V-S; DRY-WEIGHT		

Test Acronym Description

Test Acronym	Description
8260V-S	Volatiles by 8260B (S)
DRY-WEIGHT	Dry Weight as Pct Moisture
GAB-S	Gross Alpha/Beta (S)
TPHDWA-S	TPHD-WA (S)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-033

PAGE 1 OF 1

COLLECTOR: KB Huise, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location A; 1-804

SAF NO.: F11-074

AIR QUALITY: ☐

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

ICE CHEST NO.: GWS-20-2516 KW 5/3/11

FIELD LOGBOOK NO.: HNF-N-807-15-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 301901E510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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)

112159

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~4C	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120ml	500ml
SAMPLE ANALYSIS	SEE ITEM "1" IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D196	1	SOIL	MAY 0 2 2011	1415	X	X

CHAIN OF POSSESSION — SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huise CHPRC	MAY 0 2 2011 1620	SSU- 1	MAY 0 2 2011 1620
SSU- 1	MAY 0 3 2011 0650	L.D. Wall K.D. Wall	MAY 0 3 2011 0650
L.D. Wall K.D. Wall	MAY 0 3 2011 0800	M. Nelson M. Nelson	MAY 0 3 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};

(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — REMOVAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 4/29/2011

A-6005-618 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-034 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7974

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location A; I-004 DUP

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

SAP NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-2560

FIELD LOGBOOK NO.: HNF-N-807-15.92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 301901FS10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	None	
HOLDING TIME	14/40 Days	6 Months	
TYPE OF CONTAINER	G	GP	
NO. OF CONTAINER(S)	1	1	
VOLUME	125mL	500mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D187	2 SOIL	MAY 02 2011	1415	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU- 1	MAY 02 2011 1600
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	M. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/15/2011

A-6000-018 (REV A)

Sample Receipt

Chain of Custody

Tuesday, May 03, 2011 10:52:09 AM
Page 5 of 50

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-035 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: Underground Pipeline, Location B; 1-005	PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil
SAF NO.: F11-074	AIR QUALITY: [ ]	ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: HNF-N-607-15-92
ACTUAL SAMPLE DEPTH: 1 ft.	COA: 301901E510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	HG	GW
NO. OF CONTAINER(S)	1	1
VOLUME	120ml	500ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D188	3	SOIL	MAY 02 2011	1355	X	X

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1620	SSU- 1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	H. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A-6000-010 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-036 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

SAMPLING LOCATION: Underground Pipeline, Location B; 1-005 DUP

ICE CHEST NO.: GWS 256

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

FIELD LOGBOOK NO.: HNF-N-607-15292

ACTUAL SAMPLE DEPTH: 1 ft.

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: EVANS, RT

SAF NO.: F11-074

CDA: 301901ES10

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: BA

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, BL=Blank, Liquid, BS=Bulk, Solid, 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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	AG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120ml	500ml
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1B9	4	SOIL	MAY 02 2011	1355	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CHPRC	MAY 02 2011 1620	SSU-1	MAY 02 2011 1620
SSU-1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0700	M. Nelson	MAY 03 2011 0700

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-Diesel/Kerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A 6003 610 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-037 | PAGE 1 OF 1

COLLECTOR: KB Huise, CHPRC

SAMPLING LOCATION: Excavated Soil Stockpile; F-006

ICE CHEST NO.: GWS-2560

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

FIELD LOGBOOK NO.: HNF-N-507-15297

ACTUAL SAMPLE DEPTH: 0-12 inches

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: EVANS, RT

SAP NO.: F11-074

CDA: 3E19012530

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

MATRIX*: A=Air, OL=Oil, 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	None
HOLDING TIME	14+40 Days	6 Months
TYPE OF CONTAINER	JG	GP
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSES	MB TPH (1) IN SPECIAL INSTRUCTIONS	SRP TPH (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D'C0	5	SOIL	MAY 02 2011	1455	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huise CHPRC	MAY 02 2011 1620	SSU- 1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	M. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Tuesday, May 03, 2011 10:52:09 AM
Page 6 of 50

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-038 | PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7974

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 6A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; I-606 DXP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: 6WS-256

FIELD LOGBOOK NO.: HNF-N-607-15-92

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Dish-AC	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	CP
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C1	6	SOIL	MAY 0 2 2011	1455	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 0 2 2011 1620	SSU- 1	MAY 0 2 2011 1620
SSU- 1	MAY 0 3 2011 0600	L.D. Wall CHPRC	MAY 0 3 2011 0600
L.D. Wall CHPRC	MAY 0 3 2011 0600	M. Nelson	MAY 0 3 2011 0600

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417E520.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-DieselKerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/28/2011

A 6003 618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-839 | PAGE 1 OF 1

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT | TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT | PRICE CODE: 8A | DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; T-087

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074 | AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15292 | ACTUAL SAMPLE DEPTH: 0-12 inches

COA: 301901653D | METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, Sd=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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	AG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE TPH (1) IN SPECIAL INSTRUCTIONS	SEE TPH (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C2	7 SOIL	MAY 02 2011	1440	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1620	SSU- 1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	D. Well CHPRC	MAY 03 2011 0650
L.D. Well CHPRC	MAY 03 2011 0800	H. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417E520.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/25/2011

A-6003-048 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-076-040 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; T-807 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-807-15912

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 301901E510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, B=Bulk, 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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	GVF
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	See Item(s) in Special Instructions	See Item(s) in Special Instructions

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C3	SOIL	MAY 02 2011	1440	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1620	SSU-1	MAY 02 2011 1620
SSU-1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	M. Nelson Minos	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) IPH-DieselKerosene Range - WIPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-041 | PAGE 1 OF 1

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

AIR QUALITY: ☐

SAMPLING LOCATION: Excavated Soil Stockpile; I-008

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAP NO.: F11-074

ICE CHEST NO.: GWS-3256

FIELD LOGBOOK NO.: HNF-N-507-15-92

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	uG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120ml	500ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C4 9	SOIL	MAY 02 2011	1422	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU- 1	MAY 02 2011 1600
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	H. Nelson Hines	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417E520.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A 0003 018 (REV 2)

Sample Receipt

Chain of Custody

Tuesday, May 03, 2011 10:52:09 AM
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CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — P11-074-042 — PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

SAMPLING LOCATION: Excavated Soil Stockpile: I-008 OUP

ICE CHEST NO.: GWS 256

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

FIELD LOGBOOK NO.: HNF-N-807-15.92

ACTUAL SAMPLE DEPTH: 0-12 inches

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: EVANS, RT

SAF NO.: P11-074

COA: 301901ES10

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: BA

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	AG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM(1) IN SPECIAL INSTRUCTIONS	SEE ITEM(2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C9	10	SOIL	MAY 02 2011	1422	X	X

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1420	SSU- 1	MAY 02 2011 1420
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D Wall CHPRC	MAY 03 2011 0700	M Nelson Hinds	MAY 03 2011 0700

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 4/29/2011

A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-043 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC

SAMPLING LOCATION: Contingency; 1409

ICE CHEST NO.: GWS-2516

SHIPPED TO: Waste Sampling & Characterization

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

FIELD LOGBOOK NO.: HNF-N-507-15.92

ACTUAL SAMPLE DEPTH: 1 ft.

OFFSITE PROPERTY NO.: N/A

PROJECT COORDINATOR: EVANS, RT

SAF NO.: F11-074

COA: 301901ES10

BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	See ITEM (1) IN SPECIAL INSTRUCTIONS	See ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C8	11	SOIL	MAY 02 2011	1430	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC [signature]	MAY 02 2011 1620	SSU- [signature]	MAY 02 2011 1620
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU- L.D. Wall CHPRC [signature]	MAY 03 2011 0650	L.D. Wall CHPRC [signature]	MAY 03 2011 0650
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
L.D. Wall CHPRC [signature]	MAY 03 2011 0800	M. Nelson Mears	MAY 03 2011 0800
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

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/23/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-044 | PAGE 1 OF 1

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Contingency: 1-009 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: ~~HNF-N-807-~~ 15-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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 & 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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	aG	CIP
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2D1C/ 12	SOIL	MAY 02 2011	1430	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1620	SSU- 1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	H. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.

(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};

(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A-6033-646 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-007

PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: Underground Pipeline, Location A, I-004	PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil
SAF NO.: F11-074	AIR QUALITY: L	ICE CHEST NO.: CWS 256	FIELD LOGBOOK NO.: HNF-N-507-15.92
ACTUAL SAMPLE DEPTH: 1 ft.	COA: 301901ES1C	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	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 reportable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Frozen/Cool <-3C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	See ITEM (1) in SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
920174	3 SOIL	MAY 02 2011	1415	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CHPRC KB Hulse	MAY 02 2011	SSU-1	MAY 02 2011
SSU-1	MAY 03 2011 0650	CHPRC L.D. Wall	MAY 03 2011 0650
CHPRC L.D. Wall	MAY 03 2011 0500	TA Fitzhugh	MAY 03 2011 0500

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/29/2011

6400D-418 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-007

PAGE 2 OF 2

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Piping, Location A; I-004

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY:

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-607-12-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 30190 18510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 4/20/2011

A-60C3-019 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Pipeline A ; J-004

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D174	K	No Methanol		28.43	34.70	6.27	No Methanol
B2D174	L			28.38	34.58	6.20	
B2D174	M			28.39	34.58	6.19	
B2D174	N			28.64	35.03	6.39	
B2D174	P			28.47	34.62	6.15	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | F11-074-008 | PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 6A	DATA TURNAROUND: 3 Days / 15 Days		
SAMPLING LOCATION: Underground Pipeline, Location A; T-604 DUP	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAP NO.: F11 074
AIR QUALITY: ☐			
ICE CHEST NO.: 6WS-3956	FIELD LOGBOOK NO.: HNF-N-607-152	ACTUAL SAMPLE DEPTH: 1 ft.	COA: 301901ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	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	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D175 14	SOIL	MAY 02 2011	1415	X

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: KB Hulse, CHPRC	MAY 02 2011 1600	RECEIVED BY/STORED IN: SSU-1	MAY 02 2011 1600
RELINQUISHED BY/REMOVED FROM: SSU-1	MAY 03 2011 0650	RECEIVED BY/STORED IN: L.D. Wall, CHPRC	MAY 03 2011 0650
RELINQUISHED BY/REMOVED FROM: L.D. Wall	MAY 03 2011 0800	RECEIVED BY/STORED IN: TA Mather	MAY 03 2011 0800
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

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/25/2011

A-6003-018 (REV 2)

CH2MHill Plateau Remediation Company | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | F11-074-008 | PAGE 2 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: Underground Pipeline, Location A; 1-004 DIP	PROJECT DESIGNATION: FFP Phase HST Removal Verification Sampling - final		SAF NO.: F11-074
ICE CHEST NO.: E-WS-256	FIELD LOGBOOK NO.: HNF-N-507-12992	ACTUAL SAMPLE DEPTH: 1ft.	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 15 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE | **ORIGINAL**

SPECIAL INSTRUCTIONS

- The CACN for all analytical work at WSCF laboratory is 401417ES20.
- The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

- All VOA samples will be collected using EPA Method 5035A.
- VOA sample bottle sets will include 5 bottles for low level analysis.
- The laboratory is to use one of the low level VOA bottles for moisture content determination.
- VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories These suffixes should not be include as part of the sample ID reported in the final data packages.

- All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.

(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 6/29/2011 | A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Pipeline A; E-004 DUP

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]		Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D175	K	No Methanol	28.36	33.74	5.38	No Methanol
B2D175	L		28.84	33.70	4.86	
B2D175	M		28.90	35.14	6.24	
B2D175	N		28.80	34.86	6.06	
B2D175	P		28.62	34.53	5.91	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-009 PAGE 1 OF 2

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location 0; I-005

PROJECT DESIGNATION: 999 Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY:

ICE CHEST NO.: 6WS-256

FIELD LOGBOOK NO.: HNF-N-507-15.92

ACTUAL SAMPLE DEPTH: 12 feet 8 inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Freezer/Cool < 20C and > 20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	wide
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (7) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D178	15	SOIL	MAY 0 2 2011	1355	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 0 2 2011 1600	SSU- 1	MAY 0 2 2011 1600
SSU- 1	MAY 0 3 2011 0650	L.D. Wall CHPRC	MAY 0 3 2011 0650
L.D. Wall	MAY 0 3 2011 0800	TA	MAY 0 3 2011 0800

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A-0015-018 (REV 1)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-009

PAGE 2 OF 2

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location B; I-005

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GW5-256

FIELD LOGBOOK NO.: HNF-N-507-15.92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 301901E510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/25/2011

A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Pipeline B; I-005

Sampler Initials and Date: KB Hulse CHPRC MAY 02 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D176	K	No Methanol		28.42	34.69	6.27	No Methanol
B2D176	L			28.46	34.77	6.31	
B2D176	M			28.47	34.83	6.36	
B2D176	N			28.97	34.96	5.99	
B2D176	P			28.97	35.09	6.12	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the via with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

P11-074-010 PAGE 1 OF 2

COLLECTOR: KB Huloo CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7934

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location B; I-005 DUP

PROJECT DESIGNATION: 200 Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 30190 ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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, SL=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	Frozen/Cool <-7C and >-30C
HOLDING TIME	14 Days
TYPE OF CONTAINER	pOb
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D177 16	SOIL	MAY 0 2 2011	1355	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huloo CHPRC	MAY 0 2 2011 1600	SSU-1	MAY 0 2 2011 1600
SSU-1	MAY 0 3 2011 0650	L.D. Wall CHPRC	MAY 0 3 2011 0650
L.D. Wall CHPRC	MAY 0 3 2011 0800	TA FRAZIER	MAY 0 3 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/26/2011

A-6003-418 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-010

PAGE 2 OF 2

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Underground Pipeline, Location B; I-005 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAP NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-152-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 3019018510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 6/25/2011

0-603-610 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Pipeline B, I-005 Dup

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D177	K	No Methanol		28.94	35.64	6.70	No Methanol
B2D177	L			28.49	34.43	5.94	
B2D177	M			28.56	34.87	6.31	
B2D177	N			28.86	34.93	6.07	
B2D177	P			28.56	35.39	6.83	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-011 | PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; 1-006

PROJECT DESIGNATION: RFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15992

ACTUAL SAMPLE DEPTH: 0-12 inches

COA: 3019015510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool <-7C-above 5-7C
HOLDING TIME	14 Days
TYPE OF CONTAINER	ABG
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D178	17	SOIL	MAY 02 2011	1455	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU-1	MAY 02 2011 1600
SSU-1	MAY 03 2011 0650	L.D. Wall	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	TA Fraser	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/28/2011

A-6003-010 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-011 PAGE 2 OF 2

COLLECTOR: KB Huge, CHPRC	COMPANY CONTACT: EVANS, KT	TELEPHONE NO: 373-7924	PROJECT COORDINATOR: EVANS, KT
SAMPLING LOCATION: Excavated Soil Stockpile; I-006	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: MNF-N-607-B92	ACTUAL SAMPLE DEPTH: 0-12inches	COA: 301901E510
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A
AIR QUALITY: ☐
METHOD OF SHIPMENT: GOVERNMENT VEHICLE
DATA TURNAROUND: 3 Days / 15 Days
ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/25/2011

A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Stockpile ; I-006

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D178	K	No Methanol		28.11	33.58	5.47	No Methanol
B2D178	L			28.57	34.25	5.68	
B2D178	M			28.79	34.40	5.61	
B2D178	N			28.44	33.75	5.31	
B2D178	P			28.55	34.42	5.87	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-012 | PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

AIR QUALITY: [ ]

SAMPLING LOCATION: Excavated Soil Stockpile; 1-606 DUP

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-607-15-92

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 30190IES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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 Regulation but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Frozen/Cool <=7C and >-7C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGa
NO. OF CONTAINER(S)	3
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B20179	18 SOIL	MAY 02 2011	1455	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU- 1	MAY 02 2011 1600
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	TA Frazier	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/28/2011

A-6005-618 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-012

COLLECTOR: KB Hulse CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; J-006 DIP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY:

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15-92

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 4/25/2011

A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Stockpile, F-006 DUP

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D179	K	No Methanol		28.84	34.19	5.35	No Methanol
B2D179	L			28.75	36.12	7.37	
B2D179	M			29.62	37.90	9.28	
B2D179	N			28.82	34.58	5.76	
B2D179	P			28.79	33.65	4.86	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-013

PAGE 1 OF 2

COLLECTOR: KB Huise CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; 1-807

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

S&F NO.: F11-074

AIR QUALITY: _

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-807-15-92

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 30190IE510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool < 7C and > 35C
HOLDING TIME	14 Days
TYPE OF CONTAINER	8Oz
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B20180	19	SOIL	MAY 0 2 2011	1440	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huise CHPRC	MAY 0 2 2011 1600	SSU- 1	MAY 0 2 2011 1600
SSU- 1	MAY 0 3 2011 0650	L.D. Wall CHPRC	MAY 0 3 2011 0650
L.D. Wall CHPRC	MAY 0 3 2011 0800	TA Frazier	MAY 0 3 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY _ TITLE _ DATE/TIME _

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD _ DISPOSED BY _ DATE/TIME _

PRINTED ON 4/25/2011

A-5003-618 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

P11-074-013

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: Excavated Soil Stockpile, 1-607	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: P11-074
ICE CHEST NO.: GWS 256	FIELD LOGBOOK NO.: HNF-N-507-12.92	ACTUAL SAMPLE DEPTH: 0-12inches	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/25/2011

A 6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Excavated Stockpile; I-007

Sample: Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D180	K	No Methanol		28.46	32.95	4.49	No Methanol
B2D180	L			28.93	32.45	3.52	
B2D180	M			28.45	32.31	3.86	
B2D180	N			28.95	33.51	4.56	
B2D180	P			28.37	33.29	4.92	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-014 PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; I-007 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-079

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15292

ACTUAL SAMPLE DEPTH: 0-12inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, BL=Drum Liquids, BS=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	Frozen/Cool <-/C and > 70C
HOLDING TIME	14 Days
TYPE OF CONTAINER	Jar
NO. OF CONTAINER(S)	3
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D181 20	SOIL	MAY 0 2 2011	1440	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 0 2 2011 1400	SSU-1	MAY 0 2 2011 1400
SSU-1	MAY 0 3 2011 0650	L.D. Wall CHPRC	MAY 0 3 2011 0650
L.D. Wall CHPRC	MAY 0 3 2011 0800	[illegible]	MAY 0 3 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/28/2011

A-4089-618 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-014

PAGE 2 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: Excavated Soil Stockpile; I-067 DUP	PROJECT DESIGNATION: 200 Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: HNF-N-507-15982	ACTUAL SAMPLE DEPTH: 0-12inches	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: BA

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/28/2011

A-6003-618 (REV 7)

Chain of Custody

SAMPLE RECORD SHEET

Location: Excavated Stockpile; I-007 DUP

Sampler Initials and Date: ~~KETHIRE~~ CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D181	K	No Methanol		28.63	33.80	5.17	No Methanol
B2D181	L			28.65	32.96	4.31	
B2D181	M			28.55	32.58	4.03	
B2D181	N			28.37	32.31	3.94	
B2D181	P			28.23	32.54	4.31	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

P11-074-015 | PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: Excavated Soil Stockpile; I-608	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAP NO.: F11-074
ICE CHEST NO.: GWS-2560	FIELD LOGBOOK NO.: HNF-N-507-15992	ACTUAL SAMPLE DEPTH: 0-12 inches	COA: 301901E510
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A | AIR QUALITY: ☐ | DATA TURNAROUND: 3 Days / 15 Days | METHOD OF SHIPMENT: GOVERNMENT VEHICLE | **ORIGINAL**

MATRIX*: A=Air, DL=Drum Liquid, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, O=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 (1990/1991)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Frozen/Cool <4C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	Jar
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D182	21	SOIL	MAY 02 2011	1422	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011	SSU-1	MAY 02 2011
SSU-1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	TA Kinzler	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/25/2011

A-6083-018 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-035

PAGE 2 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days		
AIR QUALITY: ☐			
SAMPLING LOCATION: Excavated Soil Stockpile; I-008	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.: GWS-2556	FIELD LOGBOOK NO.: HNF-N-807-15992	ACTUAL SAMPLE DEPTH: 0-12inches	COA: 301901ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 4/25/2011

A-6033-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Stockpile ; I-008

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D182	K	No Methanol		28.74	33.89	4.15	No Methanol
B2D182	L			28.95	34.75	5.80	
B2D182	M			28.80	34.66	5.86	
B2D182	N			28.72	34.04	5.32	
B2D182	P			28.36	34.25	5.89	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-016

PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Excavated Soil Stockpile; I-008 DUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15592

ACTUAL SAMPLE DEPTH: 0-12 inches

COA: 3019011510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool <-7°C and 5-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	8oz
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM D IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D185	22	SOIL	MAY 02 2011	1422	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1520	SSU- 1	MAY 02 2011 1520
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	[illegible]	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/26/2011

A-6003-618 (REV 1)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

P11-074-016 PAGE 2 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373 7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

AIR QUALITY: ☐

SAMPLING LOCATION: Excavated Soil Stockpile; 1-005 OUP

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAP NO.: P11-074

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15992

ACTUAL SAMPLE DEPTH: 0-12 inches

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/28/2011

A-6003-615 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Stockpile ; I-008 DUP

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D183	K	No Methanol		28.66	33.78	5.12	No Methanol
B2D183	L			28.61	34.81	6.20	
B2D183	M			28.96	34.09	5.13	
B2D183	N			28.49	33.80	5.31	
B2D183	P			28.29	33.84	5.55	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

CH2MHILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-017 PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: Contingency; I-009

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: [ ]

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15-92

ACTUAL SAMPLE DEPTH: 1 ft.

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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, SL=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)

PRESERVATION	Freezer/Cool <-7°C and > 20°C
HOLDING TIME	14 Days
TYPE OF CONTAINER	eCo
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D184 23	SOIL	MAY 02 2011	1430	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU-1	MAY 02 2011 1600
SSU-	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	IA Fedex	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/25/2011

A 6023-658 (REV 7)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-017

PAGE 2 OF 2

COLLECTOR: KB Hulse CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7024	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: Contingency, 1-009	PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil
SAF NO.: F11-074	AIR QUALITY: 1	ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: HNF-N-807-15.92
ACTUAL SAMPLE DEPTH: 1 ft.	COA: 301301ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 4/20/2011

A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Contingency; I-009

Sampler Initials and Date: KB Hulse CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]		Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D184	K	No Methanol	28.80	34.71	5.91	No Methanol
B2D184	L		28.40	34.14	5.74	
B2D184	M		28.32	33.91	5.59	
B2D184	N		28.56	34.62	6.06	
B2D184	P		28.52	34.58	6.06	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

Tuesday, May 03, 2011 10:52:09 AM
Page 46 of 50

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSES REQUEST

F11-074-018

PAGE 1 OF 2

COLLECTOR: KB Hulse, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: Contingency: 1-009 DUP	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil
SAF NO.: F11-074	AIR QUALITY	ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: HNF-N-507-15-92
ACTUAL SAMPLE DEPTH: 1 ft	COA: 3019018510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquid, DS=Drum Solid, 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 reportable per DOE Order 5400.5 (1990/1991)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Frozen/Cool +/-2C and "+" 20C
HOLDING TIME	14 days
TYPE OF CONTAINER	Glass
NO. OF CONTAINER(S)	1
VOLUME	40mL
SAMPLE ANALYSIS	See Item (1) in Special Instructions

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D165 24	SOIL	MAY 02 2011	1430	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1600	SSU-	MAY 02 2011 1600
SSU-	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	TA Fowler	MAY 03 2011 0800

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/29/2011

A-6003-018 (REV 7)

Sample Receipt

Chain of Custody

Chemrhe Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

P11-074-018

PAGE 2 OF 2

COLLECTOR: KB Huise, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: Contingency: 1-008 DUP	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil
SAF NO.: P11-074	AIR QUALITY	ICE CHEST NO.: GWS-256	FIELD LOGBOOK NO.: HNF-N-507-15-92
ACTUAL SAMPLE DEPTH: 1 ft.	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 4/29/2011

A-6003-618 (REV 2)

Chain of Custody

SAMPLE RECORD SHEET

Location: Contingency, I-009

Sampler Initials and Date: KB Huise CHPRC MAY 0 2 2011

Sample Number	Sample Suffix[1]			Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)	Methanol in sample bottle (ml)
B2D185	K	No Methanol		28.38	34.11	5.73	No Methanol
B2D185	L			28.66	33.87	5.21	
B2D185	M			28.67	34.21	5.54	
B2D185	N			29.02	35.01	5.99	
B2D185	P			28.44	34.24	5.80	

[1]Sample suffix of K, L, M, N, and P relate to low-level concentration samples and will not have any preservation beyond freezing between -7°C and -20°C.
[2]Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.
[3]Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.
[4]Soil weight is the vial with sample minus Initial Weight.

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

May 18, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112221

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112221

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112221
Data Deliverable Date 05/26/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-074	B2DVN4	112221001	SOIL	05/10/11	05/11/11
F11-074	B2DVN6	112221002	SOIL	05/10/11	05/11/11
F11-074	B2DVN8	112221003	SOIL	05/10/11	05/11/11
F11-074	B2DVL4	112221004	SOIL	05/10/11	05/11/11
F11-074	B2DVL6	112221005	SOIL	05/10/11	05/11/11
F11-074	B2DVL8	112221006	SOIL	05/10/11	05/11/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112221

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

TPHD-WA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.

Attachment 2
Narrative
WSCF112221

- All other applicable QC controls are within the established limits.

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gross Alpha / Gross Beta:
  - Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 33 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF112221
Report Date	May 18, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181831	181900	1	BLANK	55284	BLANK		Extractable Diesel and Petroleum
181831	181900	2	LCS	55285	LCS		Extractable Diesel and Petroleum
181831	181900	3	MS	55286	B2DVN6(112221002MS)	112221002	Extractable Diesel and Petroleum
181831	181900	4	MSD	55287	B2DVN6(112221002MSD	112221002	Extractable Diesel and Petroleum
181831	181900	5	SAMPLE	112221001	B2DVN4		Extractable Diesel and Petroleum
181831	181900	6	SAMPLE	112221002	B2DVN6		Extractable Diesel and Petroleum
181831	181900	7	SAMPLE	112221003	B2DVN8		Extractable Diesel and Petroleum

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181869	181870	1	BLANK	55336	BLANK		SW-846 8260B Volatiles, separate prep
181869	181870	2	LCS	55337	LCS		SW-846 8260B Volatiles, separate prep
181869	181870	3	MS	55338	B2DVL4(112221004MS)	112221004	SW-846 8260B Volatiles, separate prep
181869	181870	4	MSD	55339	B2DVL4(112221004MSD)	112221004	SW-846 8260B Volatiles, separate prep
181869	181870	5	SAMPLE	112221005	B2DVL6		SW-846 8260B Volatiles, separate prep
181869	181870	6	SAMPLE	112221004	B2DVL4		SW-846 8260B Volatiles, separate prep
181869	181870	7	SAMPLE	112221006	B2DVL8		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181813	181908	1	BLANK	55225	BLANK		Gross Alpha/Gross Beta
181813	181908	2	LCS	55226	LCS		Gross Alpha/Gross Beta
181813	181908	3	SAMPLE	112221001	B2DVN4		Gross Alpha/Gross Beta
181813	181908	4	DUP	55227	B2DVN8(112221003DUP)	112221003	Gross Alpha/Gross Beta
181813	181908	5	SAMPLE	112221003	B2DVN8		Gross Alpha/Gross Beta
181813	181908	6	SAMPLE	112221002	B2DVN6		Gross Alpha/Gross Beta

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181989	181989	1	SAMPLE	112221001	B2DVN4		Dry Weight/Percent Moisture
181989	181989	2	SAMPLE	112221002	B2DVN6		Dry Weight/Percent Moisture
181989	181989	3	SAMPLE	112221003	B2DVN8		Dry Weight/Percent Moisture
181989	181989	4	SAMPLE	112221004	B2DVL4		Dry Weight/Percent Moisture
181989	181989	5	SAMPLE	112221005	B2DVL6		Dry Weight/Percent Moisture
181989	181989	6	SAMPLE	112221006	B2DVL8		Dry Weight/Percent Moisture

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

Sample # 112221001
SAF# F11-074
Sample ID B2DVN4

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/12/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	UN	<4		mg/kg	1	4	5	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

Sample # 112221002
SAF# F11-074
Sample ID B2DVN6

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/12/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	UN	<4		mg/kg	1	4	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

Sample # 112221003
SAF# F11-074
Sample ID B2DVN8

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/12/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	UN	<4		mg/kg	1	4	5	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

Sample # 112221004
SAF# F11-074
Sample ID B2DVL4

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

Sample # 112221005
SAF# F11-074
Sample ID B2DVL6

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

Sample # 112221006
SAF# F11-074
Sample ID B2DVL8

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

Sample # 112221001
SAF# F11-074
Sample ID B2DVN4

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/12/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.7	.71	pCi/g	1	0.86		05/16/11
Gross Beta	12587-47-2	LA-508-415		2.9	.93	pCi/g	1	1.4		05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

Sample # 112221002
SAF# F11-074
Sample ID B2DVN6

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/12/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		2.1	.77	pCi/g	1	0.86		05/16/11
Gross Beta	12587-47-2	LA-508-415		2.1	.86	pCi/g	1	1.3		05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

Sample # 112221003
SAF# F11-074
Sample ID B2DVN8

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/12/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415		1.1	.59	pCi/g	1	0.83		05/16/11
Gross Beta	12587-47-2	LA-508-415	U	1.2	.76	pCi/g	1	1.3		05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221001
SAF# F11-074
Sample ID B2DVN4

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221002
SAF# F11-074
Sample ID B2DVN6

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221003
SAF# F11-074
Sample ID B2DVN8

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		93		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221004
SAF# F11-074
Sample ID B2DVL4

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221005
SAF# F11-074
Sample ID B2DVL6

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		95		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary dilution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112221

Sample # 112221006
SAF# F11-074
Sample ID B2DVL8

Matrix SOIL
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		92		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

QC Batch 181831
Associated Samples 112221001, 112221002, 112221003

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55284**							
Diesel	TPHDIESEL		<4	mg/kg					U	05/12/11
LCS			**QC Sample #55285**							
Diesel	TPHDIESEL		110	mg/kg	108.1	70 - 130				05/12/11
MS			**QC Sample #55286**							
			Original 112221002							
Diesel	TPHDIESEL	<4	660	mg/kg	133.5	70 - 130			N	05/12/11
MSD			**QC Sample #55287**							
			Original 112221002					**Paired**	**55286**	
Diesel	TPHDIESEL	<4	600	mg/kg	122	70 - 130	9.00	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112221

QC Batch 181813
Associated Samples 112221001, 112221002, 112221003

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #55225**								
Gross Alpha	12587-46-1		-0.10	pCi/g						U	05/16/11
Gross Beta	12587-47-2		0.40	pCi/g						U	05/16/11
LCS			**QC Sample #55226**								
Gross Alpha	12587-46-1		8.4	pCi/g	103.4	80 - 120					05/16/11
Gross Beta	12587-47-2		24	pCi/g	111	80 - 120					05/16/11
DUP			**QC Sample #55227**								
			Original 112221003								
Gross Alpha	12587-46-1	1.1	1.1	pCi/g			0.00	30			05/16/11
Gross Beta	12587-47-2	1.2	1.9	pCi/g			40.00	30	*	X	05/16/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

QC Batch 181869
Associated Samples 112221004, 112221005, 112221006

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55336**							
1,1-Dichloroethene	75-35-4		<1	ug/kg					U	05/12/11
Trichloroethene	79-01-6		<1	ug/kg					U	05/12/11
Benzene	71-43-2		<1	ug/kg					U	05/12/11
Toluene	108-88-3		<1	ug/kg					U	05/12/11
Chlorobenzene	108-90-7		<1	ug/kg					U	05/12/11
Ethylbenzene	100-41-4		<1	ug/kg					U	05/12/11
Total Xylenes	1330-20-7		<1	ug/kg					U	05/12/11
LCS			**QC Sample #55337**							
1,1-Dichloroethene	75-35-4		31	ug/kg	123	50 - 131				05/12/11
Trichloroethene	79-01-6		19	ug/kg	76.8	66 - 119				05/12/11
Benzene	71-43-2		20	ug/kg	78.9	73 - 123				05/12/11
Toluene	108-88-3		21	ug/kg	84.2	77 - 128				05/12/11
Chlorobenzene	108-90-7		23	ug/kg	90.6	81 - 126				05/12/11
Ethylbenzene	100-41-4		21	ug/kg	82.6	75 - 125				05/12/11
MS			**QC Sample #55338**							
			Original 112221004							
1,1-Dichloroethene	75-35-4	<1	28	ug/kg	111	75 - 125				05/12/11
Trichloroethene	79-01-6	<1	21	ug/kg	82.6	75 - 125				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2	<1	20	ug/kg	81.4	75 - 125				05/12/11
Toluene	108-88-3	<1	22	ug/kg	87.8	75 - 125				05/12/11
Chlorobenzene	108-90-7	<1	23	ug/kg	90.7	75 - 125				05/12/11
Ethylbenzene	100-41-4	<1	20	ug/kg	81.6	75 - 125				05/12/11
MSD			**QC Sample #55339**							
			Original 112221004					**Paired**	**55338**	
1,1-Dichloroethene	75-35-4	<1	31	ug/kg	123	75 - 125	10.20	30		05/12/11
Trichloroethene	79-01-6	<1	20	ug/kg	80.9	75 - 125	2.10	30		05/12/11
Benzene	71-43-2	<1	20	ug/kg	80.5	75 - 125	1.10	30		05/12/11
Toluene	108-88-3	<1	22	ug/kg	86.9	75 - 125	1.00	30		05/12/11
Chlorobenzene	108-90-7	<1	23	ug/kg	93.1	75 - 125	2.60	30		05/12/11
Ethylbenzene	100-41-4	<1	20	ug/kg	81	75 - 125	0.70	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112221

QC Batch 181831
Associated Samples 112221001, 112221002, 112221003

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112221001**							
o-Terphenyl	84-15-1				111.5	70 - 130				05/13/11
SAMPLE			**Sample #112221002**							
o-Terphenyl	84-15-1				114.2	70 - 130				05/12/11
SAMPLE			**Sample #112221003**							
o-Terphenyl	84-15-1				100.2	70 - 130				05/13/11
BLANK			**QC Sample #55284**							
o-Terphenyl	84-15-1				99.4	70 - 130				05/12/11
LCS			**QC Sample #55285**							
o-Terphenyl	84-15-1				115	50 - 150				05/12/11
MS			**QC Sample #55286**							
			Original 112221002							
o-Terphenyl	84-15-1				148.2	50 - 150				05/12/11
MSD			**QC Sample #55287**							
			Original 112221002						**Paired 55286**	
o-Terphenyl	84-15-1				133.5	50 - 150	10.40	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

QC Batch 181869
Associated Samples 112221004, 112221005, 112221006

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112221004**							
1,2-Dichloroethane-d4	17060-07-0				113.6	77 - 137				05/12/11
Toluene-d8	2037-26-5				83.2	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				81	66 - 125				05/12/11
SAMPLE			**Sample #112221005**							
1,2-Dichloroethane-d4	17060-07-0				111	77 - 137				05/12/11
Toluene-d8	2037-26-5				80.4	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				78.7	66 - 125				05/12/11
SAMPLE			**Sample #112221006**							
1,2-Dichloroethane-d4	17060-07-0				109.2	77 - 137				05/12/11
Toluene-d8	2037-26-5				80.5	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				79.4	66 - 125				05/12/11
BLANK			**QC Sample #55336**							
1,2-Dichloroethane-d4	17060-07-0				106.4	77 - 137				05/12/11
Toluene-d8	2037-26-5				80.7	78 - 122				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112221

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				83.5	66 - 125				05/12/11
LCS			**QC Sample #55337**							
1,2-Dichloroethane-d4	17060-07-0				99.6	77 - 137				05/12/11
Toluene-d8	2037-26-5				82.6	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				97.4	66 - 125				05/12/11
MS			**QC Sample #55338**							
			Original	**112221004**						
1,2-Dichloroethane-d4	17060-07-0				104.8	77 - 137				05/12/11
Toluene-d8	2037-26-5				86.3	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				93	66 - 125				05/12/11
MSD			**QC Sample #55339**							
			Original	**112221004**				**Paired**	**55338**	
1,2-Dichloroethane-d4	17060-07-0				106.1	77 - 137	1.20	30		05/12/11
Toluene-d8	2037-26-5				84.8	78 - 122	1.80	30		05/12/11
4-Bromofluorobenzene	460-00-4				97.1	66 - 125	4.30	30		05/12/11

Analytical Comment Report

Attention: Michael Neely **Group #** WSCF112221

Quality Control Comments

Department Radiochemistry

55227 B2DVN8(112221003DUP)

Analyte Gross Beta - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 15 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112221
Profile #: F11-074-054
Proj. Mgr.:
Phone:

The following samples were received from you on 5/11/2011 10:55:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112221001	B2DVN4	SOIL	5/10/2011 14:20	5/11/2011 10:55
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112221002	B2DVN6	SOIL	5/10/2011 10:16	5/11/2011 10:55
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112221003	B2DVN8	SOIL	5/10/2011 12:56	5/11/2011 10:55
		DRY-WEIGHT; GAB-S; TPHDWA-S		
112221004	B2DVL4	SOIL	5/10/2011 14:20	5/11/2011 10:55
		8260V-S; DRY-WEIGHT		
112221005	B2DVL6	SOIL	5/10/2011 10:16	5/11/2011 10:55
		8260V-S; DRY-WEIGHT		
112221006	B2DVL8	SOIL	5/10/2011 12:56	5/11/2011 10:55
		8260V-S; DRY-WEIGHT		

Test Acronym Description

Test Acronym	Description
8260V-S	Volatiles by 8260B (S)
DRY-WEIGHT	Dry Weight as Pct Moisture
GAB-S	Gross Alpha/Beta (S)
TPHDWA-S	TPHD-WA (S)

Sample Receipt

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-094

PAGE 1 OF 1

COLLECTOR: JS Scales CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days	SAMPLING LOCATION: C8431.T-001	PROJECT DESIGNATION: IWP Diesel UST Removal Verification Sampling - Soil
SAF NO.: F11-074	AIR QUALITY: ☐	ICE CHEST NO.: 6WS-193	FIELD LOGBOOK NO.: HNF-N-507-19.1
ACTUAL SAMPLE DEPTH: 11-13 ft.	COA: 3019012510	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	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)

112221

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool-4C	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	AG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	125mL	500mL ~100 mL in container
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVN4	SOIL	MAY 10 2011	1420	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 10 2011 1530	SSU #7	MAY 10 2011 1530
SSU-7	MAY 11 2011 1030	D. Wall CHPRC	MAY 11 2011 1030
D. Wall CHPRC	MAY 11 2011 1055	[illegible]	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417E520.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/3/2011

4-8003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-058 PAGE 1 OF 1

COLLECTOR: JS Scales, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: BA	DATA TURNAROUND: 3 Days / 15 Days		
SAMPLING LOCATION: C0432; I-401	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil	SAF NO.: F11-074	AIR QUALITY:
ICE CHEST NO.: GWS-173	FIELD LOGBOOK NO.: HNF-N-607-14.1	ACTUAL SAMPLE DEPTH: 11-13ft	COA: 301901ES10
METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO: Waste Sampling & Characterization	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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	HG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120ml	500ml ~~1L~~ only 125 ml in container
SAMPLE ANALYSES	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM(2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
R2DVNR	2 SOIL	MAY 10 2011	1016	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales, CHPRC	MAY 10 2011 1530	SSU #1	MAY 10 2011 1530
SSU-1	MAY 11 2011 1030	L.D. Wall, CHPRC	MAY 11 2011 1030
L.D. Wall, CHPRC	MAY 11 2011 1055	Victor Romero	MAY 11 2011 1055
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

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GK1 applies to this SAF.
(1) TPH-DieselKerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/5/2011

A-6003-518 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-002

PAGE 1 OF 2

COLLECTOR: JS Scales, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C9433; I-001

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY:

ICE CHEST NO.: GW5-A93

FIELD LOGBOOK NO.: HNF-N-807-19.1

ACTUAL SAMPLE DEPTH: 11-15 ft

COA: 301901E510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	AG	G/P
NO. OF CONTAINER(S)	1	1
VOLUME	120mL	500mL - 175mL in container
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVN8 3	SOIL	MAY 10 2011	1256	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 10 2011 1530	SSW #2	MAY 10 2011 1536
SSW-1	MAY 11 2011 1030	L.D. Wall CHPRC	MAY 11 2011 1030
L.D. Wall CHPRC	MAY 11 2011 1055	Vilma Sims	MAY 11 2011 1055

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/6/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-062

PAGE 2 OF 2

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373 7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: CR433; I 001

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS - 193

FIELD LOGBOOK NO.: HNF -N-507- 19.1

ACTUAL SAMPLE DEPTH: 11-15 ft.

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(2) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

PRINTED ON 5/5/2011

A-6083-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-053

PAGE 1 OF 2

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: CM11; I-001

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GWS-193

FIELD LOGBOOK NO.: HNF-N-607-19.1

ACTUAL SAMPLE DEPTH: 11-13ft.

COA: 3019016518

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DL=Drums, L=Liquid, 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)

PRESERVATION	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	wgs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	See ID CH (1) in SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B7DM4 4	SOIL	MAY 10 2011	1420	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 10 2011 1520	SSU #7	MAY 10 2011 1530
SSU- 1	MAY 11 2011 1030	L.D. Wall CHPRC	MAY 11 2011 1030
L.D. Wall CHPRC	MAY 11 2011 1055	Victor Bins	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A-6009-610 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-053

PAGE 2 OF 2

COLLECTOR: JS Scalpa CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: CH411; I 001	PROJECT DESIGNATION: FFF Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.: GWS-193	FIELD LOGBOOK NO.: HNF-N-507-PI-1	ACTUAL SAMPLE DEPTH: 13-16 5/10/11 11-13 ft 60	COA: 301901E510
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417E520.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 5/9/2011

A-6003-618 (REV 2)

Chain of Custody

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8431, I-001

Sampler Initials and Date: JS CHPRC MAY 10 2011

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVL4	K	28.36	32.75	4.39
B2DVL4	L	28.73	34.17	5.44
B2DVL4	M	28.98	34.41	5.43
B2DVL4	N	28.25	33.43	5.18
B2DVL4	P	28.66	34.23	5.57

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-057

PAGE 1 OF 2

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C8432 1-001

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.: GW5-193

FIELD LOGBOOK NO.: HNF-N-507-19-1

ACTUAL SAMPLE DEPTH: 11-13 ft.

COA: 3C19010530

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, BL=Blank, Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SD=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	Frozen/Cool <-7C and >-18C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGb
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	See Item (1) in Special Instructions

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVL6	5 SOIL	MAY 10 2011	1016	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 10 2011 1530	SSU #7	MAY 10 2011 1530
SSU- 1	MAY 11 2011 1030	L.B. Wall CHPRC	MAY 11 2011 1030
L.B. Wall CHPRC	MAY 11 2011 1055	[illegible]	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A 0003-018 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-057

PAGE 2 OF 2

COLLECTOR: JS Scales, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: CR430; 1 001	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAP NO.: F11-074
ICE CHEST NO.: GWS-193	FIELD LOGBOOK NO.: INF-N-507-19.1	ACTUAL SAMPLE DEPTH: 11-13ft.	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417FS20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 5/9/2011

A-6003-018 (REV 7)

Rev. 1, Chg. 1 | **GRP-FS-04-G-030** | Page 11 of 11

VOC Soil and Sediment Sampling

Published Date: 10/22/10 | Effective Date: 10/22/10

Appendix A - Sample Record Sheet, -7 °C and -20 °C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8432; I-001 JB Soales CHPRC MAY 1 0 2011

Sampler Initials and Date:

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVL6	K	28.63	32.92	4.29
B2DVL6	L	28.75	32.55	3.80
B2DVL6	M	28.20	32.16	3.96
B2DVL6	N	28.12	33.06	4.94
B2DVL6	P	28.66	33.91	5.25

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-061

PAGE 1 OF 2

COLLECTOR: JS Soales, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C8433; 1-031

PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY:

ICE CHEST NO.: 6WS-193

FIELD LOGBOOK NO.: HNF-N-507-M-1

ACTUAL SAMPLE DEPTH: 11-15 ft.

COA: 3019018510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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, SD=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)

PRESERVATION	Heavy/Liquid < PC and > PCF
HOLDING TIME	14 Days
TYPE OF CONTAINER	8Oz
NO. OF CONTAINER(S)	5
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2DVL8 6	SOIL	MAY 10 2011	1256

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Soales CHPRC	MAY 10 2011 1530	SSU #7	MAY 10 2011 1550
SSU- 1	MAY 11 2011 1030	L.D. Wall CHPRC	MAY 11 2011 1030
L.D. Wall CHPRC	MAY 11 2011 1055	Victor Bing	MAY 11 2011 1055

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PROVIDED ON 9/5/2011

6-60DJ-518 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-001

PAGE 2 OF 2

COLLECTOR: JS Scales CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: CH33; 1 009	PROJECT DESIGNATION: F11 Dirsh UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.: 6WS-193	FIELD LOGBOOK NO.: HNF-N-507-19.1	ACTUAL SAMPLE DEPTH: 11-15ft	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: 8A

AIR QUALITY: ☐

DATA TURNAROUND: 5 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 5/10/2011

A-6003-018 (REV 2)

Appendix A - Sample Record Sheet, -7 °C and -20 °C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8433; I-001 JS Scales CHPRC MAY 10 2011

Sampler Initials and Date:

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVL8	K	28.56	32.02	4.46
B2DVL8	L	28.09	33.08	4.99
B2DVL8	M	28.59	31.80	3.21
B2DVL8	N	28.30	33.00	4.70
B2DVL8	P	28.93	33.79	4.86

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

May 18, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112227

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112227

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112227
Data Deliverable Date 05/26/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-074	B2DVP0	112227001	SOIL	05/11/11	05/11/11
F11-074	B2DVP2	112227002	SOIL	05/11/11	05/11/11
F11-074	B2DVM0	112227003	SOIL	05/11/11	05/11/11
F11-074	B2DVM2	112227004	SOIL	05/11/11	05/11/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112227

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

TPHD-WA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Due to the co-elution of analytes for TPHD-WA (DRO) and kerosene analysis, samples are spiked and evaluated for TPHD only.

Attachment 2
Narrative
WSCF112227

- Matrix Spike and/or Matrix Spike Duplicate recoveries are outside established laboratory limits. Affected sample results in this batch were "N" flagged.

- All other applicable QC controls are within the established limits.

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group.
Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 22 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF112227
Report Date	May 18, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181831	181900	1	BLANK	55284	BLANK		Extractable Diesel and Petroleum
181831	181900	2	LCS	55285	LCS		Extractable Diesel and Petroleum
181831	181900	3	MS	55286	B2DVN6(112221002MS)	112221002	Extractable Diesel and Petroleum
181831	181900	4	MSD	55287	B2DVN6(112221002MSD	112221002	Extractable Diesel and Petroleum
181831	181900	8	SAMPLE	112227001	B2DVP0		Extractable Diesel and Petroleum
181831	181900	9	SAMPLE	112227002	B2DVP2		Extractable Diesel and Petroleum

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181869	181870	1	BLANK	55336	BLANK		SW-846 8260B Volatiles, separate prep
181869	181870	2	LCS	55337	LCS		SW-846 8260B Volatiles, separate prep
181869	181870	3	MS	55338	B2DVL4(112221004MS)	112221004	SW-846 8260B Volatiles, separate prep
181869	181870	4	MSD	55339	B2DVL4(112221004MSD)	112221004	SW-846 8260B Volatiles, separate prep
181869	181870	8	SAMPLE	112227003	B2DVM0		SW-846 8260B Volatiles, separate prep
181869	181870	9	SAMPLE	112227004	B2DVM2		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181989	181989	7	SAMPLE	112227001	B2DVP0		Dry Weight/Percent Moisture
181989	181989	8	SAMPLE	112227002	B2DVP2		Dry Weight/Percent Moisture
181989	181989	9	SAMPLE	112227003	B2DVM0		Dry Weight/Percent Moisture
181989	181989	10	SAMPLE	112227004	B2DVM2		Dry Weight/Percent Moisture

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

Sample # 112227001
SAF# F11-074
Sample ID B2DVP0

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/12/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	UN	<4		mg/kg	1	4	5	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

Sample # 112227002
SAF# F11-074
Sample ID B2DVP2

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
TPHD Prep Solids										**05/12/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	UN	<4		mg/kg	1	4	5	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

Sample # 112227003
SAF# F11-074
Sample ID B2DVM0

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

Sample # 112227004
SAF# F11-074
Sample ID B2DVM2

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/kg	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

Sample # 112227001
SAF# F11-074
Sample ID B2DVP0

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		96		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

Sample # 112227002
SAF# F11-074
Sample ID B2DVP2

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

Sample # 112227003
SAF# F11-074
Sample ID B2DVM0

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		94		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Wet Chemistry

Group # WSCF112227

Sample # 112227004
SAF# F11-074
Sample ID B2DVM2

Matrix SOIL
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**05/16/11**
Total Residue										
Percent Solids	%SOLIDS	LA-519-412		93		percent	1			05/16/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

QC Batch 181831
Associated Samples 112227001, 112227002

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55284**							
Diesel	TPHDIESEL		<4	mg/kg					U	05/12/11
LCS			**QC Sample #55285**							
Diesel	TPHDIESEL		110	mg/kg	108.1	70 - 130				05/12/11
MS			**QC Sample #55286**							
			Original 112221002							
Diesel	TPHDIESEL		660	mg/kg	133.5	70 - 130			N	05/12/11
MSD			**QC Sample #55287**							
			Original 112221002					**Paired**	**55286**	
Diesel	TPHDIESEL		600	mg/kg	122	70 - 130	9.00	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

QC Batch 181869
Associated Samples 112227003, 112227004

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55336**							
1,1-Dichloroethene	75-35-4		<1	ug/kg					U	05/12/11
Trichloroethene	79-01-6		<1	ug/kg					U	05/12/11
Benzene	71-43-2		<1	ug/kg					U	05/12/11
Toluene	108-88-3		<1	ug/kg					U	05/12/11
Chlorobenzene	108-90-7		<1	ug/kg					U	05/12/11
Ethylbenzene	100-41-4		<1	ug/kg					U	05/12/11
Total Xylenes	1330-20-7		<1	ug/kg					U	05/12/11
LCS			**QC Sample #55337**							
1,1-Dichloroethene	75-35-4		31	ug/kg	123	50 - 131				05/12/11
Trichloroethene	79-01-6		19	ug/kg	76.8	66 - 119				05/12/11
Benzene	71-43-2		20	ug/kg	78.9	73 - 123				05/12/11
Toluene	108-88-3		21	ug/kg	84.2	77 - 128				05/12/11
Chlorobenzene	108-90-7		23	ug/kg	90.6	81 - 126				05/12/11
Ethylbenzene	100-41-4		21	ug/kg	82.6	75 - 125				05/12/11
MS			**QC Sample #55338**							
			Original 112221004							
1,1-Dichloroethene	75-35-4		28	ug/kg	111	75 - 125				05/12/11
Trichloroethene	79-01-6		21	ug/kg	82.6	75 - 125				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2		20	ug/kg	81.4	75 - 125				05/12/11
Toluene	108-88-3		22	ug/kg	87.8	75 - 125				05/12/11
Chlorobenzene	108-90-7		23	ug/kg	90.7	75 - 125				05/12/11
Ethylbenzene	100-41-4		20	ug/kg	81.6	75 - 125				05/12/11
MSD			**QC Sample #55339**							
			Original 112221004						**Paired 55338**	
1,1-Dichloroethene	75-35-4		31	ug/kg	123	75 - 125	10.20	30		05/12/11
Trichloroethene	79-01-6		20	ug/kg	80.9	75 - 125	2.10	30		05/12/11
Benzene	71-43-2		20	ug/kg	80.5	75 - 125	1.10	30		05/12/11
Toluene	108-88-3		22	ug/kg	86.9	75 - 125	1.00	30		05/12/11
Chlorobenzene	108-90-7		23	ug/kg	93.1	75 - 125	2.60	30		05/12/11
Ethylbenzene	100-41-4		20	ug/kg	81	75 - 125	0.70	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112227

QC Batch 181831
Associated Samples 112227001, 112227002

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112227001**							
o-Terphenyl	84-15-1				117	70 - 130				05/13/11
SAMPLE			**Sample #112227002**							
o-Terphenyl	84-15-1				111.9	70 - 130				05/13/11
BLANK			**QC Sample #55284**							
o-Terphenyl	84-15-1				99.4	70 - 130				05/12/11
LCS			**QC Sample #55285**							
o-Terphenyl	84-15-1				115	50 - 150				05/12/11
MS			**QC Sample #55286**							
			Original 112221002							
o-Terphenyl	84-15-1				148.2	50 - 150				05/12/11
MSD			**QC Sample #55287**							
			Original 112221002						**Paired 55286**	
o-Terphenyl	84-15-1				133.5	50 - 150	10.40	30		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

QC Batch 181869
Associated Samples 112227003, 112227004

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112227003**							
1,2-Dichloroethane-d4	17060-07-0				113.6	77 - 137				05/12/11
Toluene-d8	2037-26-5				86.4	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				78.3	66 - 125				05/12/11
SAMPLE			**Sample #112227004**							
1,2-Dichloroethane-d4	17060-07-0				116.2	77 - 137				05/12/11
Toluene-d8	2037-26-5				80.4	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				78.8	66 - 125				05/12/11
BLANK			**QC Sample #55336**							
1,2-Dichloroethane-d4	17060-07-0				106.4	77 - 137				05/12/11
Toluene-d8	2037-26-5				80.7	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				83.5	66 - 125				05/12/11
LCS			**QC Sample #55337**							
1,2-Dichloroethane-d4	17060-07-0				99.6	77 - 137				05/12/11
Toluene-d8	2037-26-5				82.6	78 - 122				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112227

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				97.4	66 - 125				05/12/11
MS			**QC Sample #55338**							
			Original 112221004							
1,2-Dichloroethane-d4	17060-07-0				104.8	77 - 137				05/12/11
Toluene-d8	2037-26-5				86.3	78 - 122				05/12/11
4-Bromofluorobenzene	460-00-4				93	66 - 125				05/12/11
MSD			**QC Sample #55339**							
			Original 112221004					**Paired**	**55338**	
1,2-Dichloroethane-d4	17060-07-0				106.1	77 - 137	1.20	30		05/12/11
Toluene-d8	2037-26-5				84.8	78 - 122	1.80	30		05/12/11
4-Bromofluorobenzene	460-00-4				97.1	66 - 125	4.30	30		05/12/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 11 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112227
Profile #: F11-074-066
Proj. Mgr.:
Phone:

The following samples were received from you on 5/11/2011 11:40:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112227001	B2DVP0	SOIL	5/11/2011 11:02	5/11/2011 11:40
		DRY-WEIGHT; TPHDWA-S		
112227002	B2DVP2	SOIL	5/11/2011 09:02	5/11/2011 11:40
		DRY-WEIGHT; TPHDWA-S		
112227003	B2DVM0	SOIL	5/11/2011 11:02	5/11/2011 11:40
		8260V-S; DRY-WEIGHT		
112227004	B2DVM2	SOIL	5/11/2011 09:02	5/11/2011 11:40
		8260V-S; DRY-WEIGHT		

Test Acronym Description

Test Acronym	Description
8260V-S	Volatiles by 8260B (S)
DRY-WEIGHT	Dry Weight as Pct Moisture
TPHDWA-S	TPHD-WA (S)

Sample Receipt

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSES REQUEST

F11-074-064 PAGE 1 OF 2

COLLECTOR: JS Scales, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C0434; I-001

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11 074

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: I-INF-N-507-19-3

ACTUAL SAMPLE DEPTH: 11-13ft.

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, OL=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)

112227

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool<4C	None
HOLDING TIME	14/40 Days	Months
TYPE OF CONTAINER	G	
NO. OF CONTAINER(S)	1	1
VOLUME	125mL	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP0	SOIL	MAY 11 2011	1102	✓	NC

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson M. Nelson	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

NC - Not collected per PAL

LABORATORY SECTION: RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-066

PAGE 2 OF 3

COLLECTOR: JS Bailey CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: C9434; F-001	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-507- N.3	ACTUAL SAMPLE DEPTH: 11-13ft.	COA: 301901ES10
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: BA

AIR QUALITY: ☐

DATA TURNAROUND: 3 Days / 15 Days

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

PRINTED ON 5/5/2011

A-HQD-518 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-070

PAGE 1 OF 1

COLLECTOR: JS Scales, CHPRO

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: 0943S; 1-001

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-19-3

ACTUAL SAMPLE DEPTH: 11-13ft

COA: 351901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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, SD=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	None
HOLDING TIME	14/40 Days	6 Months
TYPE OF CONTAINER	BG	G
NO. OF CONTAINER(S)	1	1
VOLUME	1 liter	500ml
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

5/11/11

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2DVP2	2	SOIL	MAY 11 2011	0902	✓	N/C

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
CHPRC	1140 MAY 11 2011	M. Nelson Hanks	MAY 11 2011 1140

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKT applies to this SAF.
(1) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(2) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

N/C - Not collected per PAL

LABORATORY SECTION: RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 5/5/2011

A-8003-668 (REV 2)

CH2MHill Hatzou Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-045 PAGE 1 OF 2

COLLECTOR: JS Scales, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 8A

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: CB034:1-001

PROJECT DESIGNATION: PFP Deactl U5T Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: [ ]

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-19.3

ACTUAL SAMPLE DEPTH: 11-13ft

COA: 3019010510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Freezing/Cool +4°C and +-2°C
HOLDING TIME	14 Days
TYPE OF CONTAINER	Jar
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM0	3	SOIL	MAY 11 2011	1102	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	1140 MAY 11 2011	M. Nelson Hines	MAY 11 2011 1140
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

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/9/2011

A 6000 618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-065

PAGE 2 OF 2

COLLECTOR: JS Sonles, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 8A	DATA TURNAROUND: 3 Days / 15 Days		
SAMPLING LOCATION: C0434; 1-061	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
AIR QUALITY:	ICE CHEST NO.:	FIELD LOGBOOK NO.: HNF-N-507-19.3	ACTUAL SAMPLE DEPTH: 11-13ft.
COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.

** All duplicate samples are to be held in reserve, following all storage protocols to preserve the samples for appropriate sampling until notified by the project that disposal can take place.
(1) VOA - 5035/8260 (LOW LEVEL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

PRINTED ON 5/5/2011

A-5005-016 (REV 7)

Chain of Custody

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8434; I-001

Sampler Initials and Date: JS Soller CHPRC MAY 11 2011

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM0	K	28.96	33.14	4.18
B2DVM0	L	28.60	53.31	4.71
B2DVM0	M	28.71	33.82	5.11
B2DVM0	N	28.27	33.94	5.67
B2DVM0	P	28.44	34.30	5.86

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everyth ng weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-525 (REV 0)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-089 PAGE 1 OF 2

COLLECTOR: JS Scales CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: BA

DATA TURNAROUND: 3 Days / 15 Days

SAMPLING LOCATION: C9432, I-001

PROJECT DESIGNATION: RFP Diesel UST Removal Verification Sampling - Soil

SAF NO.: F11-074

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-P.3

ACTUAL SAMPLE DEPTH: 11-13 ft

COA: 301901ES10

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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	Frozen/Cool (<-5°C and > -10°C)
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	ICE ITEM (1) IS SPECIAL INSTRUCTIONS

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2DVM2	4	SOIL	MAY 11 2011	0902	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011	MD M Nelson	MAY 11 2011 1140

SPECIAL INSTRUCTIONS: SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-074-069 PAGE 2 OF 2

COLLECTOR: JS Sexton CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
SAMPLING LOCATION: C3135; I-001	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - Soil		SAF NO.: F11-074
ICE CHEST NO.	FIELD LOGBOOK NO.: HNF-N-807-19-3	ACTUAL SAMPLE DEPTH: 11-13ft.	COA: 301901E510
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A

PRICE CODE: BA
AIR QUALITY:
DATA TURNAROUND: 3 Days / 15 Days
METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

** All VOA samples will be collected using EPA Method 5035A.
** VOA sample bottle sets will include 5 bottles for low level analysis.
** The laboratory is to use one of the low level VOA bottles for moisture content determination.
** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P for low level. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be include as part of the sample ID reported in the final data packages.
(1) VOA - 5035/8260 (LOW LEVEL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

PRINTED ON 5/8/2011

A 6003-690 (REV 2)

Chain of Custody

Appendix A - Sample Record Sheet, -7°C and -20°C Only (Spin Bars)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C8435; I-001

Sampler Initials and Date: MAY 1 1 2011 JS Boese CHPRC

Sample Number[1]	Sample Suffix	Initial Weight[2] (grams)	Total Weight[3] (grams)	Soil Weight[4] (grams)
B2DVM2	K	29.15	34.22	5.07
B2DVM2	L	28.52	33.29	4.77
B2DVM2	M	28.94	34.14	5.20
B2DVM2	N	28.86	33.72	4.86
B2DVM2	P	28.50	33.42	492

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

May 17, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112158

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112158

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112158
Data Deliverable Date 05/18/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-075	B2D1B2	112158001	WATER	05/02/11	05/03/11
F11-075	B2D1B3	112158002	WATER	05/02/11	05/03/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112158

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

TPHD-WA – The hold time requirements for this analysis were met. A Blank and Laboratory Control Sample and Laboratory Control Sample Duplicate were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112158

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

Gross Alpha / Gross Beta:

- Gross Beta – Duplicate Relative Percent Difference(s) (RPD) did not meet the established laboratory limits. Duplicate Relative Percent Difference (RPD) does not apply to results below 5X the minimum detectable activity. No flags issued.
  - All other applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 23 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF112158
Report Date	May 17, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Marisol Avila

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181741	181883	1	BLANK	55059	BLANK		Extractable Diesel and Petroleum
181741	181883	2	LCS	55060	LCS		Extractable Diesel and Petroleum
181741	181883	3	LCSD	55063	LCSD		Extractable Diesel and Petroleum
181741	181883	4	SAMPLE	112158002	B2D1B3		Extractable Diesel and Petroleum

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181669	181670	1	BLANK	54845	BLANK		SW-846 8260B Volatiles, separate prep
181669	181670	2	LCS	54846	LCS		SW-846 8260B Volatiles, separate prep
181669	181670	3	MS	54847	B2BB77(112152005MS)	112152005	SW-846 8260B Volatiles, separate prep
181669	181670	4	MSD	54848	B2BB77(112152005MSD)	112152005	SW-846 8260B Volatiles, separate prep
181669	181670	5	SAMPLE	112158001	B2D1B2		SW-846 8260B Volatiles, separate prep
181669	181670	6	SAMPLE	112158002	B2D1B3		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112158

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181716	181764	1	BLANK	54987	BLANK		Gross Alpha/Gross Beta
181716	181764	2	LCS	54988	LCS		Gross Alpha/Gross Beta
181716	181764	3	SAMPLE	112158002	B2D1B3		Gross Alpha/Gross Beta
181716	181764	4	SAMPLE	112158002	B2D1B3		Gross Alpha/Gross Beta
181716	181764	5	DUP	54989	B2D1B3(112158002DUP)	112158002	Gross Alpha/Gross Beta

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF112158

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

Sample # 112158002
SAF# F11-075
Sample ID B2D1B3

Matrix WATER
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Prep for Water										**05/05/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<70		ug/L	1	70	100	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

Sample # 112158001
SAF# F11-075
Sample ID B2D1B2

Matrix WATER
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/04/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

Sample # 112158002
SAF# F11-075
Sample ID B2D1B3

Matrix WATER
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/04/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/04/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/04/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112158

Sample # 112158002
SAF# F11-075
Sample ID B2D1B3

Matrix WATER
Sampled 05/02/11
Received 05/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/06/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	-0.74	1	pCi/L	1	2.1		05/12/11
Gross Beta	12587-47-2	LA-508-415		3.3	1.9	pCi/L	1	2.9		05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

QC Batch 181669
Associated Samples 112158001, 112158002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #54845**						
1,1-Dichloroethene	75-35-4		<1	ug/L				U	05/04/11
Trichloroethene	79-01-6		<1	ug/L				U	05/04/11
Benzene	71-43-2		<1	ug/L				U	05/04/11
Toluene	108-88-3		<1	ug/L				U	05/04/11
Chlorobenzene	108-90-7		<1	ug/L				U	05/04/11
Ethylbenzene	100-41-4		<1	ug/L				U	05/04/11
Total Xylenes	1330-20-7		<1	ug/L				U	05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

QC Batch 181741
Associated Samples 112158002

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #55060**							
Diesel	TPHDIESEL		2500	ug/L	101.1	65 - 128				05/12/11
LCSD			**QC Sample #55063**							
									Paired 55060	
Diesel	TPHDIESEL		2400	ug/L	96.3	65 - 128	4.90	20		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

QC Batch 181669
Associated Samples 112158001, 112158002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #54846**							
1,1-Dichloroethene	75-35-4		22	ug/L	87.6	75 - 125				05/04/11
Trichloroethene	79-01-6		24	ug/L	96.1	75 - 125				05/04/11
Benzene	71-43-2		24	ug/L	95.8	75 - 125				05/04/11
Toluene	108-88-3		24	ug/L	96.5	75 - 125				05/04/11
Chlorobenzene	108-90-7		25	ug/L	99.9	75 - 125				05/04/11
Ethylbenzene	100-41-4		24	ug/L	94.5	75 - 125				05/04/11
MS			**QC Sample #54847**							
			Original 112152005							
1,1-Dichloroethene	75-35-4		20	ug/L	80.2	75 - 125				05/04/11
Trichloroethene	79-01-6		22	ug/L	87.5	75 - 125				05/04/11
Benzene	71-43-2		23	ug/L	91.5	75 - 125				05/04/11
Toluene	108-88-3		23	ug/L	93.8	75 - 125				05/04/11
Chlorobenzene	108-90-7		25	ug/L	98.6	75 - 125				05/04/11
Ethylbenzene	100-41-4		23	ug/L	91.9	75 - 125				05/04/11
MSD			**QC Sample #54848**							
			Original 112152005						**Paired 54847**	
1,1-Dichloroethene	75-35-4		21	ug/L	82.8	75 - 125	3.20	20		05/04/11
Trichloroethene	79-01-6		22	ug/L	88.2	75 - 125	0.80	20		05/04/11
Benzene	71-43-2		23	ug/L	90.9	75 - 125	0.60	20		05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene	108-88-3		23	ug/L	93.4	75 - 125	0.40	20		05/04/11
Chlorobenzene	108-90-7		24	ug/L	96.2	75 - 125	2.50	20		05/04/11
Ethylbenzene	100-41-4		23	ug/L	90.2	75 - 125	1.90	20		05/04/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112158

QC Batch 181716
Associated Samples 112158002

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #54987**								
Gross Alpha	12587-46-1		-1.1	pCi/L						U	05/12/11
Gross Beta	12587-47-2		1.6	pCi/L						U	05/12/11
LCS			**QC Sample #54988**								
Gross Alpha	12587-46-1		78	pCi/L	95.7	80 - 120					05/12/11
Gross Beta	12587-47-2		250	pCi/L	114.4	80 - 120					05/12/11
DUP			**QC Sample #54989**								
			Original	**112158002**							
Gross Alpha	12587-46-1	-0.74	-0.74	pCi/L			0.00	20		U	05/12/11
Gross Beta	12587-47-2	3.3	4.1	pCi/L			21.60	20	*	X	05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

QC Batch 181741
Associated Samples 112158002

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55059**							
Diesel	TPHDIESEL		<80	ug/L					U	05/11/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

QC Batch 181669
Associated Samples 112158001, 112158002

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112158001**							
1,2-Dichloroethane-d4	17060-07-0				120.6	75 - 125				05/04/11
Toluene-d8	2037-26-5				97.3	75 - 125				05/04/11
4-Bromofluorobenzene	460-00-4				108.3	75 - 125				05/04/11
SAMPLE			**Sample #112158002**							
1,2-Dichloroethane-d4	17060-07-0				121.9	75 - 125				05/04/11
Toluene-d8	2037-26-5				98.7	75 - 125				05/04/11
4-Bromofluorobenzene	460-00-4				106.8	75 - 125				05/04/11
BLANK			**QC Sample #54845**							
1,2-Dichloroethane-d4	17060-07-0				118.5	75 - 125				05/04/11
Toluene-d8	2037-26-5				95	75 - 125				05/04/11
4-Bromofluorobenzene	460-00-4				108	75 - 125				05/04/11
LCS			**QC Sample #54846**							
1,2-Dichloroethane-d4	17060-07-0				117.6	75 - 125				05/04/11
Toluene-d8	2037-26-5				98.4	75 - 125				05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112158

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				122.2	75 - 125				05/04/11
MS			**QC Sample #54847**							
			Original	**112152005**						
1,2-Dichloroethane-d4	17060-07-0				119	75 - 125				05/04/11
Toluene-d8	2037-26-5				98.2	75 - 125				05/04/11
4-Bromofluorobenzene	460-00-4				120.1	75 - 125				05/04/11
MSD			**QC Sample #54848**							
			Original	**112152005**				**Paired**	**54847**	
1,2-Dichloroethane-d4	17060-07-0				119.6	75 - 125	0.50	20		05/04/11
Toluene-d8	2037-26-5				99	75 - 125	0.80	20		05/04/11
4-Bromofluorobenzene	460-00-4				119	75 - 125	0.90	20		05/04/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112158

QC Batch 181741
Associated Samples 112158002

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112158002**							
o-Terphenyl	84-15-1				108.2	70 - 130				05/12/11
BLANK			**QC Sample #55059**							
o-Terphenyl	84-15-1				103	70 - 130				05/11/11
LCS			**QC Sample #55060**							
o-Terphenyl	84-15-1				115.5	70 - 130				05/12/11
LCSD			**QC Sample #55063**							
									Paired 55060	
o-Terphenyl	84-15-1				105.2	70 - 130	9.30	20		05/12/11

Analytical Comment Report

Attention: Michael Neely

Group # WSCF112158

Quality Control Comments

55060	**LCS for HBN 181741 [ORGP/1614]**

TPH-D: LCS/LCSD ran in liue of MS/MSD.

Analytical Comment Report

Attention: Michael Neely

Group # WSCF112158

Quality Control Comments

Department Radiochemistry

54989 B2D1B3(112158002DUP)

Analyte Gross Beta - Gross Alpha/Gross Beta

[1] Duplicate RPD out-of-limits. RPD limit does not apply to results near the Minimum Detectable Concentration.

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 4 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112158
Profile #: F11-075-001
Proj. Mgr.:
Phone:

The following samples were received from you on 5/3/2011 8:00:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112158001	B2D1B2	WATER	5/2/2011 13:55	5/3/2011 08:00
		8260V-W		
112158002	B2D1B3	WATER	5/2/2011 13:10	5/3/2011 08:00
		8260V-W; GAB-AO-W; GAB-BO-W; TPHDWA-W		

Test Acronym Description

Test Acronym	Description
8260V-W	Volatiles by 8260B (W)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
TPHDWA-W	TPHD-WA (W)

Sample Receipt

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-001 PAGE 1 OF 1

COLLECTOR: KB Huise CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: PC

DATA TURNAROUND: 15 Days / 15 Days

SAMPLING LOCATION: Beneath Tank, T-001 PXR

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - QC

SAF NO.: F11-075

AIR QUALITY: ☐

ICE CHEST NO.: GWS-256

FIELD LOGBOOK NO.: HNF-N-507-15.92

ACTUAL SAMPLE DEPTH: N/A

COA: 3019015510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, BL=Bulk, L=Liquids, SW=Swipes, S=Solids, LQ=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)

112158

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Freeze/4°
HOLDING TIME	14 Days
TYPE OF CONTAINER	40z*
NO. OF CONTAINER(S)	3
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM 11 IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D1B2	L WATER	MAY 02 2011	1355	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Huise CHPRC	MAY 02 2011 1620	SSU- 1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0700	M Nelson	MAY 03 2011 0700

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1) VOA - 8260 (TCL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 4/12/2011

A-6003-618 (REV 3)

Sample Receipt

Chain of Custody

Tuesday, May 03, 2011 10:39:01 AM
Page 3 of 3

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-002 PAGE 1 OF 1

COLLECTOR: KB Hulse CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373 7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 7C	DATA TURNAROUND: 15 Days / 15 Days	SAMPLING LOCATION: Excavation Sidewall, Location B; I 003 ED	PROJECT DESIGNATION: FFP Diesel UST Removal Verification Sampling QC
SAF NO.: F11 075	AIR QUALITY: ☐	ICE CHEST NO.: 6W5-2560	FIELD LOGBOOK NO.: HNF-N-507-15-92
ACTUAL SAMPLE DEPTH: N/A	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

HATRIX*: A=Air, DS=Drum, L=Liquid, DS=Drum, S=Soil, SD=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	HCl or H2SO4 to pH <2/Cool<4°C	HCl to pH <2/Cool<4°C	HNO3 to pH <2
HOLDING TIME	14 Days	14/40 Days	6 Months
TYPE OF CONTAINER	BGP*	BL	G/P
NO. OF CONTAINER(S)	3	3	1
VOLUME	40mL	1L	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2D183 2	WATER	MAY 02 2011	1310	X	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KB Hulse CHPRC	MAY 02 2011 1620	SSU#1	MAY 02 2011 1620
SSU- 1	MAY 03 2011 0650	L.D. Wall CHPRC	MAY 03 2011 0650
L.D. Wall CHPRC	MAY 03 2011 0800	M. Nelson	MAY 03 2011 0800

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));
(2) TPH-DieselKerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(3) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 4/11/2011

6-6031-018 (REV 4)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

May 23, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112222

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112222

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112222
Data Deliverable Date 05/26/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-075	B2DVR4	112222001	WATER	05/10/11	05/11/11
F11-075	B2DVR6	112222002	WATER	05/10/11	05/11/11
F11-075	B2DVR7	112222003	WATER	05/11/11	05/11/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112222

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

TPHD-WA – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112222

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – The hold time requirement for this analysis was met. A Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- Gross Alpha / Gross Beta:
  - All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 24 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract # MOA-FH-CHPRC-2008
Group # WSCF112222
Report Date May 23, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

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Batch QC List

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181809	181899	1	BLANK	55212	BLANK		Extractable Diesel and Petroleum
181809	181899	2	LCS	55213	LCS		Extractable Diesel and Petroleum
181809	181899	3	MS	55214	B2DVR6(112222002MS)	112222002	Extractable Diesel and Petroleum
181809	181899	4	MSD	55215	B2DVR6(112222002MSD	112222002	Extractable Diesel and Petroleum
181809	181899	5	SAMPLE	112222002	B2DVR6		Extractable Diesel and Petroleum
181809	181899	6	SAMPLE	112222003	B2DVR7		Extractable Diesel and Petroleum

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181866	181867	1	BLANK	55329	BLANK		SW-846 8260B Volatiles, separate prep
181866	181867	2	LCS	55330	LCS		SW-846 8260B Volatiles, separate prep
181866	181867	3	MS	55331	B2DW62(112214001MS)	112214001	SW-846 8260B Volatiles, separate prep
181866	181867	4	MSD	55332	B2DW62(112214001MSD	112214001	SW-846 8260B Volatiles, separate prep
181866	181867	5	SAMPLE	112222002	B2DVR6		SW-846 8260B Volatiles, separate prep
181866	181867	11	SAMPLE	112222001	B2DVR4		SW-846 8260B Volatiles, separate prep
181866	181867	12	SAMPLE	112222003	B2DVR7		SW-846 8260B Volatiles, separate prep

Batch QC List

Attention Michael Neely
Department Radiochemistry

Group # WSCF112222

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181810	181920	1	BLANK	55216	BLANK		Gross Alpha/Gross Beta
181810	181920	2	LCS	55217	LCS		Gross Alpha/Gross Beta
181810	181920	3	SAMPLE	112222002	B2DVR6		Gross Alpha/Gross Beta
181810	181920	4	SAMPLE	112222002	B2DVR6		Gross Alpha/Gross Beta
181810	181920	5	DUP	55218	B2DVR6(112222002DUP)	112222002	Gross Alpha/Gross Beta
181810	181920	6	SAMPLE	112222003	B2DVR7		Gross Alpha/Gross Beta
181810	181920	7	SAMPLE	112222003	B2DVR7		Gross Alpha/Gross Beta

Method Reference

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-493	NWTPH-Dx, Extractible Diesel and Petroleum Productions Analysis in Soil and Water		
	WDOE	WDOE	Total Petroleum Hydrocarbons in Diesel
	HEIS	WTPH_DIESEL	TPH Diesel

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

Method Reference

Attention Michael Neely
Department Radiochemistry

Group # WSCF112222

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415	Operation Of The Protean 2-Inch Alpha/Beta Counting System For Gross Alpha/ Beta Samples		
	HEIS	ALPHA_GPC	Gross Alpha by GPC
	HEIS	BETA_GPC	Gross Beta by GPC
	HEIS	SRTOT_SEP_PRECIP_GPC	Strontium beta isotopic, GPC

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

Sample # 112222002
SAF# F11-075
Sample ID B2DVR6

Matrix WATER
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Prep for Water										**05/11/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<70		ug/L	1	70	100	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

Sample # 112222003
SAF# F11-075
Sample ID B2DVR7

Matrix WATER
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Prep for Water										**05/11/11**
TPHDWA										
Diesel	TPHDIESEL	LA-523-493	U	<70		ug/L	1	70	100	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < lowest calibration but >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

Sample # 112222001
SAF# F11-075
Sample ID B2DVR4

Matrix WATER
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

Sample # 112222002
SAF# F11-075
Sample ID B2DVR6

Matrix WATER
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

Sample # 112222003
SAF# F11-075
Sample ID B2DVR7

Matrix WATER
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/12/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/12/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112222

Sample # 112222002
SAF# F11-075
Sample ID B2DVR6

Matrix WATER
Sampled 05/10/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/12/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	-0.36	.5	pCi/L	1	1.3		05/20/11
Gross Beta	12587-47-2	LA-508-415	U	-1.3	1.6	pCi/L	1	3.0		05/20/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112222

Sample # 112222003
SAF# F11-075
Sample ID B2DVR7

Matrix WATER
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Alpha/Beta Prep										**05/12/11**
Gross Alpha/Beta										
Gross Alpha	12587-46-1	LA-508-415	U	0.089	.64	pCi/L	1	1.3		05/20/11
Gross Beta	12587-47-2	LA-508-415	U	-0.16	1.7	pCi/L	1	3.0		05/20/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

QC Batch 181809
Associated Samples 112222002, 112222003

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #55213**							
Diesel	TPHDIESEL		2700	ug/L	108.1	65 - 128				05/13/11
MS			**QC Sample #55214**							
			Original 112222002							
Diesel	TPHDIESEL	<70	2400	ug/L	102	73 - 123				05/13/11
MSD			**QC Sample #55215**							
			Original 112222002					**Paired**	**55214**	
Diesel	TPHDIESEL	<70	2500	ug/L	102.6	73 - 123	0.60	20		05/13/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

QC Batch 181866
Associated Samples 112222001, 112222002, 112222003

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55329**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	05/12/11
Trichloroethene	79-01-6		<1	ug/L					U	05/12/11
Benzene	71-43-2		<1	ug/L					U	05/12/11
Toluene	108-88-3		<1	ug/L					U	05/12/11
Chlorobenzene	108-90-7		<1	ug/L					U	05/12/11
Ethylbenzene	100-41-4		<1	ug/L					U	05/12/11
Total Xylenes	1330-20-7		<1	ug/L					U	05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

QC Batch 181809
Associated Samples 112222002, 112222003

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55212**							
Diesel	TPHDIESEL		<80	ug/L					U	05/13/11

Quality Control Report

Attention Michael Neely
Department Radiochemistry

Group # WSCF112222

QC Batch 181810
Associated Samples 112222002, 112222003

Test Gross Alpha/Gross Beta

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #55216**								
Gross Alpha	12587-46-1		0.36	pCi/L						U	05/20/11
Gross Beta	12587-47-2		0.42	pCi/L						U	05/20/11
LCS			**QC Sample #55217**								
Gross Alpha	12587-46-1		76	pCi/L	93.3	80 - 120					05/20/11
Gross Beta	12587-47-2		250	pCi/L	114.4	80 - 120					05/20/11
DUP			**QC Sample #55218**								
			Original 112222002								
Gross Alpha	12587-46-1	-0.36	0.18	pCi/L			-600.00	20	*	U	05/20/11
Gross Beta	12587-47-2	-1.3	0.74	pCi/L			-728.60	20	*	U	05/20/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

QC Batch 181866
Associated Samples 112222001, 112222002, 112222003

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
LCS			**QC Sample #55330**							
1,1-Dichloroethene	75-35-4		22	ug/L	88.6	75 - 125				05/12/11
Trichloroethene	79-01-6		19	ug/L	76.5	75 - 125				05/12/11
Benzene	71-43-2		19	ug/L	77.3	75 - 125				05/12/11
Toluene	108-88-3		20	ug/L	78.3	75 - 125				05/12/11
Chlorobenzene	108-90-7		20	ug/L	79.7	75 - 125				05/12/11
Ethylbenzene	100-41-4		19	ug/L	77.7	75 - 125				05/12/11
MS			**QC Sample #55331**							
			Original 112214001							
1,1-Dichloroethene	75-35-4		22	ug/L	88.8	75 - 125				05/12/11
Trichloroethene	79-01-6		21	ug/L	83.8	75 - 125				05/12/11
Benzene	71-43-2		21	ug/L	85.4	75 - 125				05/12/11
Toluene	108-88-3		21	ug/L	85.5	75 - 125				05/12/11
Chlorobenzene	108-90-7		22	ug/L	89	75 - 125				05/12/11
Ethylbenzene	100-41-4		21	ug/L	85.1	75 - 125				05/12/11
MSD			**QC Sample #55332**							
			Original 112214001						**Paired 55331**	
1,1-Dichloroethene	75-35-4		25	ug/L	98.8	75 - 125	10.70	20		05/12/11
Trichloroethene	79-01-6		22	ug/L	89.7	75 - 125	6.80	20		05/12/11
Benzene	71-43-2		23	ug/L	91.3	75 - 125	6.70	20		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene	108-88-3		23	ug/L	90.9	75 - 125	6.10	20		05/12/11
Chlorobenzene	108-90-7		24	ug/L	95	75 - 125	6.50	20		05/12/11
Ethylbenzene	100-41-4		23	ug/L	90.3	75 - 125	5.90	20		05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Semivolatiles

Group # WSCF112222

QC Batch 181809
Associated Samples 112222002, 112222003

Test Extractable Diesel and Petroleum

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112222002**							
o-Terphenyl	84-15-1				106.1	70 - 130				05/13/11
SAMPLE			**Sample #112222003**							
o-Terphenyl	84-15-1				101.7	70 - 130				05/13/11
BLANK			**QC Sample #55212**							
o-Terphenyl	84-15-1				103.7	70 - 130				05/13/11
LCS			**QC Sample #55213**							
o-Terphenyl	84-15-1				114.1	70 - 130				05/13/11
MS			**QC Sample #55214**							
			Original 112222002							
o-Terphenyl	84-15-1				112.2	70 - 130				05/13/11
MSD			**QC Sample #55215**							
			Original 112222002						**Paired 55214**	
o-Terphenyl	84-15-1				111	70 - 130	1.10	20		05/13/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

QC Batch 181866
Associated Samples 112222001, 112222002, 112222003

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
SAMPLE			**Sample #112222001**							
1,2-Dichloroethane-d4	17060-07-0				113.2	75 - 125				05/12/11
Toluene-d8	2037-26-5				93.8	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				101.4	75 - 125				05/12/11
SAMPLE			**Sample #112222002**							
1,2-Dichloroethane-d4	17060-07-0				111.7	75 - 125				05/12/11
Toluene-d8	2037-26-5				94.9	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				100.2	75 - 125				05/12/11
SAMPLE			**Sample #112222003**							
1,2-Dichloroethane-d4	17060-07-0				111.5	75 - 125				05/12/11
Toluene-d8	2037-26-5				94	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				101.1	75 - 125				05/12/11
BLANK			**QC Sample #55329**							
1,2-Dichloroethane-d4	17060-07-0				111.4	75 - 125				05/12/11
Toluene-d8	2037-26-5				91.1	75 - 125				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112222

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
4-Bromofluorobenzene	460-00-4				104	75 - 125				05/12/11
LCS			**QC Sample #55330**							
1,2-Dichloroethane-d4	17060-07-0				116.4	75 - 125				05/12/11
Toluene-d8	2037-26-5				95.4	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				113.9	75 - 125				05/12/11
MS			**QC Sample #55331**							
			Original	**112214001**						
1,2-Dichloroethane-d4	17060-07-0				113.8	75 - 125				05/12/11
Toluene-d8	2037-26-5				94.2	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				114.7	75 - 125				05/12/11
MSD			**QC Sample #55332**							
			Original	**112214001**					**Paired**	**55331**
1,2-Dichloroethane-d4	17060-07-0				110.5	75 - 125	2.90	20		05/12/11
Toluene-d8	2037-26-5				95	75 - 125	0.80	20		05/12/11
4-Bromofluorobenzene	460-00-4				114.8	75 - 125	0.10	20		05/12/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 5 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112222
Profile #: F11-075-005
Proj. Mgr.:
Phone:

The following samples were received from you on 5/11/2011 10:55:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112222001	B2DVR4	WATER	5/10/2011 12:56	5/11/2011 10:55
		8260V-W		
112222002	B2DVR6	WATER	5/10/2011 06:00	5/11/2011 10:55
		8260V-W; GAB-AO-W; GAB-BO-W; TPHDWA-W		
112222003	B2DVR7	WATER	5/11/2011 06:30	5/11/2011 10:55
		8260V-W; GAB-AO-W; GAB-BO-W; TPHDWA-W		

Test Acronym Description

Test Acronym	Description
8260V-W	Volatiles by 8260B (W)
GAB-AO-W	Gross Alpha/Beta (A only)(W)
GAB-BO-W	Gross Alpha/Beta (B only)(W)
TPHDWA-W	TPHD-WA (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-005 . PAGE 1 OF 1

COLLECTOR: JG Scales, CHPRC	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 7C	DATA TURNAROUND: 15 Days / 15 Days	SAMPLING LOCATION: CB431, 1-081 FXR	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - QC
SAF NO.: F11-075	AIR QUALITY	ICE CHEST NO.: GWS-193	FIELD LOGBOOK NO.: HNF-N-507-19.1
ACTUAL SAMPLE DEPTH: N/A	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	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)

112222

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH <2/Cool<4C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGr*
NO. OF CONTAINER(S)	3
VOLUME	40ml
SAMPLE ANALYSIS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2DVR4	L WATER	MAY 10 2011	1256

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JG Scales CHPRC	MAY 10 2011 1530	SSU #1	MAY 10 2011 1530
SSU- 1	MAY 11 2011 1030	L.D. Wall CHPRC	MAY 11 2011 1030
L.D. Wall CHPRC	MAY 11 2011 1055	Milton Sims	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.

** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1) VOA - 8260 (TCL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/13/2011

A-6003-610 (REV 2)

CH2MHill Plateau Remediation Company — **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** — F11-075-006 — PAGE 1 OF 1

COLLECTOR: Scales	COMPANY CONTACT: EVANS, RT	TELEPHONE NO.: 373-7924	PROJECT COORDINATOR: EVANS, RT
PRICE CODE: 7C	DATA TURNAROUND: 15 Days / 15 Days	SAMPLING LOCATION: C0433; 1-301 EB	PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - QC
SAF NO.: F11-075	AIR QUALITY: 7	ICE CHEST NO.: GWS-193	FIELD LOGBOOK NO.: HNF-N-507-19 pg 1
ACTUAL SAMPLE DEPTH: N/A	COA: 301901ES10	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: Waste Sampling & Characterization	OFFSITE PROPERTY NO.: N/A	BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquid, 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 Materials 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	HCl or H2SO4 to pH <2/Cool~4C	HCl to pH <2/Cool~4C	HNO3 to pH <2
HOLDING TIME	14 days	14/40 Days	6 Months
TYPE OF CONTAINER	aGlr*	aG	BP
NO. OF CONTAINER(S)	3	3	1
VOLUME	40mL	1L	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2DVR6	2 WATER	3/10/11	0600	X	X	X

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J Scales	3/10/11 1530	SSU #2	MAY 10 2011 1530
SSU- 1	MAY 11 2011 1030	SSU-1 CHPRC	MAY 11 2011 1030
LD Wall CHPRC	MAY 11 2011 1055	Victor Singh	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417FS20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};
(2) TPH-DieselKerosene Range - WTPH-D {Total petroleum hydrocarbons - diesel range};
(3) Gross Alpha {Gross alpha}; Gross Beta {Gross beta};

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

PRINTED ON 5/3/2011

A-6003-618 (REV 4)

Sample Receipt

Chain of Custody

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-007 PAGE 1 OF 1

COLLECTOR: KC Patterson, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 7C

DATA TURNAROUND: 15 Days / 15 Days

SAMPLING LOCATION: C0438, CONTENCENCY; J-001 EB

PROJECT DESIGNATION: PFP Diesel UST Removal Verification Sampling - QC

SAF NO.: F11-075

AIR QUALITY: ☐

ICE CHEST NO.: GWS-193

FIELD LOGBOOK NO.: HNF-N-507-19

ACTUAL SAMPLE DEPTH: N/A

COA: 301901E510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

OFFSITE PROPERTY NO.: N/A

BILL OF LADING/AIR BILL NO.: N/A

MATRIX*: A=Air, DI=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, P=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	HCl or H2SO4 to pH <2/Cool~4C	HCl to pH <2/Cool~4C	HNO3 to pH <2
HOLDING TIME	14 Days	14/40 Days	6 Months
TYPE OF CONTAINER	AG*	aG	G/P
NO. OF CONTAINER(S)	3	3	1
VOLUME	40mL	1L	500mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2DVR7	3 WATER	5-11-11	0630	✓	✓	✓

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
KC Patterson, CHPRC	5/11/11 0630	SSU#1	5/11/11 0630
SSU-1	MAY 11 2011 1030	L.D. Wall, CHPRC	MAY 11 2011 1030
L.D. Wall	MAY 11 2011 1055	Victor Bingham	MAY 11 2011 1055

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area SBGRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) (Benzene, Ethylbenzene, Toluene, Xylenes (total));
(2) TPH-Diesel/Kerosene Range - WTPH-D (Total petroleum hydrocarbons - diesel range);
(3) Gross Alpha (Gross alpha); Gross Beta (Gross beta);

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

4-6083-648 (REV 2)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

RECEIVED MAY 17, 2011

May 17, 2011

Michael Neely
CH2M-HILL PRC
PO Box 1600
Richland, WA 99352

Dear Michael Neely,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112226

Reference: (1) SOW, Mod 2, #36587, Release 3
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112226

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112226
Data Deliverable Date 05/26/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
F11-075	B2DVR5	112226001	WATER	05/11/11	05/11/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112226

Introduction

A sample was received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The sample was analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group.
Analytical Note(s):

- All applicable QC controls are within the established limits.

Attachment 2
Narrative
WSCF112226

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

2

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 8 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

CH2M Hill Plateau Remediation

PO Box 1600
Richland, WA 99352

Attention: Michael Neely

Contract #	MOA-FH-CHPRC-2008
Group #	WSCF112226
Report Date	May 17, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
181866	181867	1	BLANK	55329	BLANK		SW-846 8260B Volatiles, separate prep
181866	181867	2	LCS	55330	LCS		SW-846 8260B Volatiles, separate prep
181866	181867	3	MS	55331	B2DW62(112214001MS)	112214001	SW-846 8260B Volatiles, separate prep
181866	181867	4	MSD	55332	B2DW62(112214001MSD	112214001	SW-846 8260B Volatiles, separate prep
181866	181867	13	SAMPLE	112226001	B2DVR5		SW-846 8260B Volatiles, separate prep

Method Reference

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	Volatile Sample Analysis by SW-846 Method 8260B		
	EPA SW-846	8000B	Determinative Chromographic Separations
	EPA SW-846	8260B	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
	HEIS	8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at http://www7.rl.gov/rapidweb/AS-DOL/index.cfm

WSCF Analytical Results Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

Sample # 112226001
SAF# F11-075
Sample ID B2DVR5

Matrix WATER
Sampled 05/11/11
Received 05/11/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
8260 Prep										**05/12/11**
SW-846 8260B										
1,1-Dichloroethene	75-35-4	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Trichloroethene	79-01-6	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Benzene	71-43-2	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Toluene	108-88-3	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Chlorobenzene	108-90-7	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Ethylbenzene	100-41-4	LA-523-455	U	<1		ug/L	1	1	5	05/13/11
Total Xylenes	1330-20-7	LA-523-455	U	<1		ug/L	1	1	5	05/13/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
D - Analyte was reported at a secondary diltution factor.
E - The calibration exceeds the calibration range (GC/MS).
J - Analyte < PQL (or EQL) >= MDL.
N - Presumed evidence based on MS library search(GC/MS only)

T - MS/MSD recovery outside control limits(GC/MS only).
U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
N - MS and/or MSD recovery outside control limits.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

QC Batch 181866
Associated Samples 112226001

Test SW-846 8260B Volatiles, separate prep

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #55329**							
1,1-Dichloroethene	75-35-4		<1	ug/L					U	05/12/11
Trichloroethene	79-01-6		<1	ug/L					U	05/12/11
Benzene	71-43-2		<1	ug/L					U	05/12/11
Toluene	108-88-3		<1	ug/L					U	05/12/11
Chlorobenzene	108-90-7		<1	ug/L					U	05/12/11
Ethylbenzene	100-41-4		<1	ug/L					U	05/12/11
Total Xylenes	1330-20-7		<1	ug/L					U	05/12/11
LCS			**QC Sample #55330**							
1,1-Dichloroethene	75-35-4		22	ug/L	88.6	75 - 125				05/12/11
Trichloroethene	79-01-6		19	ug/L	76.5	75 - 125				05/12/11
Benzene	71-43-2		19	ug/L	77.3	75 - 125				05/12/11
Toluene	108-88-3		20	ug/L	78.3	75 - 125				05/12/11
Chlorobenzene	108-90-7		20	ug/L	79.7	75 - 125				05/12/11
Ethylbenzene	100-41-4		19	ug/L	77.7	75 - 125				05/12/11
MS			**QC Sample #55331**							
			Original 112214001							
1,1-Dichloroethene	75-35-4		22	ug/L	88.8	75 - 125				05/12/11
Trichloroethene	79-01-6		21	ug/L	83.8	75 - 125				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Benzene	71-43-2		21	ug/L	85.4	75 - 125				05/12/11
Toluene	108-88-3		21	ug/L	85.5	75 - 125				05/12/11
Chlorobenzene	108-90-7		22	ug/L	89	75 - 125				05/12/11
Ethylbenzene	100-41-4		21	ug/L	85.1	75 - 125				05/12/11
MSD			**QC Sample #55332**							
			Original 112214001					**Paired**	**55331**	
1,1-Dichloroethene	75-35-4		25	ug/L	98.8	75 - 125	10.70	20		05/12/11
Trichloroethene	79-01-6		22	ug/L	89.7	75 - 125	6.80	20		05/12/11
Benzene	71-43-2		23	ug/L	91.3	75 - 125	6.70	20		05/12/11
Toluene	108-88-3		23	ug/L	90.9	75 - 125	6.10	20		05/12/11
Chlorobenzene	108-90-7		24	ug/L	95	75 - 125	6.50	20		05/12/11
Ethylbenzene	100-41-4		23	ug/L	90.3	75 - 125	5.90	20		05/12/11
SAMPLE			**Sample #112226001**							
1,2-Dichloroethane-d4	17060-07-0				115.4	75 - 125				05/13/11
Toluene-d8	2037-26-5				93.9	75 - 125				05/13/11
4-Bromofluorobenzene	460-00-4				100.7	75 - 125				05/13/11
BLANK			**QC Sample #55329**							
1,2-Dichloroethane-d4	17060-07-0				111.4	75 - 125				05/12/11
Toluene-d8	2037-26-5				91.1	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				104	75 - 125				05/12/11
LCS			**QC Sample #55330**							
1,2-Dichloroethane-d4	17060-07-0				116.4	75 - 125				05/12/11

Quality Control Report

Attention Michael Neely
Department Organic, Volatiles

Group # WSCF112226

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
Toluene-d8	2037-26-5				95.4	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				113.9	75 - 125				05/12/11
MS			**QC Sample #55331**							
			Original	**112214001**						
1,2-Dichloroethane-d4	17060-07-0				113.8	75 - 125				05/12/11
Toluene-d8	2037-26-5				94.2	75 - 125				05/12/11
4-Bromofluorobenzene	460-00-4				114.7	75 - 125				05/12/11
MSD			**QC Sample #55332**							
			Original	**112214001**				**Paired**	**55331**	
1,2-Dichloroethane-d4	17060-07-0				110.5	75 - 125	2.90	20		05/12/11
Toluene-d8	2037-26-5				95	75 - 125	0.80	20		05/12/11
4-Bromofluorobenzene	460-00-4				114.8	75 - 125	0.10	20		05/12/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 3 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Michael Neely

Customer Code: CHPRC
PO #: 401417/ES20
Work Order #: 112226
Profile #: F11-075-008
Proj. Mgr.:
Phone:

The following samples were received from you on 5/11/2011 11:40:00 AM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112226001	B2DVR5	WATER	5/11/2011 09:02	5/11/2011 11:40
		8260V-W		

Test Acronym Description

Test Acronym	Description
8260V-W	Volatiles by 8260B (W)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-075-008

PAGE 1 OF 1

COLLECTOR: JS Scales, CHPRC

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

PRICE CODE: 7C

DATA TURNAROUND: 15 Days / 15 Days

SAMPLING LOCATION: 200 SW-1 C8435

CHOICE CONTINGENCY: 1 COI FOR

PROJECT DESIGNATION: PFP Dead UST Removal Verification Sampling - QC

SAF NO.: F11-075

AIR QUALITY: ☐

ICE CHEST NO.:

FIELD LOGBOOK NO.: HNF-N-507-19.3

ACTUAL SAMPLE DEPTH: N/A

COA: 3019016510

METHOD OF SHIPMENT: GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO: Waste Sampling & Characterization

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)

112226

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HCl or H2SO4 to pH<2/Cool=4C
HOLDING TIME	14 Days
TYPE OF CONTAINER	40z
NO. OF CONTAINER(S)	3
VOLUME	40ml
SAMPLE ANALYSIS	VOA (1) or special instructions

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2DVR5	WATER	MAY 11 2011	0902

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
JS Scales CHPRC	MAY 11 2011 1140	M. Nelson	MAY 11 2011 1140

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401417ES20.
** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) VOA - 8260 (TCL) {Benzene, Ethylbenzene, Toluene, Xylenes (total)};

LABORATORY SECTION: RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION: DISPOSAL METHOD | DISPOSED BY | DATE/TIME

PRINTED ON 5/5/2011

4-6003-613 (REV 2)

Appendix E

Disposal Documentation

- UST and Soil Disposal Documentation
- UST System Piping Disposal Documentation
- (2011 06 08) Disposal Summary Email from Jim Leary (of CH2MHill)

Onsite Waste Tracking Form
200W-11-6726

Generator Information

1. Point of Origin: 2345Z / PFPSWS*301901
2. Container Number: P-280
3. Date Filled: 5/5/11
4. Description (check only one): ☐ SOIL ☐ 50/50 ☒ Debris ☐ All Metal

(Check all of the following that apply) ☐ Asbestos ☒ Items > 10 ft long/oversized ☐ Combustibles

Concrete or Boulders > 4 ft in any dimension: ☐ Slabs ☐ Blocks ☐ Boulders

Metal: ☐ Sheeting ☒ Piping ☐ Structural ☐ Fence Post ☐ Rebar ☐ Wire Rope ☐ Wire Mesh ☐ Fencing

Other:
STANDARD BULK WASTE
~~WOOD, PAPER, PLASTIC AND METAL~~ 5/5/11
EMPTY FUEL TRANSFER LINE PIPES (6) - EACH ~17' LONG

☐ Multiple OWTFs: _____

Disposal Information

5. ☐ Disposal ☐ Stockpile ☐ Treatment - Batch # _____
6. ☐ Placed Pending Action ☐ MACRO ☐ GROUT FILL
   Action/Disposal Completed: Initials: _____ Date: _____
7. Disposal Coordinates: Block #: _____ Elevation: _____
   Initials: _____ Date: _____

Handling Information

8. Waste Profile No.: **WPPFPAG001 Rev# 5**
9. Template Name: NON BE PFP CLEAN UP RO/RO REV 5
10. Sum of Fractions: Haz. Cat. 3: 3.1844E-03 Combustible: 1.6528E-03 Soil, Powder, Metals: 1.9067E-04 Grout, Concrete: 3.1848E-06

DOT Information

11. Generator's Name/Mailing Address:
US EPA ID# WA7890008967
U.S. Department of Energy Richland Operations
In Care of CH2M HILL - PLATEAU REMEDIATION CONTRACTOR
P.O. Box 550
Richland, WA 99352

12. Transporter Company:
MISSION SUPPORT ALLIANCE

13. Date Shipped
5/6/11

14. Container Type: BULK METAL BOX
15. Number of Containers: 1
16. Emergency Contact:
EBS 438-2236

17. Gross Wt. (kg): 4995
18. Net Wt. (kg): 1729.1
19. Waste Vol. (m^3): 7.00

20. US DOT Description (ID No., PSN, HC, PG) ERG#: 162 Label: NA
UN3321, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, FISSILE EXCEPTED, SOLID, OXIDE

PLACARD: RADIOACTIVE

21. Radionuclide List: Am-241, Co-60, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Sr-90, U-234, U-235, U-238
22. Applicable Waste Codes: NONE
23. Total TBqs: 2.17E-04
24. Exclusive Use Shipment: ☑ Y ☐ N
25. SPA Checklist No.: N/A
26. DE-Ci: 1.60E-03
27. NRC Class: A

28. This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature: SCHOUVILLER, ADAM L 5-6-11

Published Date: 02/25/2011 Effective Date: 02/25/2011

Data Sheet B –ERDF RO/RO Container Contents Inventory Sheet

Page 1 of 1

Item #	Waste Description	Room/Area	Estimated Weight lbs/kgs	Operator Initials	Date	Removable Contamination (dpm/100 cm^2)
1	(6) 17' Diesel Fuel Transfer Line Pipes (7" Dia) (Empty)	ZB (under Ground)	1,800 lbs	TT	5-5-11	< 100 dpm

Beryllium Present Yes ☐ No ☒

Asbestos Present Yes ☐ No ☒

Container Number: P280

ERDF Profile and Revision: WP-PFPA6001 Rev 5

Waste Operations Manager: GARY HAYNES (Print Name) [signature] (Signature) 5/5/11 (Date)

Data Sheet A – ERDF RO/RO Container Inspection Form

Date: 5-5-11

Container Number: P280

			COMMENTS
Tarp Condition:	☑ Satisfactory	☐ Unsatisfactory	
Water Status:	☑ Satisfactory	☐ Unsatisfactory	
Primary Latch Check	☑ Satisfactory	☐ Unsatisfactory	
Secondary Latch Check	☑ Satisfactory	☐ Unsatisfactory	
Ratchet Check:	☑ Satisfactory	☐ Unsatisfactory	
Seal Check:	☑ Satisfactory	☐ Unsatisfactory	
Liner Installed:	☑ Yes	☐ No	
Absorbent Sock Installed:	☑ Yes	☐ No	
Freeze Protection Applied[1]:	☐ Yes	☑ No	

Inspected By: Travis Trulson [signature] 5-5-11
Print Name Signature Date

[1] Apply antifreeze between October 31st and March 31st

Comments:

Onsite Waste Tracking Form
200W-11-3031

1. Point of Origin: 2345Z / PFPSWS*301901
2. Container Number: P-220
3. Date Filled: 5/4/11

4. Description (check only one): ☐ SOIL ☒ 50/50 ☐ Debris ☐ All Metal

(Check all of the following that apply) ☐ Asbestos ☐ Items > 10 ft long/oversized ☐ Combustibles

Concrete or Boulders > 4 ft in any dimension: ☐ Slabs ☐ Blocks ☐ Boulders

Metal: ☐ Sheeting ☐ Piping ☐ Structural ☐ Fence Post ☐ Rebar ☐ Wire Rope ☐ Wire Mesh ☐ Fencing

Other:
STANDARD BULK WASTE
~~WOOD, PAPER, PLASTIC AND METAL:~~ SS 5/5/11
FIBERGLASS TANK PIECES AND DIRT SS 5/5/11

☐ Multiple OWTFs: _____

5. ☐ Disposal ☐ Stockpile ☐ Treatment - Batch # _____

6. ☐ Placed Pending Action ☐ MACRO ☐ GROUT FILL
Action/Disposal Completed: Initials: _____ Date: _____

7. Disposal Coordinates: Block #: _____ Elevation: _____
Initials: _____ Date: _____

8. Waste Profile No.: **WPPFPAG001 Rev# 5**
9. Template Name: NON BE PFP CLEAN UP RO/RO REV 5

10. Sum of Fractions: Haz. Cat. 3: 3.1844E-03 Combustible: 1.6528E-03 Soil, Powder, Metals: 1.9067E-04 Grout, Concrete: 3.1848E-06

11. Generator's Name/Mailing Address:
US EPA ID# WA7890008967
U.S. Department of Energy Richland Operations
In Care of CH2M HILL - PLATEAU REMEDIATION CONTRACTOR
P.O. Box 550
Richland, WA 99352

12. Transporter Company:
MISSION SUPPORT ALLIANCE

13. Date Shipped
5/5/11

14. Container Type: BULK METAL BOX SS 5/5/11
15. Number of Containers: 1
16. Emergency Contact:
EBS 720-891-0420

17. Gross Wt. (kg): ~~4995~~ 12,338 SS 5/5/11
18. Net Wt. (kg): ~~4729.1~~ 9072
19. Waste Vol. (m^3): 7.00

20. US DOT Description (ID No., PSN, HC, PG) ERG#: 162 Label: NA
UN3321, RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, FISSILE EXCEPTED, SOLID, OXIDE

PLACARD: RADIOACTIVE

21. Radionuclide List: Am-241, Co-60, Cs-137, Np-237, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Sr-90, U-234, U-235, U-238
22. Applicable Waste Codes: NONE
23. Total TBqs: 2.17E-04
24. Exclusive Use Shipment: ☒ Y ☐ N
25. SPA Checklist No.: N/A
26. DE-CI: 1.60E-03
27. NRC Class: A

28. This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Signature: ~~*SCHOUVILLER, ADAM L~~ Scott Weiss Scott Weiss 5/5/11

Data Sheet B –ERDF RO/RO Container Contents Inventory Sheet

Page 1 of 1

Item #	Waste Description	Room/Area	Estimated Weight lbs/kgs	Operator Initials	Date	Removable Contamination (dpm/100 cm^2)
1	FIBER GLASS + DIRT TANK pieces	HLFP	20,000	[illegible]	5-4-11	<10,000

Beryllium Present Yes ☐ No ☒ **Asbestos Present Yes ☐ No ☒**

Container Number: P-220

ERDF Profile and Revision: WP-PFPAG001 Rev 5

Waste Operations Manager: Gary Haynes [signature] 5/4/11

Print Name Signature Date

Data Sheet A – ERDF RO/RO Container Inspection Form

Date: 5-4-11

Container Number: D 220

			COMMENTS
Tarp Condition:	☑ Satisfactory	☐ Unsatisfactory	
Water Status:	☑ Satisfactory	☐ Unsatisfactory	
Primary Latch Check	☑ Satisfactory	☐ Unsatisfactory	
Secondary Latch Check	☑ Satisfactory	☐ Unsatisfactory	
Ratchet Check:	☑ Satisfactory	☐ Unsatisfactory	
Seal Check:	☑ Satisfactory	☐ Unsatisfactory	
Liner Installed:	☑ Yes	☐ No	
Absorbent Sock Installed:	☑ Yes	☐ No	
Freeze Protection Applied[1]:	☐ Yes	☑ No	

Inspected By: JACK MEYER (Print Name) (Signature) 5-4-11 (Date)

[1] Apply antifreeze between October 31st and March 31st

Comments:

Josh Owen

From: Leary, James M [James_M_Leary@RL.gov]
Sent: Wednesday, June 08, 2011 7:45 AM
To: Josh Owen
Subject: RE: Request for UST Decommissioning Disposal Documentation
Attachments: Empty Tank_UST_Diesel.pdf; Empty Fuel Line_UST_Diesel.pdf

Josh,

The following provides the information you requested (also, see attached).

1. The tank, fuel line, and the excavated soil were all disposed of at the Environmental Restoration Disposal Facility (ERDF) here at the Hanford Site. The attachments are the paperwork for the tank, fuel line, and dirt.

2. The fuel was pumped out of the day tanks (3 x 25 gallons) and out of the underground diesel storage tank by the Mission Support Alliance contractor to use as product here on the Hanford Site. In other words, it was not disposed of.

3. Water that was used to decontaminate the sampling equipment was collected, adsorbed and disposed of at ERDF also.

The work package that directed the pump out and the demolition of the fuel tank and line is 2Z-09-07547.

The photos of the generator and the day tank has to go through a clearance process with legal and other down town people. I will get them to you as soon as I can.

If you need to contact me, please call me on my cell phone.

Thanks,

Jim

Jim Leary
Environmental Compliance
PFP Closure–CHPRC
MO-2122 / 200 West
Phone: (509) 942-6675
Cell: (541) 554-0172
James_M_Leary@rl.gov

From: Josh Owen [mailto:jowen-msba@gorge.net]
Sent: Tuesday, June 07, 2011 4:09 PM
To: Leary, James M
Subject: Request for UST Decommissioing Disposal Documentation

Jim:

Please provide any form of documentation you have pertaining to the following:

1) Disposal documentation for product removed from the tank and it's end location or proposed use (i.e. recycling, re-use...)
2) Disposal documentation for soil removed from the tank cavity
3) Disposal documentation for water used in the decontamination process for sampling

Something like a simple letter describing where the three items were disposed would suffice.

Sincerely,

Josh Owen

Project Manager

Martin S. Burck Associates, Inc.
Geologic and Environmental Consulting Services

200 North Wasco Court
Hood River, Oregon 97031
Phone: 541 387 4422
Cell: 503 805 8797
Fax: 541 387 4813
Email: jowen-msba@gorge.net

Appendix F

Underground Storage Tank Closure and Site Assessment Notice
Underground Storage Tank Site Check/Site Assessment Checklist

UNDERGROUND STORAGE TANK
Closure and Site Assessment Notice

ECOLOGY

See back of form for instructions

FOR OFFICE USE ONLY
Site ID #: 12763
Facility Site ID #: 6532881

Please ✓ the appropriate box(es)
☐ Temporary Tank Closure ☐ Change-In-Service ☒ Permanent Tank Closure ☒ Site Check/Site Assessment

Site Information

Site ID Number UST Site ID 12763
(Available from Ecology if the tanks are registered)
Site/Business Name US Department of Energy
Street
Site Address 200 W Hanford Site
City/State Richland, WA
Zip Code 99352 Telephone (509) 372-0879

Owner Information

UST Owner/Operator US DOE (ATTN Stephen Weil)
Mailing Address
Street
P.O. BOX 550
P.O. Box
City/State Richland, WA
Zip Code 99352 Telephone (509) 372-0879

Owners Signature Stephen R Weil

Tank Closure/Change-In-Service Company

Service Company Eastern Oregon Petroleum, LLC
Certified Supervisor Ron Sasser Decommissioning Certification No. 1842917-42
Supervisor's Signature Ron Sasser Date 5-31-11
Address 513 SW 6th
Street P.O. Box
Pendleton Oregon 97801 Telephone (541) 276-6122
City State Zip Code

Site Check/Site Assessor

Certified Site Assessor Josh Owen
Address 200 North Wasco Court
Street P.O. Box
Hood River Oregon 97031 Telephone (541) 387-4422
City State Zip Code

Tank Information

Tank ID	Closure Date	Closure Method	Tank Capacity	Substance Stored
2721Z-2	05/11/2011	Removal	2,500 gal	#2 Diesel

Contamination Present at the Time of Closure

☐ Yes ☐ No ☒ Unknown
Check unknown if no obvious contamination was observed and sample results have not yet been received from analytical lab.

☐ Yes ☐ No
If contamination is present, has the release been reported to the appropriate regional office?

To receive this document in an alternative format, contact the Toxics Cleanup Program at 360-407-7170 (voice) or 1-800-833-6388 OR 711 (TTY)

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

FOR OFFICE USE ONLY
Site #: 12763
Facility Site ID #: 5532661

INSTRUCTIONS

When a release has not been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person certified by ICC or a Washington registered professional engineer who is competent, by means of examination, experience, or education, to perform site assessments. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This information must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
PO Box 47655
Olympia WA 98504-7655

SITE INFORMATION

Site ID Number (Available from Ecology if the tanks are registered): 12763
Site/Business Name: US Department of Energy (ATTN Stephen Weil)
Site Address: 200 West Hanford Site (Street) Telephone: (509) 372-0879
Richland (City) Washington (State) 99352 (Zip Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
2721Z-2	2,500 gallons	#2 Diesel Fuel

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- ____ Investigate suspected release due to on-site environmental contamination.
- ____ Investigate suspected release due to off-site environmental contamination.
- ____ Extend temporary closure of UST system for more than 12 months.
- ____ UST system undergoing change-in-service.
- ✔ UST system permanently closed with tank removed.
- ____ Abandoned tank containing product.
- ____ Required by Ecology or delegated agency for UST system closed before 12/22/88.
- ____ Other (describe): ____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.	YES	NO
1. The location of the UST site is shown on a vicinity map.	✓	
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	✓	
3. A summary of UST system data is provided. (see Section 3.1.)	✓	
4. The soils characteristics at the UST site are described. (see Section 5.2)	✓	
5. Is there any apparent groundwater in the tank excavation?		✓
6. A brief description of the surrounding land use is provided. (see Section 3.1)	✓	
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	✓	
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	✓	
- groundwater samples distinguished from soil samples (if applicable)		✓
- samples collected from stockpiled excavated soil	✓	
- tank and piping locations and limits of excavation pit	✓	
- adjacent structures and streets	✓	
- approximate locations of any on-site and nearby utilities	✓	
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	✓	
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	✓	
11. Any factors that may have compromised the quality of the data or validity of the results are described.	✓	

12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.		✓

SITE ASSESSOR INFORMATION

Josh Owen — Person registered with Ecology

Martin S. Burck Assoc. Inc. — Firm Affiliated with

Business Address: 200 North Wasco Court (Street) Telephone: (541) 387-4422

Hood River (City) Oregon (State) 97031 (Zip Code)

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

6/9/11 — Date

Josh M Owen — Signature of Person Registered with Ecology

If you need this publication in an alternate format, please contact Toxics Cleanup Program at (360) 407-7170. For persons with a speech or hearing impairment call 711 for relay service or 800-833-6388 for TTY.

Appendix G

CD - Copy of Report