FINAL

BURIED WASTE EVALUATION
REPORT

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LIST OF ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylene
BP	burial pit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cpm	counts per minute
EB	equipment blank
GM	Geiger-Mueller
GW	groundwater
GWS	gamma walkover survey
ID	identification
IDW	investigation-derived waste
IS	internal standard
^{40}K	potassium-40
MS	matrix spike
MSD	matrix spike duplicate
MDNR	Missouri Department of Natural Resources
mg/L	milligrams per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NRC	U.S. Nuclear Regulatory Commission
%	percent
PB	perimeter borings
pCi/g	picoCuries per gram
pCi/L	picoCuries per liter
PCE	tetracholorethene
pH	potential of hydrogen
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PVC	polyvinyl chloride
QC	quality control
RAD	radiological analyses
RI	remedial investigation
RR	red room
SO	soil
STL	Severn Trent Laboratory
^{99}Tc	technicium-99
^{231}Th	thorium-231
^{234}Th	thorium-234
TCE	**t**richloroethene
TDS	total dissolved solids
TOC	total organic carbon
^{234}U	uranium-234
^{235}U	uranium-235
^{238}U	uranium-238
USCS	Unified Soil Classification System
VA	soil vapor
VOC	volatile organic compound
WA	water [trip blank]
WEC	Westinghouse Electric Company
WS	waste

1.0 INTRODUCTION

The Westinghouse former fuel cycle facility (the Facility) in Hematite, Missouri ceased production in June 2001 after nearly 47 years of operations under several owners and operators. In September 2001, Westinghouse Electric Company (WEC) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) to amend its license, changing the scope of licensed activities to those associated with decommissioning. The NRC issued the requested license amendment in April 2002.

Historical operations at the Facility have resulted in impacts to soil and groundwater from radiological and chemical constituents. WEC is addressing site environmental conditions pursuant to the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Facility is identified on the Comprehensive Environmental Response, Compensation, and Liability Information System but is not currently on the National Priorities List (NPL), nor is it proposed for NPL listing.

In November 2006, under contract with WEC, Cabrera Services, Inc. (CABRERA) conducted subsurface investigation activities in two areas of the Facility to provide information on the characteristics of buried waste and surrounding soil. The results of this investigation are presented in this Buried Waste Investigation Evaluation Report (Evaluation Report).

2.0 PURPOSE AND OBJECTIVES

The purpose of this Evaluation Report is to present the additional data obtained by CABRERA from two areas of the Facility where wastes were previously buried in soil (i.e., the Burial Pits and Red Room Roof Burial Area) in accordance with *EO-06-004 Work Plan for Buried Waste Investigation* (WEC, 2006a). These areas are presented on Figure 2-1.

The primary objectives of the field activity were to gather information regarding the:

- Extent of buried waste;
- Location of individual pits;
- Thickness of cover soils atop the burial pits;
- Waste thickness within individual burial pits;
- Characteristics (both radiological and chemical) of waste material;
- Characteristics (both radiological and chemical) of soil and water within and around the burial pits; and
- Potential for volatile organic compound (VOC) air emissions from waste and soil**.**

The data generated from the field activities will be used to supplement the existing information regarding the Burial Pits and the Red Room Roof area.

The field activities included advancement of soil borings using hollow stem augers equipped with split spoon samplers in and around representative burial pits. Soil cores were collected by the split spoon samplers and screened in the field using instruments to detect radiological and chemical contaminants. The field screening results were the basis for selection of the section of the cores submitted to Severn Trent Laboratories (STL) for analysis.

3.0 DATA COLLECTION AND RESULTS

3.1 Field Activity Summary

From November 13 through November 18, 2006, four borings in the Red Room Roof Burial Area (Table 3-1), 35 borings in the Burial Pits (three of which were converted into monitoring wells) (Table 3-2), and 40 Burial Pit area perimeter borings were advanced (Table 3-3). The approximate boring locations are illustrated on Figure 3-1. The purpose of these investigation borings was to verify locations of selected individual burial pits, assess characteristics of the waste and surrounding soils (both radiological and chemical), delineate burial pit boundaries, and determine the thickness of soil cover overlying burial pit waste materials.

Burial pit borings were advanced using all-terrain CME 550 drill rigs equipped with 4¼ -inch hollow stem augers and 3-inch split spoon samplers. Split-spoon samples were generally obtained on a continuous basis. Perimeter borings were drilled using a Geoprobe™ Macro-Core sampler. Direct push samples were collected continuously in 4-foot acetate liners. Drilling and sampling were accomplished in accordance with good drilling practices and applicable American Society for Testing and Materials (ASTM) procedures. Field geologists provided technical direction during field exploration, observed drilling and sampling procedures, collected samples, and prepared descriptive logs of the materials encountered.

3.2 Sample Identification and Analysis Requirements

Sample nomenclature for this investigation was of the form WW-XX-YY-ZZ, where WW describes the medium (SO = soil, WS = waste, WA = water [trip blank], GW = groundwater, and VA = soil vapor). XX is a general descriptive term describing the general location of the sample; e.g., RR (Red Room Roof Area), BP (Burial Pit Area), or PB (perimeter boring). This was followed by YY, consisting of an integer representing the number of the soil boring or burial pit (1 to 9) followed by an alphanumeric character (A through H) designating a particular soil boring within a burial pit. The last two characters (ZZ) consist of a two digit integer representing the depth of the sample in feet below ground surface.

Samples were submitted for analysis of the following parameters:

- Gamma spectroscopy (EPA 901.1 MOD);

- Isotopic thorium and uranium by alpha spectroscopy (EML A-01-R MOD);
- Percent (%) moisture (MCAWW 160.3 MOD);
- Technicium-99 (^{99}Tc) by liquid scintillation (EML TC-02-RC MOD); and
- Volatile organics by gas chromatography/mass spectroscopy (SW846 8260B).

Note: Sample results for uranium-238 (^{238}U) and uranium-235 (^{235}U) are provided using EPA 901.1 MOD (gamma spectroscopy) and EML A-01-R MOD (alpha spectroscopy) analytical methods. Since ^{238}U and ^{235}U both decay primarily by alpha particle emission, with accompanying low energy, low probability per decay, gamma emission, the activities of these two radionuclides when analyzed via gamma spectroscopy, are typically inferred based on the readily detected gamma emissions from the decay product or daughter radionuclides, i.e., indirect or surrogate analysis. Therefore, ^{238}U and ^{235}U results via gamma spectroscopy presented in this report are based on the activities of thorium-234 (^{234}Th) and thorium-231 (^{231}Th), respectively. This is an accepted method when direct analytical methods are not available or employed, and the relationship or ratio between the radionuclide of concern and surrogate, i.e., parent and daughter, is understood. For ^{238}U and ^{235}U activities in soil reported via gamma spectroscopy, the indirect or surrogate method assumes a parent to daughter (or surrogate) ratio of 1:1. For radioactivity in soil, the most significant source of error when using indirect analytical methods is associated with this ratio. Environmental factors can cause significant deviation from the 1:1 ratio assumed.

As indicated, soil samples were also analyzed via alpha spectroscopy, a direct analytical method for alpha emitting radionuclides such as ^{238}U and ^{235}U. Direct analytical methods generally provide more accurate results. Therefore, when both methods are employed, analytical results for alpha emitting radionuclides should be reported using the direct method, and when comparing the results from the two methods, variations in reported activities are expected and observed.

Quality control samples were collected at a rate of one duplicate per 10 target samples (10%) for all radiological and chemical analyses. Additionally, matrix spike (MS) and matrix spike duplicate (MSD) analyses were collected at a rate of one MS/MSD per 20 target samples (5%) for all chemical analyses. Equipment blank (EB) and smear samples were collected from decontaminated sampling equipment at a rate of 1 per 20 target samples (5%) to evaluate the potential for cross-contamination in the chemical and radiological samples, respectively.

3.3 Investigation, Sample Collection and Monitoring Well Installation

The depth of investigation was loosely defined as the interface between waste material and natural soil beneath the waste in each burial pit, estimated prior to the initiation of field activities at 16 feet, but varying in the field from 8 to 18 feet. Soils encountered were classified using the Unified Soil Classification System (USCS). Boring logs are presented in Appendix A. Soils were screened for radioactivity using a Geiger-Mueller (GM) detector. Soils were also screened for VOCs using a photoionization detector (PID). The PID was calibrated to an isobutylene standard of 100 parts per million (ppm) prior to use. Soil samples were collected for laboratory analysis from zones that exhibited the highest instrument readings. When elevated readings were not observed, samples were collected at the bottom of the boring. The boring logs represent conditions observed at the time of exploration. Unless noted on the boring logs, the lines designating the changes between soil strata represent approximate boundaries. The transition between materials may be gradual or may occur between recorded samples. To the extent practicable, a gamma log was performed at 1-foot intervals in various borings and at each of the monitoring wells. The results of this logging effort are listed on the respective boring logs. Gamma logs were collected in nine of the Burial Pit Area soil borings.

Monitoring wells were installed in the centers of burial pits, specifically in the “A” designated borings. The monitoring wells were constructed with 2-inch diameter, 0.010-inch slotted, polyvinyl chloride (PVC) well screen and 2-inch PVC risers. A filter pack consisting of silica sand was placed around the screens and extended above the top of the screens. Hydrated granular bentonite was placed over the filter packs as a seal. Specific monitoring well construction details are presented in applicable Burial Pit discussions. The boring activities, monitoring well construction, and abandonment procedures were performed in accordance with the Missouri Department of Natural Resources (MDNR) requirements, outlined in 10 CSR 23-4,

Monitoring Well Construction Code (MDNR, 1996). The monitoring well certifications are presented in Appendix B.

Hollow stem augers were decontaminated between borings using a pressure washer in a designated decontamination area. Split spoon samplers and macro-tube samplers were decontaminated between each use with a non-phosphate Alconox® wash and tap water rinse. All investigation-derived waste (IDW) generated during drilling activities was placed in 55-gallon drums stored on site prior to disposition in accordance with the PO-WM-003, *Investigation Derived Waste Management Plan* (WEC, 2006b).

Three base maps of the Burial Pit area were prepared for this Evaluation Report. Figure 3-1 presents the surveyed physical features and sample locations from this investigation and the previous remedial investigation (RI) completed by Westinghouse (WEC, 2007). Figure 3-2 presents the information in Figure 3-1 along with the results of the gamma walkover survey (GWS) performed during the RI. Figure 3-3 presents the information presented in Figure 3-1 along with the results of the previous geophysical surveys performed by Allgeier, Martin, & Associates Inc. (Allgeier, 1998) and Geophex LTD. (Geophex, 2003).

3.3.1 Red Room Roof Area

Four shallow borings were advanced in this area, and are designated as Red Room (RR) -6 through RR-9. Borings RR-1 through RR-5 were advanced during the RI (WEC, 2007). The purpose of the additional borings was to identify the extent of the buried material and type of waste buried in this area. The borings were completed to auger refusal. Boring depths ranged from 2 to 5 feet below ground surface (bgs). The surface of the burial area is a grassy lawn, underlain by dry, stiff, crumbly, brown silt to clayey silt extending to the top of buried concrete. The buried waste ranged in depth from 2 to 4 feet bgs and consisted of brick and concrete fragments. GM detector readings in this area were near background. VOCs were not detected with the PID in this area. Samples were collected at depths depicted on the boring logs and in Table 3-1 and were submitted for VOC and radiological (RAD) analyses.

Minimal VOCs were detected in the Red Room Roof Burial Area soil borings, with acetone and methylene chloride, both of which are common laboratory contaminants, being the only VOCs

detected. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-4. A summary of the VOC and RAD analyses are presented in Tables 3-4 and 3-5, respectively. Complete analytical results are presented in Appendix C.

3.3.2 Burial Pit Area

The proposed boring locations were selected to identify the center and edges of six burial pits identified in the Work Plan (*WEC, 2006a*). These locations were staked by WEC personnel prior to initiation of field work. The locations were based on historical aerial photograph interpretation. Borings in this area were labeled "BP" for Burial Pit.

In the following subsections, the sampling approach and results are described for each Burial Pit. For this project, the Burial Pits were numbered as BP-1 through BP-7, and each boring for the respective pit was then lettered sequentially for the number of borings in each pit. One Burial Pit initially identified (BP-3) was not investigated due to accessibility issues in the field; Burial Pit 7 was chosen as a replacement location. Burial Pit borings 8 and 9 were not scoped in the Work Plan; they are additional borings completed during the field activities. These two additional borings were made available as a result of combining two corner locations for Pits 5 and 7 (as discussed in Section 3.4.6). The first boring in each pit, the "A" boring, was located in the center of the pit and was used to penetrate the waste zone for purposes of determining soil cover and waste thicknesses. The purpose of the corner borings was to verify the lateral extent of the pit boundary. If waste was encountered at one of these corner locations, that boring was abandoned and another boring was "stepped out" approximately 5 feet from the original boring. This methodology was followed until waste was not encountered at the corner boring locations. If water was encountered in the center ("A") boring, a monitoring well was installed at that location.

The thickness of the soil cover was assessed in all the burial pit borings. The thickness of the cover appeared to be in excess of 4 feet in all the borings. An exact measurement was not possible because the cover soil to waste interface was not pronounced. The waste material observed in the borings was typically degraded and when the waste was observed it was always deeper than four feet (typically in the 6 to 10 foot bgs range).

3.3.2.1 Burial Pit 1 (BP-1)

Six borings were advanced at this pit location (Figure 3-5). Waste was identified in the center boring BP-1A and in corner boring BP-1E. Boring BP-1F was "stepped out" from BP-1E to delineate the lateral extent of the pit boundary. The thickness of the waste encountered in borings BP-1A and BP-1E ranged from approximately 3 to 4 feet and generally consisted of plastic and metal fragments mixed with gray to brown, silty clay soils. GM detector readings in the waste zone were slightly higher than background readings. VOCs were not detected with the PID. Waste was not observed in corner borings BP-1B, -1C, -1D, or -1F.

The soil overlying the waste extended approximately 6 to 12 feet bgs. The soil cap generally consisted of silt, clayey silt, and silty clay. The soils surrounding and underlying the waste generally consisted of gray, plastic clay with mottling and trace silts. The bottom of the waste ranged from approximately 10 to 15 feet bgs. A monitoring well was initially installed in boring BP-1A but was later abandoned because no water accumulated in the well over a 6 hour period. Downhole gamma logs were completed in BP-1A and BP-1E, and moderate gamma activity (approximately 2 times background) was observed at nine feet bgs near the soil cover/waste interface and silt/clay interface, respectively. There was no correlation between the depth of the sample at 14 feet bgs and the gamma log. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples SO-BP1A-12, SO-BP1A-14, SO-BP1B-09, SO-BP1C-09, SO-BP1C-10, SO-BP1D-12, SO-BP1E-07, and SO-BP1F-06 were collected from Burial Pit 1 between November 14th, and 16th, 2006. All of these samples except SO-BP1A-14 were submitted for VOCs analysis and all of these samples except SO-BP1A-12 and SO-BP1C-09 were submitted for RAD analyses. The primary VOCs detected in Burial Pit 1 were tetrachloroethene (PCE), PCE degradation products, 1,4-dichlorobenzene, acetone, chlorobenzene, and methylene chloride. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-5. A summary of the VOC and RAD analyses are presented in Tables 3-6 and 3-7, respectively. Complete analytical results are presented in Appendix C.

3.3.2.2 **Burial Pit 2 (BP-2)**

Five borings consisting of a center boring (BP-2A) with four pit corner borings (BP-2B, BP-2C, BP-2D, and BP-2E) were advanced at this pit location (Figure 3-6). Waste was observed in boring BP-2A from approximately 6 to 10 feet bgs. The waste generally consisted of pea gravel, plastic, and metal drum pieces mixed with brown, clayey silt, sand, and plastic clay soils. Elevated readings were not detected with the GM detector or the PID; however, biased samples were taken of the soils. A 2-inch diameter monitoring well was installed in boring BP-2A, with a screened interval from 6.5 to 11.5 feet bgs. Gamma log results in BP-2A did not indicate anomalous readings and the logging was terminated (at the water table) above the waste material and the soil sample. No correlation between the gamma log, waste, or soil sample could be determined.

Waste was not observed in pit corner borings BP-2B through BP-2E. Soil stratigraphy in the perimeter borings generally consisted of clayey silt to silt in the top 10 feet underlain by brown plastic clay with mottling. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples WS-BP2A-11, SO-BP2B-08, SO-BP2B-12, SO-BP2C-12, SO-BP2C-16, SO-BP2D-05, SO-BP2D-13, SO-BP2E-07, and SO-BP2E-12 were collected from BP-2 on November 14 and 15, 2006. Soil samples WS-BP2A-11, SO-BP2B-08, SO-BP2C-16, SO-BP2D-13, and SO-BP2E-12 were submitted for VOCs analysis and soil samples WS-BP2A-11, SO-BP2B-12, SO-BP2C-12, SO-BP2D-05, and SO-BP2E-07 were submitted for RAD analyses. The primary VOCs detected in BP-2 were PCE, PCE daughter products, 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113), acetone, and methylene chloride. The primary RAD activity detected in BP-2 was from ^{40}K, ^{234}Th, and uranium isotopes. A summary of the VOC and RAD analyses are presented in Tables 3-8 and 3-9, respectively. The boring locations, along with a summary of the detected analytical results, are presented as Figure 3-6.

In addition to the soil samples, leachate sample GW-BP2-XX was collected on November 16, 2006, and was submitted for VOCs, RAD, total metals, pH, total dissolved solids (TDS), hardness, and total organic carbon (TOC) analyses. The VOCs detected in the leachate sample were consistent with the VOCs detected in the soil samples. A summary of the leachate VOC

and RAD analyses are presented in Tables 3-10 and 3-11, respectively. Leachate metals and wet chemistry analyses are presented in Table 3-12. Complete analytical results are presented in Appendix C and summarized on Figure 3-7.

3.3.2.3 **Burial Pit 4 (BP-4)**

Six borings were advanced in this pit location (Figure 3-8). Waste was not observed in the center pit boring BP-4A; however, clay with orange flecks was observed at 6 feet bgs. A monitoring well was not installed at this location because waste had not been encountered.

Waste was discovered in pit corner boring BP-4E. Boring BP-4F was stepped out to delineate the lateral extent of the pit boundary. The waste in BP-4E generally consisted of plastic with soil at 9 feet. Elevated readings were not detected with the GM detector and PID; however, biased soil samples were collected from soil cores.

Soil stratigraphy in borings without waste generally consisted of brown clayey silt to silty clay underlain by brown plastic clay with mottling. A downhole gamma log was completed in BP-4A, and no gamma activity of interest was observed and there was no correlation between the logging and the depth of the soil sample. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples SO-BP4A-04, SO-BP4B-08, SO-BP4C-10, SO-BP4D-08, SO-BP4E-09, and SO-BP4F-08 were collected from Burial Pit 4 on November 15, 16, and 17, 2006 and submitted for VOC and RAD analyses. The primary VOCs detected in BP-4 were acetone, toluene, and total xylene. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-8. A summary of the VOC and RAD analyses are presented in Tables 3-14 and 3-15, respectively. Complete analytical results are presented in Appendix C.

For the VOC results, it should be noted that initial analysis of soil sample SO-BP4F-08 yielded internal standard (IS) area counts that were not within the laboratory's quality control (QC) acceptance criteria. The laboratory re-analyzed this sample and the re-analysis yielded acceptable IS area counts along with comparable sample results. However, the re-analysis was performed outside of the 14-day hold time. Since the results of the re-analysis were comparable with the original analysis, professional judgment was used to report the original analysis results.

3.3.2.4 **Burial Pit 5 (BP-5)**

Five borings consisting of a center-of-pit boring (BP-5A) and four pit corner borings (BP-5B through BP-5E) were advanced in this pit location (Figure 3-9). Waste was observed in center boring BP-5A from approximately 6 to 12 feet bgs. The waste generally consisted of plastic bags and gloves (personnel protective equipment [PPE]) mixed with soil). Elevated readings were not detected with the GM detector and PID; however, biased samples were taken of the soils. A 2-inch diameter monitoring well was installed in boring BP-5A. The screen interval extended from 5 to 10 feet bgs.

Waste was not observed in the corner borings, BP-5B through BP-5E. The soil stratigraphy in the corner borings generally consisted of silty clay and brown plastic clay underlain by brown plastic clay with mottling. Downhole gamma logs were completed in BP-5A and -5B, and readings several times background were observed in BP-5B at 3 feet bgs and there were no readings of interest observed in BP-5A. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples WS-BP5A-07, SO-BP5A-12, SO-BP5B-10, SO-BP5C-08, SO-BP5D-08, SO-BP5E-10 were collected from Burial Pit 5 on November 15 and 16, 2006. Soil samples SO-BP5A-12, SO-BP5B-10, SO-BP5C-08, SO-BP5D-08, SO-BP5E-10 were submitted for VOCs analysis and soil samples WS-BP5A-07, SO-BP5B-10, SO-BP5C-08, SO-BP5D-08, SO-BP5E-10 were submitted for RAD analyses. The primary VOCs detected in Burial Pit 5 were PCE, PCE daughter products, 1,4-dichlorobenzene, acetone, chlorobenzene, and methylene chloride. The primary RAD activity detected in Burial Pit 5 was from ^{40}K and $^{233/234}$U. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-9. A summary of the VOC and RAD analyses are presented in Tables 3-15 and 3-16, respectively. Complete analytical results are presented in Appendix C.

In addition to the soil samples, leachate sample GW-BP5A-XX was collected on November 17, 2006, and was submitted for VOCs, RAD, total metals, pH, TDS, hardness, and TOC analyses. The majority of VOCs detected in the leachate sample were consistent with the VOCs detected in the soil samples; however, a few additional VOCs were detected in leachate sample GW-BP5A-XX at low concentrations. A summary of the detected analytical results, are presented as

Figure 3-10. A summary of the leachate VOC and RAD analyses are presented in Tables 3-17 and 3-18, respectively. Leachate metals and wet chemistry analyses are presented in Table 3-19. Complete analytical results are presented in Appendix C.

3.3.2.5 **Burial Pit 6 (BP-6)**

Eight borings were advanced in this pit location (Figure 3-11). Waste was identified in six of the eight borings, BP-6A, -6C, -6D, -6F, -6G, and -6H. The waste generally consisted of brown silt to clayey silt containing black silty sand, wood and plastic fragments. The split spoon sampler did not recover soils from 8 to 12 feet bgs in boring BP-6A, and the hole was terminated without determining the waste thickness. GM detector readings in the waste zone up to 300 counts per minute (cpm) were noted at 6 to 7 feet bgs. The downhole gamma log completed in BP-6A recorded activity of up to 15 times background at the same interval of the waste materials starting at 8 feet bgs. The soil sample depth at BP-6A did not correlated with the gamma log The PID detected 7,500 ppm VOCs in BP-6A. Waste was not observed in corner borings BP-6B, and BP-6E.

A plywood fragment was recovered from a depth of 11.5 feet bgs in BP-6C that yielded a GM detector reading of 11,000 cpm. WEC was advised of this finding and they immediately transported the fragment to their laboratory for further analysis.

The soil thickness capping the waste extended approximately 6 to 12 feet bgs in Burial Pit 6. The cover soil generally consisted of silt and clayey silt to silty clay. The soil underlying the waste was not observed due to poor recovery and hole collapse in BP-6A before completion. A monitoring well was not installed in boring BP-6A. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples SO-BP6A-06, SO-BP6B-09, SO-BP6C-12, SO-BP6D-12, SO-BP6E-14, SO-BP6F-09, and SO-BP6G-09 were collected from BP-6 on November 17 and 18, 2006 and were submitted for VOCs and RAD analyses. The primary VOCs detected in BP-6 were PCE, PCE daughter products, BTEX (benzene, toluene, ethylbenzene, and xylene) compounds, acetone, 2-butanone, and chloroethane.

For the VOC results, it should be noted that initial analyses of soil samples SO-BP6C-12, SO-BP6G-10 and SO-BP6E-14 yielded IS area counts that were not within the laboratory's QC acceptance criteria. The laboratory re-analyzed these samples and the re-analyses yielded acceptable IS area counts along with comparable sample results. However, the re-analyses were performed outside of the 14-day hold time. Since the results of the re-analyses were comparable with the original analyses, professional judgment was used to report the original analyses results. A summary of the VOC and RAD analyses are presented in Tables 3-20 and 3-21, respectively. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-11. Complete analytical results are presented in Appendix C.

Based on the elevated field measurements observed from the PID at BP-6, soil gas sample VA-BP6A-XX was collected with a SUMMA canister on November 18, 2006 and submitted for VOC analysis in order to assess the potential for VOC air emissions from the contaminated soil. The VOCs detected in soil gas sample VA-BP6A-XX were consistent with the VOCs detected in the soil samples, suggesting that the VOCs contained in the soil have the potential to volatilize into the air at BP-6. A summary of the detected analytical results for the soil vapor sample, are presented as Figure 3-12. A summary of the soil vapor VOC analyses are presented in Table 3-22. Complete analytical results are presented in Appendix C.

3.3.2.6 **Burial Pit 7 (BP-7)**

BP-7 was established in lieu of BP-3 due to accessibility issues associated with BP-3. Three boring were completed in BP-7. These included BP-7A, BP-7B, and BP-7C. BP-7 also "shared" two corner borings with BP-5 (BP-5D and BP-5E, Figure 3-13). Therefore, two additional corner borings were not advanced in BP-7, but were subsequently placed as borings BP-8 and BP-9 (discussed in Section 3.4.7). Boring depths in BP-7 ranged from 10 to 12 feet bgs. Waste material was observed in boring BP-7A at 8 feet bgs and consisted of a rubber hose mixed with soils. Elevated readings were not detected with the GM detector and PID in this waste zone. The cover soil was composed of brown silty clay to brown plastic clay. A 2-inch diameter monitoring well was installed in Boring BP-7A to a depth of 11 feet bgs with a screen interval extending from 5 to 8 feet bgs. A downhole gamma log was completed in BP-7A, and gamma

activity of 1.5 times background was observed at 6 feet bgs and correlates to the same depth of the soil sample. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples WS-BP7A-06, WS-BP7A-08, SO-BP7B-08, SO-BP7B-10, and SO-BP7C-12 were collected from Burial Pit 7 on November 17, 2006. Soil samples WS-BP7A-06, SO-BP7B-10, and SO-BP7C-12 were submitted for VOCs analysis and soil samples WS-BP7A-08, SO-BP7B-08, and SO-BP7C-12 were submitted for RAD analyses. The primary VOCs detected in BP-7 were PCE, PCE daughter products, 1,4-dichlorobenzene, acetone, and total xylenes.

For the VOC results, it should be noted that initial analysis of soil sample SO-BP7B-10 yielded IS area counts that were not within the laboratory's QC acceptance criteria. The laboratory re-analyzed this sample and the re-analysis yielded acceptable IS area counts along with comparable sample results. However, the re-analysis was performed outside of the 14-day hold time. Since the results of the re-analysis were comparable with the original analysis, professional judgment was used to report the original analysis results. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-13. A summary of the VOC and RAD analyses are presented in Tables 3-23 and 3-24, respectively. Complete analytical results are presented in Appendix C.

In addition to the soil samples, leachate sample GW-BP7A-XX was collected on November 18, 2006, and was submitted for VOC, RAD, total metals, pH, TDS, hardness, and TOC analyses. The majority of VOCs detected in the leachate sample were consistent with the VOCs detected in the soil samples; however, several additional VOCs including Freon 113 were also detected in leachate sample GW-BP7A-XX. It is worth noting that relative to the soil samples, the VOC concentrations and RAD activity were higher in leachate sample GW-BP7A-XX. The approximate boring locations, along with a summary of the detected analytical results, are presented as Figure 3-14. A summary of the leachate VOC and RAD analyses are presented in Tables 3-25 and 3-26, respectively. Leachate metals and wet chemistry analyses are presented in Table 3-27. Complete analytical results are presented in Appendix C.

3.3.3 Additional Burial Pit Area Borings

Borings BP-8A and BP-9A were single borings completed in the field to attempt to identify additional pits.

3.3.3.1 **Boring BP-8A.**

Boring BP-8A was advanced in the center of a surface depression located south of BP-7 (Figure 3-15). Waste was observed in boring BP-8A at 7 feet bgs and consisted of plastic mixed with soil. No water was observed at this boring location. A downhole gamma log was completed in BP-8A, and gamma activity increased to approximately 3 times background at 7 feet bgs consistent with the observed waste material. The gamma log did not correlate with the depth of the radiological soil sample at 10 feet bgs. No elevated PID or GM detector readings were observed in soil cores. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil samples WS-BP8A-08 and WS-BP8A-10 were collected on November 17, 2006. Soil sample WS-BP8A-08 was submitted for VOCs analysis and soil sample WS-BP8A-10 was submitted for RAD analyses. The primary VOC detected in BP-8 was 1,4-dichlorobenzene, with acetone, TCE, and TCE daughter products also being detected at lower concentrations.

The location for BP-8A, along with a summary of the detected analytical results, are presented as Figure 3-15. A summary of the VOC and RAD analyses are presented in Tables 3-28 and 3-29, respectively. Complete analytical results are presented in Appendix C.

3.3.3.2 **Boring BP-9A.**

Boring BP-9A was situated between BP-6 and Perimeter Boring 23 (Section 3.5), both of which exhibited elevated VOC readings in the field (Figure 3-16). The location for BP-9 was chosen to attempt to further delineate the extent of potential VOCs, as well as being located in the area where radiological material was detected during the RI (subsurface location DS-01 on Figure 3-1). Waste was not encountered at BP-9A. A temporary PVC well was installed at BP-9A, which was abandoned after a leachate sample had been collected (details below). No elevated PID or GM detector readings were observed in soil cores. Boring IDs, sample depths, and termination depths are presented in Table 3-2.

Soil sample SO-BP9A-16 was collected and submitted for VOC and RAD analyses on November 18, 2006. The primary VOCs detected in BP-9 were PCE, PCE daughter products, and acetone. The location for BP-8A, along with a summary of the detected analytical results, are presented as Figure 3-16. A summary of the VOC and RAD analyses are presented in Tables 3-30 and 3-31, respectively. Complete analytical results are presented in Appendix C.

Leachate sample GW-BP9A-XX was collected from BP-9 on November 18, 2006, and was submitted for VOC, RAD, total metals, pH, TDS, hardness, and TOC analyses. The majority of VOCs detected in the leachate sample were consistent with the VOCs detected in the soil sample; however, several additional VOCs including Freon 113 were also detected in the leachate sample. A summary of the detected analytical results from the leachate sample are presented as Figure 3-16. A summary of the leachate VOC and RAD analyses are presented in Tables 3-32 and 3-33, respectively. Leachate metals and wet chemistry analyses are presented in Table 3-34. Complete analytical results are presented in Appendix C.

3.4 Perimeter Geoprobe Borings

Perimeter Borings PB-1 through PB-40 were advanced in areas surrounding the Burial Pits (Figure 3-1). The purpose of these borings was to confirm that waste is not present on the perimeter of the area of investigation. Borings were completed to a depth of 16 feet bgs. Generally, the soil consisted of brown silty clay to clayey silt, underlain by brown plastic clay with gray mottling. Boring logs are presented in Appendix A.

Elevated activity was detected with the GM detector in boring PB-22. A GM detector reading of 200 cpm and a PID reading of 4.8 ppm were observed at the bottom of boring PB-22, where refusal was encountered at 13 feet bgs. The soil generally consisted of wet, olive clayey silt. No waste was observed at the sample depth. Fill clay extending 10 feet bgs consisted of brown clayey silt with asphalt and mechanically processed limestone fragments and screenings embedded throughout. A piece of black poly material was observed at 8 feet bgs.

A PID reading of 1,693 ppm was measured at 13 feet bgs in boring PB-23. That value was observed at the bottom of the boring which refusal was encountered at 13.5 feet bgs. The soil generally consisted of olive silty clay with an observable odor. A GM detector reading of 20

cpm was measured at this depth, which was consistent with background readings. Waste was not observed at this depth. Soil vapor monitoring implants were installed at 6.5 and 10.5 feet bgs in boring PB-23. The soil vapor monitoring implants consisted of a 6-inch section of ¼-inch diameter stainless steel screen. Polyethylene tubing was inserted into the implant and extended to the surface. A sand filter pack was placed around each implant. Bentonite seals were then placed in the annular space between vapor points and between the filter packs and the surrounding land surfaces. After sample collection, the implants were abandoned.

Elevated activity estimated at 2 to 3 times background was detected with the GM detector at approximately 14 feet bgs in boring PB-26. An amber-colored broken bottle was discovered at 12 feet bgs. The soil in this zone consisted of brown and gray silty fill clay. The GM detector reading was 100 cpm, and PID readings of up to 5.8 ppm were observed. WEC personnel obtained a sample of the soil core for further testing. Fill clay extending to 12 feet bgs in boring PB-26 consisted of brown clayey silt with asphalt, and mechanically processed limestone fragments were embedded throughout. The boring was terminated at 14.5 feet bgs, where the downhole tools refused.

Soil samples were collected from each boring location consistent with those of the burial pits/area soil samples. Each of these samples was screened with the GM detector and PID, and those that exhibited elevated readings (higher than 2 to 3 times background) were selected for laboratory analysis. A total of seven soil boring samples were selected for laboratory analysis based on the field screening: SO-PB5-04, SO-PB10-10, SO-PB11-07, SO-PB23-13, SO-PB24-15, SO-PB28-12, and SO-PB32-08. Boring IDs and termination depths are presented in Table 3-3. A summary of the soil VOC and RAD analyses for all the perimeter boring samples submitted for analysis are presented in Tables 3-35 and 3-36, respectively. Complete analytical results are presented in Appendix C.

<u>Soil Boring Sample SO-PB5-04:</u> Soil boring sample SO-PB5-04 was collected on November 14, 2006 and was submitted for RAD analyses. Minimal activity was detected in soil sample SO-PB5-04. RAD analytical results are presented in Table 3-36.

Soil Boring Sample SO-PB-10-10: Soil boring sample SO-PB-10-10 was collected on November 15, 2006 and was submitted for VOC analysis. Acetone was the only VOC detected in sample SO-PB-10-10 (Table 3-35).

Soil Boring Sample SO-PB11-07: Soil boring sample SO-PB11-07 was collected on November 15, 2006 and was submitted for VOC analysis. The primary VOCs detected in this sample were acetone, 2-butanone, ethylbenzene, and total xylene (Table 3-35).

Soil Boring Sample SO-PB23-13: Soil boring sample SO-PB23-13 was collected on November 17, 2006 and submitted for VOC analysis. The primary VOCs detected in this sample were TCE, TCE daughter products, BTEX compounds, isopropylbenzene, acetone, methylcyclohexane, acetone, and 2-butanone (Table 3-35).

Based on the elevated field measurements observed from the PID at PB-23, soil gas sample VA-PB23-XX was collected with a SUMMA canister on November 18, 2006 and submitted for VOC analysis in order to assess the potential for VOC air emissions from the contaminated soil. Table 3-37 presents a summary of the analytical results for this vapor sample. The VOCs detected in soil gas sample VA-PB23-XX were consistent with the VOCs detected in the soil samples; however, several other VOCs including Freon 113 and 1,2-Dichloro-1,1,2,2-tetrafluoroethane were also detected. The presence of VOCs in the soil gas sample consistent with VOCs present in the soil sample suggest that the VOCs contained in the soil have the potential to volatilize into the air at PB-23, however, the 4 feet of soil cover probably precludes air seepage into the environment.

Soil Boring Sample SO-PB24-15: Soil boring sample SO-PB24-15 was collected on November 17, 2006 and submitted for VOC analysis. The primary VOCs detected in this sample were TCE, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), acetone, and 2-butanone. It should be noted that initial analysis of soil sample SO-PB24-15 yielded IS area counts that were not within the laboratory's QC acceptance criteria. The laboratory re-analyzed the sample and the re-analysis yielded acceptable IS area counts along with comparable sample results. However, the re-analysis was performed outside of the 14-day hold time. Since the results of the re-analysis were

comparable with the original analysis, professional judgment was used to report the original analysis results (Table 3-35).

Soil Boring Sample SO-PB28-12: Soil boring sample SO-PB28-12 was collected on November 17, 2006 and submitted for VOC analysis. Acetone was the only VOC detected in this sample. It should be noted that initial analysis of soil sample SO-PB28-12 yielded IS area counts that were not within the laboratory's QC acceptance criteria. The laboratory re-analyzed the sample and the re-analysis yielded acceptable IS area counts along with comparable sample results. However, the re-analysis was performed outside of the 14-day hold time. Since the results of the re-analysis were comparable with the original analysis, professional judgment was used to report the original analysis results (Table 3-35).

Soil Boring Sample SO-PB32-08: Soil boring sample SO-PB28-12 was collected on November 18, 2006 and submitted for VOC analysis. The primary VOCs detected in this sample were acetone and 2-butanone (Table 3-35).

4.0 SUMMARY AND CONCLUSIONS

The investigation objectives stated in Section 2.0 were satisfied through the boring and well data collected and presented in this Evaluation Report.

- Extent of buried waste: Less waste was encountered than expected based on the available historical information.
- Location of individual pits: The borings were strategically located to successfully delineate the pit boundaries. Waste was encountered in several of the corner borings and the strategy to use step-off borings was successful in locating the extent of the burial pits.
- Thickness of cover soils at the burial pits: The thickness of cover soils was at least 4 feet in all the borings.
- Waste thickness within individual burial pits: The waste thickness in the burial pits was problematic to determine since a significant amount of time has lapsed since the waste was initially placed and the borings provide a narrow window to observe the nature of the buried waste. The waste, when present, was degraded and thinly layered.
- Characteristics (radiological) of soil: ^{232}Th and decay products, as well as ^{235}U and decay products, ^{238}U and decay products (including ^{234}U) and ^{40}K are naturally occurring radionuclides present in soil throughout the world. The concentrations of ^{232}Th and decay products and ^{40}K in soil samples obtained during this evaluation were indicative of the expected concentrations of these radionuclides in natural soil within the United States. The uranium isotopes ^{238}U, ^{235}U and ^{234}U are the primary radionuclides of concern at the Hematite site. Processing of uranium ore, conversion and subsequent enrichment has resulted in the removal of a majority of the decay products associated with these radionuclides. However, since these radionuclides and all daughter products in each decay chain are expected in natural soil, these decay products are identified in the analysis results as well. Contaminants resulting from re-processed fuel used as feed material consisting of ^{99}Tc were detected in soil and leachate samples.
- Characteristics (both radiological and chemical) of waste material: The characteristics of the contaminants, where observed in the burial pit borings, reflect the solvents and radionuclides that were expected. The extent of the contamination appears to be limited as seen from the limited detections in the Perimeter Borings.
- Potassium-40 (^{40}K): Concentrations of ^{40}K in soil samples ranged from 12 to 24 picoCuries per gram (pCi/g), with a mean of 17 pCi/g. This range is typical of ^{40}K in natural soils. Leachate sample GW-BP9 contained 246 pCi per liter (pCi/L) ^{40}K, but also contained 342 milligrams per liter (mg/L) potassium, which is approximately the natural abundance of the isotope with respect to the dissolved metal concentration.

- ^{234}U: Concentrations of the ^{234}U ranged from 1 to 840 pCi/g, with a mean of 66 pCi/g. The highest concentration of 840 pCi/g (+/- 120 pCi/g) was from the Red Room Roof boring RR-06 at a depth of 1 foot bgs.
- ^{235}U: Concentrations of ^{235}U ranged from 0.01 to 26.3 pCi/g, with a mean of 2.55 pCi/g. The highest concentration of 26.3 pCi/g (+/- 8.3 pCi/g) was from Burial Pit 6 boring BP6D at a depth of 12 feet bgs.
- ^{238}U: Concentrations of ^{238}U ranged from -0.1 to 102 pCi/g, with a mean of 6 pCi/g. The highest concentration of 102 pCi/g (+/- 19 pCi/g) was from Burial Pit 6 boring BP6D at a depth of 12 feet bgs.
- Potential for VOC air emissions from waste and soil**:** The potential for air emissions appears to be minimal based on the adequate cover and the limited VOC detections from PID screening.

5.0 REFERENCES

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(WEC, 2006b) *Westinghouse Electric Company, Hematite, Missouri. Investigation Derived Waste Management Plan, PO-WM-003, November 6, 2006*

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TABLES

TABLE 3-1 RED ROOM ROOF AREA BORING DATA					
Boring ID	**Date**	**Boring Depth (Feet)**	**Depth to Top of Buried Material (Feet)**	**Sample Interval[A] (Feet)**	**Waste Description**
RR-6	11/13/2006	4	3	1	brick and concrete
RR-7	11/13/2006	5	4.6	1	concrete
RR-8	11/13/2006	5	4.6	5	concrete
RR9	11/13/2006	2	1	1	concrete

NOTE: All measurements are depth below ground surface (bgs).

[A] The interval where soil samples were taken in each boring. The depth interval of soil for radiological analysis is listed first followed by the depth interval for that of the chemical analysis. If one depth interval is listed, then this interval was used for both the radiological and chemical analyses. -

TABLE 3-2 BURIAL PIT BORING DATA						
Boring ID	**Date**	**Total Depth (Feet)**	**Thickness of Soil Atop Buried Material - Top of Waste(Feet)**	**Bottom of Waste (Feet)**	**Sample Interval[A]**	**Waste Description/Comments**
BP-1A	11/14/2006	18	12	15	14/12	Metal and plastic fragments
BP-1B	11/14/2006	16	WNO		9	
BP-1C	11/14/2006	14	WNO		10	
BP-1D	11/15/2006	14	WNO		12	
BP-1E	11/15/2006	12	6	10	7	plastic, cigarette
BP-1F	11/16/2006	8	WNO		6	
BP-2A	11/14/2006	14	6	10	11	plastic bags and gloves, metal drum parts
BP-2B	11/14/2006	12	WNO		12/8	
BP-2C	11/14/2006	16	WNO		12/16	
BP-2D	11/15/2006	14	WNO		5	
BP-2E	11/15/2006	14	WNO		7/12	
BP-4A	11/15/2006	10	WNO		4	Clay with orange flecks at 6 ft
BP-4B	11/16/2006	10	WNO		8	
BP-4C	11/16/2006	12	WNO		10	
BP-4D	11/16/2006	10	WNO		8	
BP-4E	11/17/2006	10	9	9	9	plastic
BP-4F	11/17/2006	8	WNO		8	
BP-5A	11/15/2006	14	6	12	7/12	plastic and gloves
BP-5B	11/15/2006	16	WNO		10	
BP-5C	11/16/2006	12	WNO		8	
BP-5D	11/16/2006	12	WNO		8	
BP-5E	11/16/2006	12	WNO		10	
BP-6A	11/17/2006	11	6	8	6	black silt
BP-6B	11/17/2006	14	WNO		9	
BP-6C	11/17/2006	12	11.5	12	12	wood (refusal at 12)
BP-6D	11/18/2006	14	10	14	12	plastic
BP-6E	11/18/2006	16	WNO		14	
BP-6F	11/18/2006	10	9	9.5	9	wood
BP-6G	11/18/2006	10	9	10	10	black sand
BP-6H	11/18/2006	12	8	12	Not sampled	black sand
BP-7A	11/17/2006	12	WNO		8/6	
BP-7B	11/17/2006	10	WNO		8/10	
BP-7C	11/17/2006	12	WNO		12	
BP-8A	11/17/2006	14	8	8	10/8	rubber hose
BP-9A	11/17/2006	18	WNO		16	Drilled near BP-6

All depths are measured from below ground surface (bgs) and are based on boring log information

A The interval where soil samples were taken in each boring. The depth interval of soil for radiological analysis is listed first followed by the depth interval for that of the chemical analysis. If one depth interval is listed, then this interval was used for both the radiological and chemical analysis.

WNO=Waste Not Observed

TABLE 3-3 PERIMETER BORING DATA				
Boring ID	**Date**	**Boring Depth (Feet bgs)**	**Top of Native Soil (Feet bgs)**	**Groundwater (Feet bgs)**
PB-1	11/14/2006	16	2	10 - 12
PB-2	11/14/2006	16	5	10 - 12
PB-3	11/14/2006	16	4	10
PB-4	11/14/2006	16	5	9
PB-5	11/14/2006	16	4	10
PB-6	11/14/2006	16	5	NA
PB-7	11/15/2016	16	2	NA
PB-8	11/15/2006	16	1	9 - 10
PB-9	11/15/2006	16	1	9 - 10
PB-10	11/15/2006	16	1	NA
PB-11	11/15/2006	16	4	8 - 10
PB-12	11/15/2006	16	1	7
PB-13	11/16/2006	15	2	NA
PB-14	11/16/2006	16	4	11 - 12
PB-15	11/16/2006	16	3	NA
PB-16	11/16/2006	16	5	12
PB-17	11/16/2006	16	7	NA
PB-18	11/16/2006	16	11	15
PB-19	11/16/2006	16	1	NA
PB-20	11/17/2006	16	6	12
PB-21	11/17/2006	16	10	NA
PB-22	11/17/2006	13	8	NA
PB-23	11/17/2006	13.5	10	NA
PB-24	11/17/2006	14.5	12	NA
PB-25	11/17/2006	16	14	14
PB-26*	11/17/2006	14.5	12	14
PB-27	11/17/2006	6.5	NA	NA
PB-28	11/17/2006	16	12	13
PB-29	11/18/2006	16	7	13 - 14
PB-30	11/18/2006	16	15	NA
PB-31	11/18/2006	16	1	NA
PB-32	11/18/2006	16	10	12 - 13
PB-33	11/18/2006	16	1	
PB-34	11/18/2006	16	1	14 - 15
PB-35	11/18/2006	16	4	12 - 13
PB-36	11/18/2006	4	NA	NA
PB-37	11/18/2006	16	NA	13
PB-38	11/18/2006	16	4	9 - 10
PB-39	11/18/2006	16	NA	6 - 7
PB-40	11/18/2006	16	4	5 - 6

* - Waste was encountered at this location.

Table 3-4 Red Room Roof Area Soil VOC Results

Parameter	Sample Number							
	SO-RR6-01		SO-RR7-01		SO-RR8-05		SO-RR9-01	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (µg/Kg)								
1,1,1-Trichloroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,1,2,2-Tetrachloroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,1,2-Trichloroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,1-Dichloroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,1-Dichloroethene	6.1	U	5.9	U	5.9	U	5.8	U
1,2,4-Trichlorobenzene	6.1	U	5.9	U	5.9	U	5.8	U
1,2-Dibromo-3-chloropropane	12	U	12	U	12	U	12	U
1,2-Dibromoethane	6.1	U	5.9	U	5.9	U	5.8	U
1,2-Dichlorobenzene	6.1	U	5.9	U	5.9	U	5.8	U
1,2-Dichloroethane	6.1	U	5.9	U	5.9	U	5.8	U
1,2-Dichloropropane	6.1	U	5.9	U	5.9	U	5.8	U
1,3-Dichlorobenzene	6.1	U	5.9	U	5.9	U	5.8	U
1,4-Dichlorobenzene	6.1	U	5.9	U	5.9	U	5.8	U
2-Butanone	24	U	24	U	24	U	23	U
2-Hexanone	24	U	24	U	24	U	23	U
4-Methyl-2-pentanone	24	U	24	U	24	U	23	U
Acetone	24	U	23	J	56		23	U
Benzene	6.1	U	5.9	U	5.9	U	5.8	U
Bromodichloromethane	6.1	U	5.9	U	5.9	U	5.8	U
Bromoform	6.1	U	5.9	U	5.9	U	5.8	U
Bromomethane	12	U	12	U	12	U	12	U
Carbon disulfide	6.1	U	5.9	U	5.9	U	5.8	U
Carbon tetrachloride	6.1	U	5.9	U	5.9	U	5.8	U
Chlorobenzene	6.1	U	5.9	U	5.9	U	5.8	U
Chloroethane	12	U	12	U	12	U	12	U
Chloroform	6.1	U	5.9	U	5.9	U	5.8	U
Chloromethane	12	U	12	U	12	U	12	U
cis-1,2-Dichloroethene	6.1	U	5.9	U	5.9	U	5.8	U
cis-1,3-Dichloropropene	6.1	U	5.9	U	5.9	U	5.8	U
Cyclohexane	12	U	12	U	12	U	12	U
Dibromochloromethane	6.1	U	5.9	U	5.9	U	5.8	U
Dichlorodifluoromethane	12	U	12	U	12	U	12	U
Ethylbenzene	6.1	U	5.9	U	5.9	U	5.8	U
Isopropylbenzene	6.1	U	5.9	U	5.9	U	5.8	U
Methyl acetate	12	U	12	U	12	U	12	U
Methyl tert-butyl ether	6.1	U	5.9	U	5.9	U	5.8	U
Methylcyclohexane	12	U	12	U	12	U	12	U
Methylene chloride	19	B	20	B	17	B	18	B
Styrene	6.1	U	5.9	U	5.9	U	5.8	U
Tetrachloroethene	6.1	U	5.9	U	5.9	U	5.8	U
Toluene	6.1	U	5.9	U	5.9	U	5.8	U
trans-1,2-Dichloroethene	6.1	U	5.9	U	5.9	U	5.8	U
trans-1,3-Dichloropropene	6.1	U	5.9	U	5.9	U	5.8	U
Trichloroethene	6.1	U	5.9	U	5.9	U	5.8	U
Trichlorofluoromethane	6.1	U	5.9	U	5.9	U	5.8	U
Vinyl chloride	6.1	U	5.9	U	5.9	U	5.8	U
Xylenes (total)	12	U	12	U	12	U	12	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-5 Red Room Roof Area Soil RAD Results

Sample Number (All results in pCi/g)																
Parameter	**SO-RR6-01**				**SO-RR7-01**				**SO-RR8-05**				**SO-RR9-01**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																
Actinium 228	1.61	+/-	0.34		1.1	+/-	0.27		0.86	+/-	0.22		0.99	+/-	0.27	
Bismuth 214	0.65	+/-	0.19		0.81	+/-	0.18		0.82	+/-	0.18		0.73	+/-	0.18	
Cesium 137	0.126	+/-	0.065	J	0.07	+/-	0.07	U	0.075	+/-	0.072	U	0.01	+/-	0.064	U
Lead 210	-0.1	+/-	2.4	U	0.3	+/-	1.2	U	0.3	+/-	1.4	U	0.5	+/-	1.5	U
Lead 212	1.58	+/-	0.27		0.85	+/-	0.16		0.75	+/-	0.16		0.61	+/-	0.13	
Lead 214	0.73	+/-	0.15		0.74	+/-	0.14		0.74	+/-	0.15		0.74	+/-	0.14	
Potassium 40	17.4	+/-	3.2		15.8	+/-	2.8		12.3	+/-	2.4		14.1	+/-	2.6	
Protactinium 234M	35	+/-	13		-0.8	+/-	6.5	U	8.1	+/-	7.4	U	16.6	+/-	8.6	U
Thallium 208	0.49	+/-	0.13		0.338	+/-	0.094		0.301	+/-	0.089		0.303	+/-	0.084	
Thorium 227	0.51	+/-	0.43	U	0.13	+/-	0.28	U	0.04	+/-	0.34	U	0.24	+/-	0.34	U
Thorium 231	9.7	+/-	1.3		0.49	+/-	0.21	U	1.91	+/-	0.37		1.97	+/-	0.35	
Thorium 234	30.2	+/-	4.2		2.49	+/-	0.53		4.19	+/-	0.78		8.6	+/-	1.3	
Uranium 235	9.7	+/-	1.3		0.49	+/-	0.21	U	1.91	+/-	0.37		1.97	+/-	0.35	
Uranium 238	30.2	+/-	4.2		2.49	+/-	0.53		4.19	+/-	0.78		8.6	+/-	1.3	
Alpha Spectroscopy (A-01-R mod)																
Thorium 228	1.81	+/-	0.36		0.71	+/-	0.21	J	0.85	+/-	0.23	J	1.02	+/-	0.25	
Thorium 230	1.31	+/-	0.29		0.83	+/-	0.23	J	1.15	+/-	0.28		1.43	+/-	0.31	
Thorium 232	1.97	+/-	0.38		0.73	+/-	0.21	J	0.96	+/-	0.25	J	0.78	+/-	0.21	J
Uranium 233/234	840	+/-	120		15.1	+/-	1.6		49	+/-	12	J	59.8	+/-	5.8	
Uranium 235/236	19.7	+/-	9.9	J	0.71	+/-	0.21	J	2.1	+/-	2.3	U	2.94	+/-	0.49	
Uranium 238	45	+/-	15	J	3.16	+/-	0.48		10.2	+/-	4.8	J	14.7	+/-	1.6	
Liquid Scintillation (TC-02-RC mod)																
Technetium 99	4.45	+/-	0.66		1.32	+/-	0.43		1.27	+/-	0.43		1.95	+/-	0.46	

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-6 Burial Pit 1 Soil VOC Results

	Sample Number																	
Parameter	**SO-BP1A-12**		**SO-BP1B-09**		**SO-BP1C-09**		**SO-BP1C-09-D**		**SO-BP1D-12**		**SO-BP1E-07**		**SO-BP1E-07-D**		**SO-BP1F-06**	
	Result	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
VOC (µg/Kg)																		
1,1,1-Trichloroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,1,2,2-Tetrachloroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,1,2-Trichloroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,1-Dichloroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,1-Dichloroethene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,2,4-Trichlorobenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,2-Dibromo-3-chloropropane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
1,2-Dibromoethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,2-Dichlorobenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,2-Dichloroethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,2-Dichloropropane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,3-Dichlorobenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
1,4-Dichlorobenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	15		28		6.1	U
2-Butanone	25	U	24	U	25	U	25	U	26	U	26	U	4.7	J	24	U
2-Hexanone	25	U	24	U	25	U	25	U	26	U	26	U	26	U	24	U
4-Methyl-2-pentanone	25	U	24	U	25	U	25	U	26	U	26	U	26	U	24	U
Acetone	37		24	U	9.4	J	25	U	8	J	22	J	26		24	U
Benzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	0.29	J	6.4	U	6.1	U
Bromodichloromethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Bromoform	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Bromomethane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
Carbon disulfide	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Carbon tetrachloride	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Chlorobenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	57		69		6.1	U
Chloroethane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
Chloroform	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Chloromethane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
cis-1,2-Dichloroethene	6.3	U	6	U	15		23		6.4	U	6.4	U	6.4	U	6.1	U
cis-1,3-Dichloropropene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Cyclohexane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
Dibromochloromethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Dichlorodifluoromethane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
Ethylbenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	0.71	J	6.4	U	6.1	U
Isopropylbenzene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Methyl acetate	13	U	12	U	13	U	12	U	13	U	8.5	J	13	U	12	U
Methyl tert-butyl ether	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Methylcyclohexane	13	U	12	U	13	U	12	U	13	U	13	U	13	U	12	U
Methylene chloride	19	B	6	U	6.3	U	6.2	U	6.4	U	11		6.4	U	4.5	J
Styrene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Tetrachloroethene	6.3	U	34		6.3	U	1.1	J	2.6	J	6.4	U	6.4	U	6.1	U
Toluene	6.3	U	6	U	6.3	U	6.2	U	0.49	J	0.56	J B	0.87	J B	6.1	U

Table 3-6 Burial Pit 1 Soil VOC Results

Parameter	Sample Number															
	SO-BP1A-12		SO-BP1B-09		SO-BP1C-09		SO-BP1C-09-D		SO-BP1D-12		SO-BP1E-07		SO-BP1E-07-D		SO-BP1F-06	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)																
trans-1,2-Dichloroethene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
trans-1,3-Dichloropropene	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Trichloroethene	6.3	U	2.5	J	7.9		18		6.4	U	6.4	U	6.4	U	6.1	U
Trichlorofluoromethane	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Vinyl chloride	6.3	U	6	U	6.3	U	6.2	U	6.4	U	6.4	U	6.4	U	6.1	U
Xylenes (total)	13	U	12	U	13	U	12	U	13	U	5.1	J	4	J	12	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-7 Burial Pit 1 Soil RAD Results

	Sample Number (All results in pCi/g)															
Parameter	**SO-BP1A-14**				**SO-BP1B-09**				**SO-BP1C-10**				**SO-BP1C-10-D**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																
Actinium 228	1.33	+/-	0.25		0.83	+/-	0.24		1.2	+/-	0.51		0.84	+/-	0.26	
Bismuth 214	0.79	+/-	0.18		0.77	+/-	0.19		0.92	+/-	0.25		0.91	+/-	0.22	
Cesium 137	0.027	+/-	0.054	U	0.002	+/-	0.058	U	0.001	+/-	0.078	U	0.007	+/-	0.063	U
Lead 210	0.4	+/-	1.2	U	1.4	+/-	1.2	U	1.1	+/-	1.9	U	-0.03	+/-	1.4	U
Lead 212	1.36	+/-	0.22		0.91	+/-	0.17		1.11	+/-	0.22		1	+/-	0.19	
Lead 214	0.93	+/-	0.15		0.96	+/-	0.16		0.87	+/-	0.17		0.9	+/-	0.16	
Potassium 40	14.5	+/-	2.5		20.7	+/-	3.4		18.3	+/-	3.5		18.6	+/-	3.3	
Protactinium 234M	3.2	+/-	6.3	U	-3.3	+/-	7.4	U	1.7	+/-	7.1	U	1.9	+/-	6.5	U
Thallium 208	0.387	+/-	0.095		0.234	+/-	0.072		0.44	+/-	0.13		0.36	+/-	0.1	
Thorium 227	0.1	+/-	0.31	U	0.02	+/-	0.28	U	0.07	+/-	0.35	U	0.44	+/-	0.4	U
Thorium 231	0.82	+/-	0.21		0.23	+/-	0.23	U	0.35	+/-	0.38	U	0.99	+/-	0.3	
Thorium 234	0.44	+/-	0.84	U	0.85	+/-	0.57	U	2	+/-	1.2		1.31	+/-	0.5	U
Uranium 235	0.82	+/-	0.21		0.23	+/-	0.23	U	0.35	+/-	0.38	U	0.99	+/-	0.3	
Uranium 238	0.44	+/-	0.84	U	0.85	+/-	0.57	U	2	+/-	1.2		1.31	+/-	0.5	U
Alpha Spectroscopy (A-01-R mod)																
Thorium 228	1.32	+/-	0.34		1.16	+/-	0.28		1.21	+/-	0.28		1.06	+/-	0.27	
Thorium 230	1.39	+/-	0.35		1.23	+/-	0.29		1.25	+/-	0.29		1.13	+/-	0.28	
Thorium 232	1.12	+/-	0.3		1.18	+/-	0.28		0.89	+/-	0.23	J	1.08	+/-	0.27	
Uranium 233/234	45.7	+/-	5		1.57	+/-	0.34		28.7	+/-	3.2		28.8	+/-	3.2	
Uranium 235/236	2	+/-	0.44		0.03	+/-	0.056	U	1.78	+/-	0.4		1.09	+/-	0.3	
Uranium 238	3.27	+/-	0.56		0.96	+/-	0.26	J	2.11	+/-	0.41		2	+/-	0.39	
Liquid Scintillation (TC-02-RC mod)																
Technetium 99	0.006	+/-	0.15	U	-0.08	+/-	0.42	U	-0.05	+/-	0.49	U	1.63	+/-	0.46	

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-7 Burial Pit 1 Soil RAD Results

	Sample Number (All results in pCi/g)															
Parameter	**SO-BP1D-12**				**SO-BP1E-07**				**SO-BP1E-07-D**				**SO-BP1F-06**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																
Actinium 228	1.13	+/-	0.31		1.06	+/-	0.28		1.21	+/-	0.29		0.97	+/-	0.24	
Bismuth 214	0.81	+/-	0.22		1.06	+/-	0.24		1.09	+/-	0.27		1.28	+/-	0.24	
Cesium 137	0.001	+/-	0.068	U	-0.039	+/-	0.06	U	0.021	+/-	0.057	U	-0.061	+/-	0.065	U
Lead 210	2	+/-	1.5	U	0.008	+/-	1.2	U	1.2	+/-	1.6	U	1.8	+/-	1.5	U
Lead 212	0.96	+/-	0.2		0.89	+/-	0.17		1.04	+/-	0.21		1.08	+/-	0.19	
Lead 214	0.92	+/-	0.17		1.19	+/-	0.19		1.02	+/-	0.19		1.31	+/-	0.2	
Potassium 40	16.6	+/-	3.1		18	+/-	3.1		18.5	+/-	3.4		16	+/-	3	
Protactinium 234M	6.5	+/-	7.7	U	6.7	+/-	7.5	U	2	+/-	8.2	U	-1.8	+/-	8.3	U
Thallium 208	0.51	+/-	0.13		0.279	+/-	0.086		0.39	+/-	0.11		0.316	+/-	0.095	
Thorium 227	0.1	+/-	0.32	U	0.18	+/-	0.31	U	-0.07	+/-	0.35	U	0.2	+/-	0.28	U
Thorium 231	0.13	+/-	0.27	U	0.33	+/-	0.27	U	0.91	+/-	0.3		0.001	+/-	0.24	U
Thorium 234	2.87	+/-	0.65		0.81	+/-	0.89	U	1.61	+/-	0.58		0.97	+/-	0.92	U
Uranium 235	0.13	+/-	0.27	U	0.33	+/-	0.27	U	0.91	+/-	0.3		0.001	+/-	0.24	U
Uranium 238	2.87	+/-	0.65		0.81	+/-	0.89	U	1.61	+/-	0.58		0.97	+/-	0.92	U
Alpha Spectroscopy (A-01-R mod)																
Thorium 228	1.18	+/-	0.34		1.05	+/-	0.25		1.19	+/-	0.27		1.07	+/-	0.26	
Thorium 230	1.07	+/-	0.32		1.19	+/-	0.26		1.19	+/-	0.27		1.12	+/-	0.26	
Thorium 232	0.74	+/-	0.26	J	1.05	+/-	0.24		1.04	+/-	0.25		0.98	+/-	0.24	J
Uranium 233/234	2.22	+/-	0.45		10.9	+/-	1.5		27.5	+/-	3.7		1.79	+/-	0.36	
Uranium 235/236	0.16	+/-	0.11	J	0.35	+/-	0.14	J	1	+/-	0.26		0.136	+/-	0.092	J
Uranium 238	2.55	+/-	0.5		1.56	+/-	0.32		2.34	+/-	0.43		1.21	+/-	0.28	
Liquid Scintillation (TC-02-RC mod)																
Technetium 99	5.42	+/-	0.76		-0.16	+/-	0.37	U	-0.19	+/-	0.4	U	-0.29	+/-	0.37	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-8 Burial Pit 2 Soil VOC Results

Parameter	Sample Number											
	WS-BP2A-11		SO-BP2B-08		SO-BP2C-16		SO-BP2D-13		SO-BP2D-13-D		SO-BP2E-12	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)												
1,1,1-Trichloroethane	6.4	U	6.3	U	6.2	U	2.8	J	2.8	J	1.7	J
1,1,2,2-Tetrachloroethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.4	U	6.3	U	6.2	U	14		7.5		4.9	J
1,1,2-Trichloroethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,1-Dichloroethane	6.4	U	6.3	U	2.8	J	3.1	J	3.3	J	3.1	J
1,1-Dichloroethene	6.4	U	6.3	U	6.2	U	1.5	J	1.3	J	6.4	U
1,2,4-Trichlorobenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,2-Dibromo-3-chloropropane	13	U	13	U	12	U	13	U	13	U	13	U
1,2-Dibromoethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,2-Dichlorobenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,2-Dichloroethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,2-Dichloropropane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,3-Dichlorobenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
1,4-Dichlorobenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
2-Butanone	25	U	25	U	25	U	26	U	25	U	26	U
2-Hexanone	25	U	25	U	25	U	26	U	25	U	26	U
4-Methyl-2-pentanone	25	U	25	U	25	U	26	U	25	U	26	U
Acetone	30		25	U	7.6	J	9.6	J	14	J	6.7	J
Benzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Bromodichloromethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Bromoform	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Bromomethane	13	U	13	U	12	U	13	U	13	U	13	U
Carbon disulfide	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Carbon tetrachloride	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Chlorobenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Chloroethane	13	U	13	U	12	U	13	U	13	U	13	U
Chloroform	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Chloromethane	13	U	13	U	12	U	13	U	13	U	13	U
cis-1,2-Dichloroethene	3.7	J	6.3	U	4	J	51		51		37	
cis-1,3-Dichloropropene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Cyclohexane	13	U	13	U	12	U	13	U	13	U	13	U
Dibromochloromethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Dichlorodifluoromethane	13	U	13	U	12	U	13	U	13	U	13	U
Ethylbenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Isopropylbenzene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Methyl acetate	13	U	13	U	12	U	13	U	13	U	13	U
Methyl tert-butyl ether	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Methylcyclohexane	13	U	13	U	12	U	13	U	13	U	13	U
Methylene chloride	19	B	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Styrene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Tetrachloroethene	54		6.3	U	2.5	J	1200	D	1300	D	1100	D
Toluene	2.4	J B	6.3	U	2.5	J B	6.4	U	6.3	U	6.4	U
trans-1,2-Dichloroethene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U

Table 3-8 Burial Pit 2 Soil VOC Results

Parameter	Sample Number											
	WS-BP2A-11		SO-BP2B-08		SO-BP2C-16		SO-BP2D-13		SO-BP2D-13-D		SO-BP2E-12	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)												
trans-1,3-Dichloropropene	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Trichloroethene	8.4		6.3	U	6.2	U	23		23		22	
Trichlorofluoromethane	6.4	U	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Vinyl chloride	1.7	J	6.3	U	6.2	U	6.4	U	6.3	U	6.4	U
Xylenes (total)	13	U	13	U	12	U	13	U	13	U	13	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-9 Burial Pit 2 Soil RAD Results

	Sample Number (All results in pCi/g)																							
Parameter	**WS-BP2A-11**				**SO-BP2B-12**				**SO-BP2C-12**				**SO-BP2D-05**				**SO-BP2D-05-D**				**SO-BP2E-07**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																								
Actinium 228	0.95	+/-	0.32		1.11	+/-	0.29		1.29	+/-	0.33		0.87	+/-	0.24		1	+/-	0.24		1.32	+/-	0.27	
Bismuth 212																	0.88	+/-	0.4		0.84	+/-	0.44	U
Bismuth 214	0.92	+/-	0.22		0.86	+/-	0.21		0.94	+/-	0.22		0.82	+/-	0.22		1.12	+/-	0.22		1.04	+/-	0.23	
Cesium 137	-0.125	+/-	0.075	U	0.022	+/-	0.061	U	-0.068	+/-	0.063	U	0.023	+/-	0.064	U	-0.03	+/-	0.059	U	-0.016	+/-	0.06	U
Lead 210	-0.6	+/-	2	U	1	+/-	1.2	U	2.1	+/-	1.4	U	1.3	+/-	1.5	U	0.6	+/-	1.2	U	0.8	+/-	1.3	U
Lead 212	0.73	+/-	0.16		1.02	+/-	0.18		1.07	+/-	0.2		1.08	+/-	0.2		1.18	+/-	0.2		1.1	+/-	0.2	
Lead 214	0.79	+/-	0.16		0.96	+/-	0.17		0.84	+/-	0.16		1.09	+/-	0.18		1.01	+/-	0.17		0.96	+/-	0.17	
Potassium 40	14.6	+/-	2.8		18.5	+/-	3.2		19.6	+/-	3.4		16.5	+/-	3		20.1	+/-	3.4		16.5	+/-	3	
Protactinium 234M	43	+/-	13		6.2	+/-	6.9	U	-4	+/-	6.9	U	5.7	+/-	6.9	U	3.8	+/-	7.6	U	7.1	+/-	6.6	U
Thallium 208	0.273	+/-	0.091		0.253	+/-	0.084		0.38	+/-	0.1		0.282	+/-	0.091		0.355	+/-	0.095		0.345	+/-	0.098	
Thorium 227	0.1	+/-	0.41	U	-0.04	+/-	0.33	U	0.15	+/-	0.32	U	0.34	+/-	0.37	U	0.05	+/-	0.33	U	0.25	+/-	0.36	U
Thorium 231	6.98	+/-	0.95		0.24	+/-	0.24	U	0.14	+/-	0.27	U	-0.02	+/-	0.27	U	0.03	+/-	0.25	U	0.19	+/-	0.26	U
Thorium 234	26.8	+/-	3.8		1.36	+/-	0.67		1.3	+/-	1	U	1.1	+/-	1	U	1.1	+/-	0.9	U	-0.12	+/-	0.91	U
Uranium 235	6.98	+/-	0.95		0.24	+/-	0.24	U	0.14	+/-	0.27	U	-0.02	+/-	0.27	U	0.03	+/-	0.25	U	0.19	+/-	0.26	U
Uranium 238	26.8	+/-	3.8		1.36	+/-	0.67		1.3	+/-	1	U	1.1	+/-	1	U	1.1	+/-	0.9	U	-0.12	+/-	0.91	U
Alpha Spectroscopy (A-01-R mod)																								
Thorium 228	0.91	+/-	0.28	J	1.08	+/-	0.25		1.03	+/-	0.26		1.11	+/-	0.26		1.15	+/-	0.27		0.8	+/-	0.21	J
Thorium 230	1.48	+/-	0.38		1.14	+/-	0.26		1.37	+/-	0.31		1.13	+/-	0.26		1.27	+/-	0.29		1.25	+/-	0.28	
Thorium 232	0.9	+/-	0.28	J	0.98	+/-	0.23	J	1.12	+/-	0.27		0.94	+/-	0.23	J	1.1	+/-	0.26		0.99	+/-	0.24	J
Uranium 233/234	161	+/-	27		1.18	+/-	0.28		0.96	+/-	0.24	J	1.05	+/-	0.27		1.16	+/-	0.27		0.83	+/-	0.22	J
Uranium 235/236	9.3	+/-	4.7	J	0.022	+/-	0.043	U	0.009	+/-	0.032	U	0.015	+/-	0.044	U	0.047	+/-	0.055	U	0.014	+/-	0.041	U
Uranium 238	36.8	+/-	9.9	J	1.11	+/-	0.27		1.08	+/-	0.26		0.98	+/-	0.26	J	0.96	+/-	0.24	J	1	+/-	0.25	
Liquid Scintillation (TC-02-RC mod)																								
Technetium 99	4.11	+/-	0.63		-0.009	+/-	0	U	-0.22	+/-	0.41	U	0.06	+/-	0.34	U	0.2	+/-	0.38	U	0.27	+/-	0.38	U

- Analyte was not analyzed in the sample.
U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-10 Burial Pit 2 Leachate VOC results

Sample Number				
Parameter	**GW-BP2-XX**		**GW-BP2-XX-D**	
	Result	**Qual**	**Result**	**Qual**
VOC (µg/L)				
1,1,1-Trichloroethane	0.21	J	1	U
1,1,2,2-Tetrachloroethane	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	1.2		1.4	
1,1,2-Trichloroethane	1	U	1	U
1,1-Dichloroethane	0.9	J	0.89	J
1,1-Dichloroethene	1	U	1	U
1,2,4-Trichlorobenzene	1	U	1	U
1,2-Dibromo-3-chloropropane	1	U	1	U
1,2-Dibromoethane	1	U	1	U
1,2-Dichlorobenzene	1	U	1	U
1,2-Dichloroethane	1	U	1	U
1,2-Dichloropropane	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U
2-Butanone	5	U	5	U
2-Hexanone	5	U	5	U
4-Methyl-2-pentanone	5	U	5	U
Acetone	1.5	J	2	U
Benzene	1	U	1	U
Bromodichloromethane	1	U	1	U
Bromoform	1	U	1	U
Bromomethane	2	U	2	U
Carbon disulfide	1	U	1	U
Carbon tetrachloride	1	U	1	U
Chlorobenzene	1	U	1	U
Chloroethane	2	U	2	U
Chloroform	1	U	1	U
Chloromethane	2	U	2	U
cis-1,2-Dichloroethene	36		35	
cis-1,3-Dichloropropene	1	U	1	U
Cyclohexane	1	U	1	U
Dibromochloromethane	1	U	1	U
Dichlorodifluoromethane	2	U	2	U
Ethylbenzene	1	U	1	U
Isopropylbenzene	1	U	1	U
Methyl acetate	5	U	5	U
Methyl tert-butyl ether	2	U	2	U
Methylcyclohexane	4	U	4	U
Methylene chloride	1	U	1	U
Styrene	1	U	1	U
Tetrachloroethene	130	D	150	D
Toluene	0.32	J	1	U
trans-1,2-Dichloroethene	0.38	J	0.41	J
trans-1,3-Dichloropropene	1	U	1	U
Trichloroethene	9.3		7.2	
Trichlorofluoromethane	1	U	1	U
Vinyl chloride	4.9		3.8	
Xylenes (total)	3	U	3	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-11 Burial Pit 2 Leachate RAD Results

Sample Number (All results in pCi/L)								
Parameter	**GW-BP2-XX**				**GW-BP2-XX-D**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)								
Actinium 228	47	+/-	37	U	36	+/-	31	U
Bismuth 214	10	+/-	16	U	26	+/-	22	U
Cesium 137	1.7	+/-	7.2	U	5.4	+/-	8	U
Lead 210	70	+/-	130	U	-20	+/-	140	U
Lead 212	4	+/-	13	U	4	+/-	13	U
Lead 214	21	+/-	17	U	10	+/-	19	U
Protactinium 234M	-280	+/-	930	U	-300	+/-	900	U
Thallium 208	8.2	+/-	8.8	U	-3.9	+/-	8.9	U
Thorium 227	6	+/-	45	U	-47	+/-	43	U
Thorium 231	6	+/-	40	U	2	+/-	34	U
Thorium 234	16	+/-	99	U	70	+/-	100	U
Uranium 235	6	+/-	40	U	2	+/-	34	U
Uranium 238	16	+/-	99	U	70	+/-	100	U
Alpha Spectroscopy (A-01-R mod)								
Thorium 228	0.27	+/-	0.16	J	0.18	+/-	0.15	J
Thorium 230	0.54	+/-	0.22	J	0.44	+/-	0.2	J
Thorium 232	0.032	+/-	0.06	U	0.09	+/-	0.096	U
Uranium 233/234	404	+/-	57		137	+/-	18	
Uranium 235/236	19.5	+/-	3.2		6	+/-	1.1	
Uranium 238	99	+/-	14		32.8	+/-	4.6	
Liquid Scintillation (TC-02-RC mod)								
Technetium 99	604	+/-	62		494	+/-	51	

U - The analyte was not detected in the sample. The number presented represents the detection limit.

J - The result is estimated by the laboratory.

Table 3-12 Burial Pit 2 Leachate Metals and Wet Chem Results

Sample Number				
Parameter	**GW-BP2-XX**		**GW-BP2-XX-D**	
	Result	**Qual**	**Result**	**Qual**
Total Metals (µg/L)				
Aluminum	41100	N	38800	N
Antimony	3.6	BN	10	U
Arsenic	20.5		17.7	
Barium	579		559	
Beryllium	1.9	B	1.6	B
Cadmium	1.4	B	1	B
Calcium	34100		33900	
Chromium	56.7		54.4	
Cobalt	21.9	B	20.3	B
Copper	50.7		47.9	
Iron	104000	N	99700	N
Lead	71.6		68.1	
Magnesium	18200		17900	
Manganese	4730	N	4690	N
Mercury	0.16	B	0.16	B
Nickel	68.4		64.3	
Potassium	6710		7330	
Selenium	4.5	B	15	U
Silver	10	U	10	U
Sodium	13300		13600	
Thallium	8	B	3.4	B
Vanadium	89.7		84.8	
Zinc	794		753	
Wet Chemistry				
pH (S.U)	6.6		6	
Total Disolved Solids (mg/L)	249		242	
Hardness (µg/L)	160000		158000	
Total Organic Carbon (mg/L)	1	U	1	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
N - The matrix spike recovery was not within acceptance criteria.

Table 3-13 Burial Pit 4 Soil VOC Results

Parameter	Sample Number											
	SO-BP4A-04		SO-BP4B-08		SO-BP4C-10		SO-BP4D-08		SO-BP4E-09		SO-BP4F-08	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)												
1,1,1-Trichloroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2,2-Tetrachloroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2-Trichloroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1-Dichloroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1-Dichloroethene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2,4-Trichlorobenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dibromo-3-chloropropane	12	U	12	U	12	U	12	U	12	U	12	U
1,2-Dibromoethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichlorobenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichloroethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichloropropane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,3-Dichlorobenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
1,4-Dichlorobenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
2-Butanone	25	U	24	U	25	U	24	U	24	U	25	U
2-Hexanone	25	U	24	U	25	U	24	U	24	U	25	U
4-Methyl-2-pentanone	25	U	24	U	25	U	24	U	24	U	25	U
Acetone	11	J	19	J	25	U	24	U	24	U	25	U
Benzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromodichloromethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromoform	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromomethane	12	U	12	U	12	U	12	U	12	U	12	U
Carbon disulfide	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Carbon tetrachloride	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Chlorobenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Chloroethane	12	U	12	U	12	U	12	U	12	U	12	U
Chloroform	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Chloromethane	12	U	12	U	12	U	12	U	12	U	12	U
cis-1,2-Dichloroethene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
cis-1,3-Dichloropropene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Cyclohexane	12	U	12	U	12	U	12	U	12	U	12	U
Dibromochloromethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Dichlorodifluoromethane	12	U	12	U	12	U	12	U	12	U	12	U
Ethylbenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	3.4	J
Isopropylbenzene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Methyl acetate	12	U	12	U	12	U	12	U	12	U	12	U
Methyl tert-butyl ether	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Methylcyclohexane	12	U	12	U	12	U	12	U	12	U	12	U
Methylene chloride	6.2	U	4.3	J	6.2	U	6.1	U	6.1	U	6.2	U
Styrene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Tetrachloroethene	1.9	J	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Toluene	0.44	J	0.54	J B	6.2	U	6.1	U	2	J B	100	B
trans-1,2-Dichloroethene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U

Table 3-13 Burial Pit 4 Soil VOC Results

Parameter	Sample Number											
	SO-BP4A-04		SO-BP4B-08		SO-BP4C-10		SO-BP4D-08		SO-BP4E-09		SO-BP4F-08	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)												
trans-1,3-Dichloropropene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Trichloroethene	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Trichlorofluoromethane	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Vinyl chloride	6.2	U	6.1	U	6.2	U	6.1	U	6.1	U	6.2	U
Xylenes (total)	12	U	12	U	12	U	12	U	12	U	11	J

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-14 Burial Pit 4 Soil RAD Results

Parameter	Sample Number (All results in pCi/g)																							
	SO-BP4A-04				SO-BP4B-08				SO-BP4C-10				SO-BP4D-08				SO-BP4E-09				SO-BP4F-08			
	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual
Gamma Scan (901.1 mod)																								
Actinium 228	0.85	+/-	0.2		1.01	+/-	0.26		1.21	+/-	0.28		1.23	+/-	0.27		1.11	+/-	0.25		1.12	+/-	0.5	
Bismuth 212	0.48	+/-	0.34	U																				
Bismuth 214	0.74	+/-	0.16		0.97	+/-	0.22		1.3	+/-	0.26		1.1	+/-	0.22		1.14	+/-	0.23		1.01	+/-	0.26	
Cesium 137	0.043	+/-	0.051	U	-0.068	+/-	0.078	U	-0.01	+/-	0.063	U	0.009	+/-	0.071	U	0.028	+/-	0.064	U	-0.026	+/-	0.08	U
Lead 210	0.9	+/-	1.1	U	0.7	+/-	1.3	U	2.4	+/-	1.4	U	1.1	+/-	1.2	U	0.9	+/-	1.2	U	1.4	+/-	2.4	U
Lead 212	0.85	+/-	0.15		1.05	+/-	0.19		0.85	+/-	0.18		1.09	+/-	0.19		1.07	+/-	0.19		1.1	+/-	0.21	
Lead 214	0.79	+/-	0.14		1.27	+/-	0.2		1.13	+/-	0.19		1.25	+/-	0.19		1.31	+/-	0.19		1.34	+/-	0.23	
Potassium 40	15.4	+/-	2.6		17	+/-	3		15.8	+/-	3		15.6	+/-	2.8		18.5	+/-	3.1		18.7	+/-	3.5	
Protactinium 234M	0.05	+/-	4.4	U	4.6	+/-	7.7	U	-7.5	+/-	6.4	U	1.8	+/-	6.8	U	2.6	+/-	6.3	U	2.3	+/-	8.1	U
Thallium 208	0.317	+/-	0.086		0.344	+/-	0.093		0.38	+/-	0.1		0.326	+/-	0.09		0.321	+/-	0.092		0.37	+/-	0.11	
Thorium 227	0.19	+/-	0.24	U	-0.09	+/-	0.32	U	-0.44	+/-	0.42	U	0.09	+/-	0.29	U	-0.08	+/-	0.31	U	0.01	+/-	0.47	U
Thorium 231	0.08	+/-	0.21	U	0.33	+/-	0.27	U	-0.09	+/-	0.29	U	0.33	+/-	0.24	U	0.54	+/-	0.2		11.4	+/-	1.5	
Thorium 234	1.02	+/-	0.32		2.95	+/-	0.6		-0.043	+/-	0.997	U	1.51	+/-	0.91		1.44	+/-	0.93		3.5	+/-	1.8	
Uranium 235	0.08	+/-	0.21	U	0.33	+/-	0.27	U	-0.09	+/-	0.29	U	0.33	+/-	0.24	U	0.54	+/-	0.2		11.4	+/-	1.5	
Uranium 238	1.02	+/-	0.32		2.95	+/-	0.6		-0.043	+/-	0.997	U	1.51	+/-	0.91		1.44	+/-	0.93		3.5	+/-	1.8	
Alpha Spectroscopy (A-01-R mod)																								
Thorium 228	0.93	+/-	0.23	J	1.23	+/-	0.29		1.13	+/-	0.26		1.29	+/-	0.3		1.05	+/-	0.25		0.84	+/-	0.21	J
Thorium 230	1.18	+/-	0.27		1.31	+/-	0.29		1.31	+/-	0.29		1.36	+/-	0.31		1.38	+/-	0.29		1.6	+/-	0.31	
Thorium 232	1.05	+/-	0.25		1.04	+/-	0.25		1.06	+/-	0.25		1.07	+/-	0.27		1.05	+/-	0.25		1.08	+/-	0.24	
Uranium 233/234	4.24	+/-	0.71		9.9	+/-	1.4		0.92	+/-	0.23	J	1.23	+/-	0.28		10.6	+/-	1.5		226	+/-	29	
Uranium 235/236	0.21	+/-	0.11	J	0.46	+/-	0.16	J	0.064	+/-	0.061	J	0.024	+/-	0.039	U	0.51	+/-	0.17	J	8.8	+/-	1.3	
Uranium 238	1.42	+/-	0.32		3.04	+/-	0.51		0.97	+/-	0.24	J	0.94	+/-	0.23	J	1.21	+/-	0.26		2.46	+/-	0.45	
Liquid Scintillation (TC-02-RC mod)																								
Technetium 99	0.52	+/-	0.41	U	0.82	+/-	0.42	J	-0.19	+/-	0.35	U	-0.19	+/-	0.38	U	0.81	+/-	0.39	J	0.86	+/-	0.41	J

- Analyte was not analyzed in the sample.

U - The analyte was not detected in the sample. The number presented represents the detection limt.

J - The result is estimated by the laboratory.

Table 3-15 Burial Pit 5 Soil VOC Results

	Sample Number									
Parameter	**SO-BP5A-12**		**SO-BP5B-10**		**SO-BP5C-08**		**SO-BP5D-08**		**SO-BP5E-10**	
	Result	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
VOC (µg/Kg)										
1,1,1-Trichloroethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2,2-Tetrachloroethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1,2-Trichloroethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,1-Dichloroethane	6.4	U	3.3	J	2.7	J	3.1	J	6.2	U
1,1-Dichloroethene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2,4-Trichlorobenzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dibromo-3-chloropropane	13	U	12	U	12	U	12	U	12	U
1,2-Dibromoethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichlorobenzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichloroethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,2-Dichloropropane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,3-Dichlorobenzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
1,4-Dichlorobenzene	6.4		6.2	U	6.1	U	6.1	U	6.2	U
2-Butanone	26	U	25	U	24	U	24	U	25	U
2-Hexanone	26	U	25	U	24	U	24	U	25	U
4-Methyl-2-pentanone	26	U	25	U	24	U	24	U	25	U
Acetone	40		14	J	23	J	13	J	20	J
Benzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromodichloromethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromoform	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Bromomethane	13	U	12	U	12	U	12	U	12	U
Carbon disulfide	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Carbon tetrachloride	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Chlorobenzene	19		6.2	U	6.1	U	6.1	U	6.2	U
Chloroethane	13	U	12	U	12	U	12	U	12	U
Chloroform	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Chloromethane	13	U	12	U	12	U	12	U	12	U
cis-1,2-Dichloroethene	6.4	U	6.2	U	6.1	U	2.6	J	1.4	J
cis-1,3-Dichloropropene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Cyclohexane	13	U	12	U	12	U	12	U	12	U
Dibromochloromethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Dichlorodifluoromethane	13	U	12	U	12	U	12	U	12	U
Ethylbenzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Isopropylbenzene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Methyl acetate	13	U	12	U	12	U	12	U	12	U
Methyl tert-butyl ether	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Methylcyclohexane	13	U	12	U	12	U	12	U	12	U
Methylene chloride	6.4	U	6.2	U	4.2	J	19		7.2	
Styrene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Tetrachloroethene	3.1	J	6.2	U	4.3	J	36		1	J
Toluene	0.79	J	0.66	J B	0.42	J B	6.1	U	0.46	J B
trans-1,2-Dichloroethene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U

Table 3-15 Burial Pit 5 Soil VOC Results

Parameter	Sample Number									
	SO-BP5A-12		SO-BP5B-10		SO-BP5C-08		SO-BP5D-08		SO-BP5E-10	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (µg/Kg)										
trans-1,3-Dichloropropene	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Trichloroethene	6.4	U	6.2	U	6.1	U	3.7	J	6.2	U
Trichlorofluoromethane	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Vinyl chloride	6.4	U	6.2	U	6.1	U	6.1	U	6.2	U
Xylenes (total)	13	U	12	U	12	U	12	U	12	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-16 Burial Pit 5 Soil RAD Results

Sample Number (All results in pCi/g)																				
Parameter	**WS-BP5A-07**				**SO-BP5B-10**				**SO-BP5C-08**				**SO-BP5D-08**				**SO-BP5E-10**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																				
Actinium 228	1.39	+/-	0.32		0.94	+/-	0.31		1.08	+/-	0.28		1	+/-	0.31		1.47	+/-	0.3	
Bismuth 214	0.97	+/-	0.24		1.08	+/-	0.24		1.01	+/-	0.22		1.19	+/-	0.29		1.04	+/-	0.22	
Cesium 137	-0.027	+/-	0.062	U	-0.0004	+/-	0.064	U	0.024	+/-	0.059	U	-0.048	+/-	0.079	U	0.013	+/-	0.06	U
Lead 210	0.9	+/-	1.7	U	1.7	+/-	1.5	U	1.7	+/-	1.3	U	1.7	+/-	1.8	U	2.4	+/-	1.5	U
Lead 212	1.09	+/-	0.21		0.9	+/-	0.19		0.8	+/-	0.16		1.11	+/-	0.22		1.29	+/-	0.22	
Lead 214	0.78	+/-	0.16		1.03	+/-	0.19		0.97	+/-	0.17		1.31	+/-	0.23		1.33	+/-	0.2	
Potassium 40	18.8	+/-	3.4		15.9	+/-	3		14.3	+/-	2.7		17.9	+/-	3.5		18	+/-	3.1	
Protactinium 234M	3.8	+/-	7.6	U	5.3	+/-	8.4	U	1.7	+/-	7.1	U	4	+/-	10	U	2.7	+/-	8.1	U
Thallium 208	0.32	+/-	0.1		0.41	+/-	0.11		0.201	+/-	0.075		0.32	+/-	0.11		0.5	+/-	0.12	
Thorium 227	0.06	+/-	0.36	U	0.14	+/-	0.36	U	0.38	+/-	0.35	U	0.28	+/-	0.31	U	0.06	+/-	0.34	U
Thorium 231	2.25	+/-	0.41		0.03	+/-	0.28	U	0.25	+/-	0.25	U	0.39	+/-	0.33	U	0.26	+/-	0.26	U
Thorium 234	1	+/-	1.2	U	0.6	+/-	1	U	0.22	+/-	0.95	U	1.1	+/-	1.2	U	2.3	+/-	1	
Uranium 235	2.25	+/-	0.41		0.03	+/-	0.28	U	0.25	+/-	0.25	U	0.39	+/-	0.33	U	0.26	+/-	0.26	U
Uranium 238	1	+/-	1.2	U	0.6	+/-	1	U	0.22	+/-	0.95	U	1.1	+/-	1.2	U	2.3	+/-	1	
Alpha Spectroscopy (A-01-R mod)																				
Thorium 228	1.06	+/-	0.26		1.2	+/-	0.27		0.83	+/-	0.22	J	0.98	+/-	0.25	J	1.08	+/-	0.28	
Thorium 230	1.17	+/-	0.27		1.43	+/-	0.3		1.06	+/-	0.25		1.14	+/-	0.27		1.13	+/-	0.28	
Thorium 232	0.84	+/-	0.22	J	1.01	+/-	0.24		0.71	+/-	0.19	J	1.1	+/-	0.26		0.97	+/-	0.26	J
Uranium 233/234	59.3	+/-	8		1.6	+/-	0.33		2.84	+/-	0.5		0.94	+/-	0.24	J	5.42	+/-	0.85	
Uranium 235/236	2.5	+/-	0.51		0.047	+/-	0.054	U	0.11	+/-	0.079	J	0.024	+/-	0.039	U	0.32	+/-	0.14	J
Uranium 238	1.74	+/-	0.37		1.18	+/-	0.27		1.07	+/-	0.25		0.87	+/-	0.22	J	1.54	+/-	0.32	
Liquid Scintillation (TC-02-RC mod)																				
Technetium 99	0.1	+/-	0.35	U	0.18	+/-	0.37	U	-0.15	+/-	0.4	U	-0.001	+/-	0.18	U	-0.13	+/-	0.37	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-17 Burial Pit 5 Leachate VOC Results

Sample Number		
Parameter	**GW-BP5A-XX**	
	Result	**Qual**
VOC (µg/L)		
1,1,1-Trichloroethane	1	U
1,1,2,2-Tetrachloroethane	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U
1,1,2-Trichloroethane	1	U
1,1-Dichloroethane	0.5	J
1,1-Dichloroethene	0.38	J
1,2,4-Trichlorobenzene	1	U
1,2-Dibromo-3-chloropropane	1	U
1,2-Dibromoethane	1	U
1,2-Dichlorobenzene	1	U
1,2-Dichloroethane	1	U
1,2-Dichloropropane	1	U
1,3-Dichlorobenzene	1	U
1,4-Dichlorobenzene	4.7	
2-Butanone	6.6	
2-Hexanone	5	U
4-Methyl-2-pentanone	5	U
Acetone	16	
Benzene	0.27	J
Bromodichloromethane	0.23	J
Bromoform	1	U
Bromomethane	2	U
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	42	
Chloroethane	2	U
Chloroform	0.87	J
Chloromethane	2	U
cis-1,2-Dichloroethene	8.3	
cis-1,3-Dichloropropene	1	U
Cyclohexane	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	2	U
Ethylbenzene	0.33	J
Isopropylbenzene	1	U
Methyl acetate	5	U
Methyl tert-butyl ether	2	U
Methylcyclohexane	4	U
Methylene chloride	0.88	J
Styrene	1	U
Tetrachloroethene	4.8	B
Toluene	1	
trans-1,2-Dichloroethene	0.35	J
trans-1,3-Dichloropropene	1	U
Trichloroethene	11	
Trichlorofluoromethane	1	U
Vinyl chloride	5.3	
Xylenes (total)	1	J

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.

Table 3-18 Burial Pit 5 Leachate RAD Results

Sample Number (All results in pCi/L)				
Parameter	**GW-BP5A-XX**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	6	+/-	25	U
Bismuth 214	14	+/-	12	U
Cesium 137	-3.6	+/-	7.6	U
Lead 210	39.5	+/-	99.7	U
Lead 212	-0.3	+/-	9.9	U
Lead 214	19	+/-	11	
Protactinium 234M	870	+/-	880	U
Thallium 208	7.8	+/-	5.4	U
Thorium 227	-34	+/-	33	U
Thorium 231	3	+/-	27	U
Thorium 234	-24	+/-	69	U
Uranium 235	3	+/-	27	U
Uranium 238	-24	+/-	69	U
Alpha Spectroscopy (A-01-R mod)				
Thorium 228	0.38	+/-	0.19	J
Thorium 230	0.71	+/-	0.25	J
Thorium 232	0.19	+/-	0.13	J
Uranium 233/234	24.3	+/-	3.4	
Uranium 235/236	1.03	+/-	0.34	
Uranium 238	1.44	+/-	0.4	
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	-2.6	+/-	1.7	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-19 Burial Pit 5 Leachate Metals and Wet Chem Results

Sample Number		
Parameter	**GW-BP5A-XX**	
	Result	**Qual**
Total Metals (μg/L)		
Aluminum	19100	N
Antimony	10	U
Arsenic	5.4	B
Barium	238	
Beryllium	1	B
Cadmium	1.2	B
Calcium	40400	
Chromium	28.4	
Cobalt	10.9	B
Copper	18.5	B
Iron	17800	N
Lead	19.7	
Magnesium	21200	
Manganese	2530	N
Mercury	0.11	B
Nickel	18.5	B
Potassium	6230	
Selenium	15	U
Silver	10	U
Sodium	96100	
Thallium	20	U
Vanadium	45	B
Zinc	83.9	
Wet Chemistry		
pH (S.U)	6.7	
Total Disolved Solids (mg/L)	450	
Hardness (μg/L)	188000	
Total Organic Carbon (mg/L)	1	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
N - The matrix spike recovery was not within acceptance criteria.

Table 3-20 Burial Pit 6 Soil VOC Results

	Sample Number															
Parameter	**SO-BP6A-06**		**SO-BP6B-09**		**SO-BP6B-09-M**		**SO-BP6C-12**		**SO-BP6D-12**		**SO-BP6E-14**		**SO-BP6F-09**		**SO-BP6G-10**	
	Result	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
VOC (µg/Kg)																
1,1,1-Trichloroethane	6.6	U	0.76	J	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,1,2,2-Tetrachloroethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,1,2-Trichloroethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,1-Dichloroethane	6.6	U	6	U	6	U	4.7	J	32		6.4	U	1.8	J	6.2	U
1,1-Dichloroethene	6.6	U	6	U	6	U	6.1	U	2.7	J	6.4	U	6.3	U	6.2	U
1,2,4-Trichlorobenzene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,2-Dibromo-3-chloropropane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
1,2-Dibromoethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,2-Dichlorobenzene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,2-Dichloroethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,2-Dichloropropane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,3-Dichlorobenzene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
1,4-Dichlorobenzene	6.6	U	6	U	6	U	6.1	U	5	J	6.4	U	6.3	U	1.8	J
2-Butanone	26	U	24	U	24	U	24	U	22	J	25		25	U	25	U
2-Hexanone	26	U	24	U	24	U	24	U	25	U	25	U	25	U	25	U
4-Methyl-2-pentanone	26	U	24	U	24	U	24	U	25	U	25	U	25	U	25	U
Acetone	26	U	24	U	24	U	44		78		130		85		23	J
Benzene	6.6	U	6	U	6	U	6.1	U	0.88	J	2.1	J	6.3	U	6.2	U
Bromodichloromethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Bromoform	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Bromomethane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
Carbon disulfide	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	1.7	J	6.2	U
Carbon tetrachloride	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Chlorobenzene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Chloroethane	13	U	12	U	12	U	3.1	J	14		6.2	J	13	U	12	U
Chloroform	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Chloromethane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
cis-1,2-Dichloroethene	6.6	U	2.5	J	6	U	33		680		6.4	U	6.3	U	36	
cis-1,3-Dichloropropene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Cyclohexane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
Dibromochloromethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Dichlorodifluoromethane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
Ethylbenzene	6.6	U	6	U	6	U	6.1	U	2	J	14		6.3	U	6.2	U
Isopropylbenzene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Methyl acetate	7.6	J	12	U	12	U	12	U	13	U	13	U	13	U	12	U
Methyl tert-butyl ether	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Methylcyclohexane	13	U	12	U	12	U	12	U	13	U	13	U	13	U	12	U
Methylene chloride	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Styrene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Tetrachloroethene	31		170		32		1.5	J	600		6.4	U	1.1	J	70	
Toluene	0.65	J B	6	U	6	U	6.1	U	4.4	J B	11	B	6.3	U	6.2	U

Table 3-20 Burial Pit 6 Soil VOC Results

Parameter	Sample Number															
	SO-BP6A-06		SO-BP6B-09		SO-BP6B-09-M		SO-BP6C-12		SO-BP6D-12		SO-BP6E-14		SO-BP6F-09		SO-BP6G-10	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)																
trans-1,2-Dichloroethene	6.6	U	6	U	6	U	6.1	U	2.6	J	6.4	U	6.3	U	6.2	U
trans-1,3-Dichloropropene	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Trichloroethene	6.6	U	20		3.4	J	6.1	U	110		6.4	U	6.3	U	9	
Trichlorofluoromethane	6.6	U	6	U	6	U	6.1	U	6.3	U	6.4	U	6.3	U	6.2	U
Vinyl chloride	6.6	U	6	U	6	U	2.3	J	56		6.4	U	6.3	U	6.2	U
Xylenes (total)	13	U	12	U	12	U	2.4	J	8.2	J	48		13	U	12	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-21 Burial Pit 6 Soil RAD Results

	Sample Number (All results in pCi/g)															
Parameter	**SO-BP6A-06**				**SO-BP6B-09**				**SO-BP6C-12**				**SO-BP6D-12**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)																
Actinium 228	0.99	+/-	0.26		1.24	+/-	0.49		3.3	+/-	2.4	U	1.2	+/-	0.3	
Bismuth 214	1.56	+/-	0.28		1.01	+/-	0.24		412	+/-	45		13.5	+/-	1.6	
Cesium 137	0.162	+/-	0.063	J	-0.031	+/-	0.067	U	-0.08	+/-	0.6	U	-0.05	+/-	0.11	U
Lead 210	1.6	+/-	1.6	U	1.4	+/-	1.5	U	230	+/-	31		8.4	+/-	2.3	
Lead 212	0.96	+/-	0.19		0.95	+/-	0.18		2.51	+/-	0.61		1.04	+/-	0.2	
Lead 214	1.59	+/-	0.24		1.09	+/-	0.18		414	+/-	44		13.1	+/-	1.5	
Potassium 40	16.4	+/-	3		16.1	+/-	3		23.9	+/-	5.1		16.1	+/-	2.9	
Protactinium 234M	14.4	+/-	8.8	U	2	+/-	8.3	U	-13	+/-	68	U	71	+/-	17	
Thallium 208	0.315	+/-	0.092		0.296	+/-	0.096		0.43	+/-	0.63	U	0.38	+/-	0.11	
Thorium 227	-0.05	+/-	0.35	U	0.001	+/-	0.33	U	-1.3	+/-	3.5	U	-0.23	+/-	0.61	U
Thorium 231	1.75	+/-	0.36		0.2	+/-	0.29	U	-1.3	+/-	3	U	16.4	+/-	2	
Thorium 234	6.5	+/-	1.1		1.13	+/-	0.96	U	8.1	+/-	9.2	U	48	+/-	6.4	
Uranium 235	1.75	+/-	0.36		0.2	+/-	0.29	U	-1.3	+/-	3	U	16.4	+/-	2	
Uranium 238	6.5	+/-	1.1		1.13	+/-	0.96	U	8.1	+/-	9.2	U	48	+/-	6.4	
Alpha Spectroscopy (A-01-R)																
Plutonium 238	-0.04	+/-	0.11	U					0.011	+/-	0.043	U	0.036	+/-	0.061	U
Plutonium 239/40	0.009	+/-	0.061	U					-0.007	+/-	0.026	U	0.007	+/-	0.035	U
Alpha Spectroscopy (A-01-R mod)																
Americium 241	-0.014	+/-	0.04	U					0.033	+/-	0.062	U	-0.006	+/-	0.04	U
Thorium 228	0.055	+/-	0.051	U	0.95	+/-	0.23	J	0.017	+/-	0.042	U	0.165	+/-	0.088	J
Thorium 230	0.89	+/-	0.23	J	1.19	+/-	0.27		3.65	+/-	0.65		0.85	+/-	0.22	J
Thorium 232	1.17	+/-	0.27		1.08	+/-	0.25		49	+/-	6.8		1.4	+/-	0.3	
Neptunium 237	1.04	+/-	0.25						6.22	+/-	0.999		0.99	+/-	0.24	J
Uranium 233/234	101	+/-	14		2.5	+/-	0.46		6.23	+/-	0.91		503	+/-	71	
Uranium 235/236	6.3	+/-	1.1		0.16	+/-	0.1	J	0.36	+/-	0.13	J	26.3	+/-	8.3	J
Uranium 238	19.8	+/-	3		1.03	+/-	0.25		4.84	+/-	0.73		102	+/-	19	
Liquid Scintillation (TC-02-RC mod)																
Technetium 99	0.07	+/-	0.31	U	0.09	+/-	0.35	U	-0.12	+/-	0.32	U	-0.03	+/-	0.3	U

- Analyte was not analyzed in the sample.
U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-21 Burial Pit 6 Soil RAD Results

	Sample Number (All results in pCi/g)											
Parameter	**SO-BP6E-14**				**SO-BP6F-09**				**SO-BP6G-10**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)												
Actinium 228	0.86	+/-	0.21		0.98	+/-	0.35		1.06	+/-	0.47	
Bismuth 214	0.94	+/-	0.2		5.99	+/-	0.82		10.8	+/-	1.3	
Cesium 137	0.002	+/-	0.055	U	-0.088	+/-	0.085	U	-0.07	+/-	0.12	U
Lead 210	3.4	+/-	1.1		82	+/-	11		11	+/-	2.4	
Lead 212	0.91	+/-	0.16		1.08	+/-	0.22		1.27	+/-	0.22	
Lead 214	1	+/-	0.16		6.18	+/-	0.77		11	+/-	1.3	
Potassium 40	14.8	+/-	2.6		16.3	+/-	3.2		14.2	+/-	2.7	
Protactinium 234M	-4.8	+/-	4.6	U	9	+/-	10	U	15	+/-	13	U
Thallium 208	0.296	+/-	0.085		0.28	+/-	0.1		0.3	+/-	0.1	
Thorium 227	-0.03	+/-	0.28	U	-0.03	+/-	0.51	U	0.01	+/-	0.63	U
Thorium 231	0.44	+/-	0.25	U	2.08	+/-	0.47		0.57	+/-	0.57	U
Thorium 234	1.88	+/-	0.44		9.8	+/-	1.6		3.71	+/-	0.82	
Uranium 235	0.44	+/-	0.25	U	2.08	+/-	0.47		0.57	+/-	0.57	U
Uranium 238	1.88	+/-	0.44		9.8	+/-	1.6		3.71	+/-	0.82	
Alpha Spectroscopy (A-01-R)												
Plutonium 238	-0.003	+/-	0.044	U	-0.003	+/-	0.032	U	-0.025	+/-	0.044	U
Plutonium 239/40	0.017	+/-	0.033	U	-0.006	+/-	0.026	U	-0.004	+/-	0.025	U
Alpha Spectroscopy (A-01-R mod)												
Americium 241	0.022	+/-	0.062	U	0.032	+/-	0.068	U	0.051	+/-	0.069	U
Thorium 228	0.006	+/-	0.051	U	0.022	+/-	0.041	U	0.079	+/-	0.06	J
Thorium 230	0.72	+/-	0.22	J	0.98	+/-	0.25	J	1.22	+/-	0.29	
Thorium 232	1.13	+/-	0.29		1.07	+/-	0.26		1.19	+/-	0.28	
Neptunium 237	1	+/-	0.26	J	1.16	+/-	0.27		1	+/-	0.25	
Uranium 233/234	5.2	+/-	0.9		35.4	+/-	4.9		31.4	+/-	4.5	
Uranium 235/236	0.24	+/-	0.14	J	2.09	+/-	0.46		2.19	+/-	0.5	
Uranium 238	2.46	+/-	0.5		10.5	+/-	1.6		8	+/-	1.3	
Liquid Scintillation (TC-02-RC mod)												
Technetium 99	-0.07	+/-	0.34	U	0.15	+/-	0.31	U	0.34	+/-	0.34	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-22 Burial Pit 6 Soil Gas VOC Results

Sample Number		
Parameter	**VA-BP6A-XX**	
	Result	**Qual**
VOC (ppb/V)		
1,1,1-Trichloroethane	910	
1,1,2,2-Tetrachloroethane	96	U
1,1,2-Trichloro-1,2,2-trifluoroethane	240	
1,1,2-Trichloroethane	96	U
1,1-Dichloroethane	7600	
1,1-Dichloroethene	480	
1,2,4-Trichlorobenzene	480	U
1,2,4-Trimethylbenzene	62	J
1,2-Dibromoethane (EDB)	96	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	96	U
1,2-Dichlorobenzene	96	U
1,2-Dichloroethane	96	U
1,2-Dichloropropane	96	U
1,3,5-Trimethylbenzene	96	U
1,3-Dichlorobenzene	96	U
1,4-Dichlorobenzene	180	
Benzene	36	J
Benzyl chloride	190	U
Bromomethane	96	U
Carbon tetrachloride	96	U
Chlorobenzene	96	U
Chloroethane	6800	
Chloroform	96	U
Chloromethane	240	U
cis-1,2-Dichloroethene	14000	
cis-1,3-Dichloropropene	96	U
Dichlorodifluoromethane	96	U
Ethylbenzene	120	
Hexachlorobutadiene	480	U
m-Xylene & p-Xylene	460	
Methylene chloride	180	J B
o-Xylene	210	
Styrene	96	U
Tetrachloroethene	5800	
Toluene	900	
trans-1,3-Dichloropropene	96	U
Trichloroethene	1000	
Trichlorofluoromethane	96	U
Vinyl chloride	24000	

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.

Table 3-23 Burial Pit 7 Soil VOC Results

Parameter	Sample Number							
	WS-BP7A-06		SO-BP7B-10		SO-BP7B-10-M		SO-BP7C-12	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (µg/Kg)								
1,1,1-Trichloroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,1,2,2-Tetrachloroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,1,2-Trichloroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,1-Dichloroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,1-Dichloroethene	6.2	U	6.4	U	6.3	U	6.3	U
1,2,4-Trichlorobenzene	6.2	U	6.4	U	6.3	U	6.3	U
1,2-Dibromo-3-chloropropane	12	U	13	U	13	U	13	U
1,2-Dibromoethane	6.2	U	6.4	U	6.3	U	6.3	U
1,2-Dichlorobenzene	6.2	U	6.4	U	6.3	U	6.3	U
1,2-Dichloroethane	6.2	U	6.4	U	6.3	U	6.3	U
1,2-Dichloropropane	6.2	U	6.4	U	6.3	U	6.3	U
1,3-Dichlorobenzene	6.2	U	6.4	U	6.3	U	6.3	U
1,4-Dichlorobenzene	6.2	U	6.4	U	1.7	J	6.3	U
2-Butanone	25	U	26	U	25	U	25	U
2-Hexanone	25	U	26	U	25	U	25	U
4-Methyl-2-pentanone	25	U	26	U	25	U	25	U
Acetone	25	U	21	J	18	J	25	U
Benzene	6.2	U	6.4	U	6.3	U	6.3	U
Bromodichloromethane	6.2	U	6.4	U	6.3	U	6.3	U
Bromoform	6.2	U	6.4	U	6.3	U	6.3	U
Bromomethane	12	U	13	U	13	U	13	U
Carbon disulfide	6.2	U	6.4	U	6.3	U	6.3	U
Carbon tetrachloride	6.2	U	6.4	U	6.3	U	6.3	U
Chlorobenzene	6.2	U	6.4	U	6.3	U	6.3	U
Chloroethane	12	U	13	U	13	U	13	U
Chloroform	6.2	U	6.4	U	6.3	U	6.3	U
Chloromethane	12	U	13	U	13	U	13	U
cis-1,2-Dichloroethene	0.64	J	4	J	6.3	U	3.4	J
cis-1,3-Dichloropropene	6.2	U	6.4	U	6.3	U	6.3	U
Cyclohexane	12	U	13	U	13	U	13	U
Dibromochloromethane	6.2	U	6.4	U	6.3	U	6.3	U
Dichlorodifluoromethane	12	U	13	U	13	U	13	U
Ethylbenzene	6.2	U	6.4	U	6.3	U	6.3	U
Isopropylbenzene	6.2	U	6.4	U	6.3	U	6.3	U
Methyl acetate	12	U	13	U	13	U	13	U
Methyl tert-butyl ether	6.2	U	6.4	U	6.3	U	6.3	U
Methylcyclohexane	12	U	13	U	13	U	13	U
Methylene chloride	6.2	U	6.4	U	6.3	U	6.3	U
Styrene	6.2	U	6.4	U	6.3	U	6.3	U
Tetrachloroethene	4.4	J	6.4	U	6.3	U	21	
Toluene	6.2	U	6.4	U	6.3	U	6.3	U

Table 3-23 Burial Pit 7 Soil VOC Results

Parameter	Sample Number							
	WS-BP7A-06		SO-BP7B-10		SO-BP7B-10-M		SO-BP7C-12	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)								
trans-1,2-Dichloroethene	6.2	U	6.4	U	6.3	U	6.3	U
trans-1,3-Dichloropropene	6.2	U	6.4	U	6.3	U	6.3	U
Trichloroethene	0.59	J	6.4	U	6.3	U	4.2	J
Trichlorofluoromethane	6.2	U	6.4	U	6.3	U	6.3	U
Vinyl chloride	6.2	U	6.4	U	6.3	U	6.3	U
Xylenes (total)	12	U	2.6	J	13	U	13	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-24 Burial Pit 7 Soil RAD Results

Sample Number (All results in pCi/g)												
Parameter	**WS-BP7A-08**				**SO-BP7B-08**				**SO-BP7C-12**			
	Result	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**	**Result**	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)												
Actinium 228	1.23	+/-	0.33		0.73	+/-	0.21		1.23	+/-	0.52	
Bismuth 214	1.45	+/-	0.33		1.03	+/-	0.22		1.12	+/-	0.24	
Cesium 137	-0.074	+/-	0.068	U	0.007	+/-	0.051	U	-0.047	+/-	0.046	U
Lead 210	0.4	+/-	1.9	U	0.8	+/-	1.2	U	2.1	+/-	1.5	U
Lead 212	1.41	+/-	0.27		1.08	+/-	0.19		0.99	+/-	0.19	
Lead 214	1.33	+/-	0.24		1.14	+/-	0.18		1.21	+/-	0.19	
Potassium 40	19.8	+/-	3.8		17.6	+/-	3		19	+/-	3.3	
Protactinium 234M	7.3	+/-	9.9	U	-2.1	+/-	6.5	U	-3.4	+/-	7.7	U
Thallium 208	0.35	+/-	0.12		0.269	+/-	0.084		0.45	+/-	0.11	
Thorium 227	0.23	+/-	0.42	U	0.04	+/-	0.26	U	0.15	+/-	0.41	U
Thorium 231	1.35	+/-	0.35		0.11	+/-	0.25	U	-0.04	+/-	0.28	U
Thorium 234	2.84	+/-	0.77		0.43	+/-	0.8	U	1.3	+/-	1.1	U
Uranium 235	1.35	+/-	0.35		0.11	+/-	0.25	U	-0.04	+/-	0.28	U
Uranium 238	2.84	+/-	0.77		0.43	+/-	0.8	U	1.3	+/-	1.1	U
Alpha Spectroscopy (A-01-R mod)												
Thorium 228	1.03	+/-	0.29		0.86	+/-	0.25	J	1.12	+/-	0.26	
Thorium 230	1.5	+/-	0.36		1.01	+/-	0.24		1.3	+/-	0.28	
Thorium 232	1.06	+/-	0.29		1.07	+/-	0.25		1.08	+/-	0.25	
Uranium 233/234	44	+/-	5.8		4.2	+/-	0.69		0.99	+/-	0.24	J
Uranium 235/236	1.97	+/-	0.41		0.159	+/-	0.096	J	0.077	+/-	0.067	J
Uranium 238	6.15	+/-	0.95		0.87	+/-	0.23	J	0.82	+/-	0.22	J
Liquid Scintillation (TC-02-RC mod)												
Technetium 99	0.03	+/-	0.35	U	-0.16	+/-	0.42	U	0.26	+/-	0.38	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.

Table 3-25 Burial Pit 7 Leachate VOC Results

Sample Number		
Parameter	**GW-BP7A-XX**	
	Result	**Qual**
VOC (µg/L)		
1,1,1-Trichloroethane	250	D
1,1,2,2-Tetrachloroethane	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	21	
1,1,2-Trichloroethane	1	U
1,1-Dichloroethane	40	
1,1-Dichloroethene	6.9	
1,2,4-Trichlorobenzene	1	U
1,2-Dibromo-3-chloropropane	1	U
1,2-Dibromoethane	1	U
1,2-Dichlorobenzene	1	U
1,2-Dichloroethane	1	U
1,2-Dichloropropane	1	U
1,3-Dichlorobenzene	5	
1,4-Dichlorobenzene	5.2	
2-Butanone	5	U
2-Hexanone	5	U
4-Methyl-2-pentanone	5	U
Acetone	6	
Benzene	1	U
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	2	U
Carbon disulfide	0.21	J
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	2	U
Chloroform	0.5	J
Chloromethane	2	U
cis-1,2-Dichloroethene	3300	D
cis-1,3-Dichloropropene	1	U
Cyclohexane	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	2	U
Ethylbenzene	6.9	
Isopropylbenzene	1	U
Methyl acetate	5	U
Methyl tert-butyl ether	2	U
Methylcyclohexane	4	U
Methylene chloride	1	U
Styrene	1	U
Tetrachloroethene	35000	D
Toluene	5.6	
trans-1,2-Dichloroethene	12	
trans-1,3-Dichloropropene	1	U
Trichloroethene	610	D
Trichlorofluoromethane	1	U
Vinyl chloride	960	D
Xylenes (total)	31	

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
D - The result is reported from a diluted analysis.

Table 3-26 Burial Pit 7 Leachate RAD Results

Sample Number (All results in pCi/L)				
Parameter	**GW-BP7A-XX**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	34	+/-	39	U
Bismuth 214	33	+/-	19	U
Cesium 137	4.2	+/-	7.4	U
Lead 210	90	+/-	170	U
Lead 212	13	+/-	11	U
Lead 214	26	+/-	16	U
Protactinium 234M	1300	+/-	1200	U
Thallium 208	15.1	+/-	8.2	
Thorium 227	17	+/-	50	U
Thorium 231	419	+/-	73	
Thorium 234	348	+/-	91	
Uranium 235	419	+/-	73	
Uranium 238	348	+/-	91	
Alpha Spectroscopy (A-01-R)				
Plutonium 238	0.015	+/-	0.092	U
Plutonium 239/40	0.013	+/-	0.047	U
Alpha Spectroscopy (A-01-R mod)				
Americium 241	0.2	+/-	0.26	U
Thorium 228	0.18	+/-	0.17	U
Thorium 230	0.14	+/-	0.12	J
Thorium 232	0.06	+/-	0.077	U
Neptunium 237	8.1	+/-	2.7	
Uranium 233/234	7900	+/-	1300	
Uranium 235/236	310	+/-	170	
Uranium 238	270	+/-	160	
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	-2.3	+/-	1.8	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-27 Burial Pit 7 Leachate Metals and Wet Chem Results

Sample Number		
Parameter	**GW-BP7A-XX**	
	Result	**Qual**
Total Metals (μg/L)		
Aluminum	347000	N
Antimony	18.1	BN
Arsenic	134	
Barium	2620	
Beryllium	201	
Cadmium	99.4	
Calcium	82700	
Chromium	1170	
Cobalt	234	B
Copper	2900	
Iron	933000	N
Lead	3140	
Magnesium	58900	
Manganese	11300	N
Mercury	5.1	
Nickel	2650	
Potassium	30100	
Selenium	45.5	B
Silver	50	U
Sodium	83100	
Thallium	47.5	B
Vanadium	572	
Zinc	13900	
Wet Chemistry		
pH (S.U)	6.2	
Total Disolved Solids (mg/L)	443	
Hardness (μg/L)	449000	
Total Organic Carbon (mg/L)	1	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
B - The analyte was detected in the associated method blank.
N - The matrix spike recovery was not within acceptance criteria.

Table 3-28 Burial Pit 8 Soil VOC Results

Sample Number		
Parameter	**WS-BP8A-08**	
	Result	**Qual**
VOC (µg/Kg)		
1,1,1-Trichloroethane	6.2	U
1,1,2,2-Tetrachloroethane	6.2	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.2	U
1,1,2-Trichloroethane	6.2	U
1,1-Dichloroethane	3.1	J
1,1-Dichloroethene	6.2	U
1,2,4-Trichlorobenzene	6.2	U
1,2-Dibromo-3-chloropropane	12	U
1,2-Dibromoethane	6.2	U
1,2-Dichlorobenzene	6.2	U
1,2-Dichloroethane	6.2	U
1,2-Dichloropropane	6.2	U
1,3-Dichlorobenzene	6.2	U
1,4-Dichlorobenzene	250	
2-Butanone	25	U
2-Hexanone	25	U
4-Methyl-2-pentanone	25	U
Acetone	19	J
Benzene	6.2	U
Bromodichloromethane	6.2	U
Bromoform	6.2	U
Bromomethane	12	U
Carbon disulfide	0.98	J
Carbon tetrachloride	6.2	U
Chlorobenzene	6.2	U
Chloroethane	12	U
Chloroform	6.2	U
Chloromethane	12	U
cis-1,2-Dichloroethene	1.5	J
cis-1,3-Dichloropropene	6.2	U
Cyclohexane	12	U
Dibromochloromethane	6.2	U
Dichlorodifluoromethane	12	U
Ethylbenzene	6.2	U
Isopropylbenzene	6.2	U
Methyl acetate	12	U
Methyl tert-butyl ether	6.2	U
Methylcyclohexane	12	U
Methylene chloride	6.2	U
Styrene	6.2	U
Tetrachloroethene	6.2	U
Toluene	6.2	U
trans-1,2-Dichloroethene	6.2	U
trans-1,3-Dichloropropene	6.2	U
Trichloroethene	9.5	
Trichlorofluoromethane	6.2	U
Vinyl chloride	6.2	U
Xylenes (total)	12	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.

J - The result is estimated by the laboratory.

Table 3-29 Burial Pit 8 Soil RAD Results

Sample Number (All results in pCi/g)				
Parameter	**WS-BP8A-10**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	1.19	+/-	0.23	
Bismuth 214	1.06	+/-	0.23	
Cesium 137	0.024	+/-	0.056	U
Lead 210	1.8	+/-	1.1	U
Lead 212	1.01	+/-	0.19	
Lead 214	1.02	+/-	0.18	
Potassium 40	16	+/-	2.9	
Protactinium 234M	3.4	+/-	6.4	U
Thallium 208	0.343	+/-	0.094	
Thorium 227	0.33	+/-	0.35	U
Thorium 231	2.92	+/-	0.46	
Thorium 234	0.9	+/-	1.1	U
Uranium 235	2.92	+/-	0.46	
Uranium 238	0.9	+/-	1.1	U
Alpha Spectroscopy (A-01-R)				
Plutonium 238	0.064	+/-	0.074	U
Plutonium 239/40	-0.0006	+/-	0.04	U
Alpha Spectroscopy (A-01-R mod)				
Americium 241	0.021	+/-	0.068	U
Thorium 228	0.219	+/-	0.095	J
Thorium 230	1.07	+/-	0.28	
Thorium 232	1.21	+/-	0.29	
Neptunium 237	1.15	+/-	0.28	
Uranium 233/234	236	+/-	32	
Uranium 235/236	9.8	+/-	1.6	
Uranium 238	2.92	+/-	0.57	
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	-0.08	+/-	0.33	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-30 Burial Pit 9 Soil VOC Results

Sample Number		
Parameter	**SO-BP9A-16**	
	Result	**Qual**
VOC (µg/Kg)		
1,1,1-Trichloroethane	6.3	U
1,1,2,2-Tetrachloroethane	6.3	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.3	U
1,1,2-Trichloroethane	6.3	U
1,1-Dichloroethane	6.3	U
1,1-Dichloroethene	1.8	J
1,2,4-Trichlorobenzene	6.3	U
1,2-Dibromo-3-chloropropane	13	U
1,2-Dibromoethane	6.3	U
1,2-Dichlorobenzene	6.3	U
1,2-Dichloroethane	6.3	U
1,2-Dichloropropane	6.3	U
1,3-Dichlorobenzene	6.3	U
1,4-Dichlorobenzene	6.3	U
2-Butanone	25	U
2-Hexanone	25	U
4-Methyl-2-pentanone	25	U
Acetone	19	J
Benzene	6.3	U
Bromodichloromethane	6.3	U
Bromoform	6.3	U
Bromomethane	13	U
Carbon disulfide	6.3	U
Carbon tetrachloride	6.3	U
Chlorobenzene	6.3	U
Chloroethane	13	U
Chloroform	6.3	U
Chloromethane	13	U
cis-1,2-Dichloroethene	350	
cis-1,3-Dichloropropene	6.3	U
Cyclohexane	13	U
Dibromochloromethane	6.3	U
Dichlorodifluoromethane	13	U
Ethylbenzene	6.3	U
Isopropylbenzene	6.3	U
Methyl acetate	13	U
Methyl tert-butyl ether	6.3	U
Methylcyclohexane	13	U
Methylene chloride	6.3	U
Styrene	6.3	U
Tetrachloroethene	1400	
Toluene	6.3	U
trans-1,2-Dichloroethene	4.6	J
trans-1,3-Dichloropropene	6.3	U
Trichloroethene	560	
Trichlorofluoromethane	6.3	U
Vinyl chloride	13	
Xylenes (total)	13	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.

J - The result is estimated by the laboratory.

Table 3-31 Burial Pit 9 Soil RAD Results

Sample Number (All results in pCi/g)				
Parameter	**SO-BP9A-16**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	1.13	+/-	0.3	
Bismuth 214	0.87	+/-	0.22	
Cesium 137	-0.035	+/-	0.057	U
Lead 210	-0.4	+/-	1.3	U
Lead 212	0.82	+/-	0.17	
Lead 214	0.82	+/-	0.16	
Potassium 40	14.5	+/-	2.7	
Protactinium 234M	12.1	+/-	7.6	U
Thallium 208	0.279	+/-	0.087	
Thorium 227	0.1	+/-	0.31	U
Thorium 231	0.37	+/-	0.28	U
Thorium 234	3.27	+/-	0.68	
Uranium 235	0.37	+/-	0.28	U
Uranium 238	3.27	+/-	0.68	
Alpha Spectroscopy (A-01-R)				
Plutonium 238	-0.014	+/-	0.032	U
Plutonium 239/40	0.007	+/-	0.025	U
Alpha Spectroscopy (A-01-R mod)				
Americium 241	-0.018	+/-	0.042	U
Thorium 228	0.082	+/-	0.06	J
Thorium 230	0.95	+/-	0.26	J
Thorium 232	1.42	+/-	0.32	
Neptunium 237	1	+/-	0.26	J
Uranium 233/234	8.2	+/-	1.3	
Uranium 235/236	0.52	+/-	0.21	J
Uranium 238	4.06	+/-	0.75	
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	0.04	+/-	0.3	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-32 Burial Pit 9 Leachate VOC Results

Sample Number		
Parameter	**GW-BP9A-XX**	
	Result	**Qual**
VOC (µg/L)		
1,1,1-Trichloroethane	1	U
1,1,2,2-Tetrachloroethane	0.39	J
1,1,2-Trichloro-1,2,2-trifluoroethane	13	
1,1,2-Trichloroethane	1	U
1,1-Dichloroethane	6.1	
1,1-Dichloroethene	11	
1,2,4-Trichlorobenzene	1	U
1,2-Dibromo-3-chloropropane	1	U
1,2-Dibromoethane	1	U
1,2-Dichlorobenzene	1	U
1,2-Dichloroethane	1	U
1,2-Dichloropropane	1	U
1,3-Dichlorobenzene	1	U
1,4-Dichlorobenzene	1	U
2-Butanone	5	U
2-Hexanone	5	U
4-Methyl-2-pentanone	5	U
Acetone	2	U
Benzene	0.19	J
Bromodichloromethane	1	U
Bromoform	1	U
Bromomethane	2	U
Carbon disulfide	1	U
Carbon tetrachloride	1	U
Chlorobenzene	1	U
Chloroethane	0.42	J
Chloroform	0.21	J
Chloromethane	2	U
cis-1,2-Dichloroethene	2500	D
cis-1,3-Dichloropropene	1	U
Cyclohexane	1	U
Dibromochloromethane	1	U
Dichlorodifluoromethane	2	U
Ethylbenzene	1	U
Isopropylbenzene	0.78	J
Methyl acetate	5	U
Methyl tert-butyl ether	2	U
Methylcyclohexane	4	U
Methylene chloride	1	U
Styrene	1	U
Tetrachloroethene	4800	D
Toluene	0.4	J
trans-1,2-Dichloroethene	39	
trans-1,3-Dichloropropene	1	U
Trichloroethene	2700	D
Trichlorofluoromethane	1	U
Vinyl chloride	190	D
Xylenes (total)	2.9	J

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
D - The result is reported from a diluted analysis.

Table 3-33 Burial Pit 9 Leachate Metals and Wet Chem Results

Sample Number (All results in pCi/L)				
Parameter	**GW-BP9A-XX**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	6	+/-	25	U
Bismuth 214	10	+/-	10	U
Cesium 137	-0.9	+/-	6.6	U
Lead 210	15	+/-	89	U
Lead 212	13.8	+/-	7	U
Lead 214	30	+/-	11	
Potassium 40	246	+/-	91	
Protactinium 234M	-140	+/-	730	U
Thallium 208	7.7	+/-	6.5	U
Thorium 227	7	+/-	31	U
Thorium 231	18	+/-	23	U
Thorium 234	71	+/-	71	U
Uranium 235	18	+/-	23	U
Uranium 238	71	+/-	71	U
Alpha Spectroscopy (A-01-R)				
Plutonium 238	-0.04	+/-	0.1	U
Plutonium 239/40	0.005	+/-	0.056	U
Alpha Spectroscopy (A-01-R mod)				
Americium 241	-0.004	+/-	0.1	U
Thorium 228	0.1	+/-	0.15	U
Thorium 230	0.33	+/-	0.2	J
Thorium 232	0.058	+/-	0.09	U
Neptunium 237	-0.19	+/-	0.58	U
Uranium 233/234	67.4	+/-	9.1	
Uranium 235/236	3.49	+/-	0.74	
Uranium 238	26.2	+/-	3.7	
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	10.1	+/-	2.2	

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-34 Burial Pit 9 Leachate Metals and Wet Chem Results

Sample Number		
Parameter	**GW-BP9A-XX**	
	Result	**Qual**
Total Metals (μg/L)		
Aluminum	342000	N
Antimony	50	U
Arsenic	82.9	
Barium	3030	
Beryllium	18.8	B
Cadmium	7.7	B
Calcium	244000	
Chromium	432	
Cobalt	178	B
Copper	298	
Iron	319000	N
Lead	474	
Magnesium	156000	
Manganese	14400	N
Mercury	0.18	B
Nickel	393	
Potassium	34200	
Selenium	75	U
Silver	50	U
Sodium	25300	
Thallium	14	B
Vanadium	642	
Zinc	914	
Wet Chemistry		
pH (S.U)	6.8	
Total Disolved Solids (mg/L)	568	
Hardness (μg/L)	1200000	
Total Organic Carbon (mg/L)	1	U

U - The analyte was not detected in the sample. The number presented represents the detection limit.
B - The analyte was detected in the associated method blank.
N - The matrix spike recovery was not within acceptance criteria.

Table 3-35 Perimeter Borings Soil VOC Results

Parameter	Sample Number											
	SO-PB-10-10		SO-PB11-07		SO-PB23-13		SO-PB24-15		SO-PB28-12		SO-PB32-08	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (µg/Kg)												
1,1,1-Trichloroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,1,2,2-Tetrachloroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,1,2-Trichloroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,1-Dichloroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,1-Dichloroethene	6.6	U	6.5	U	3.3	J	6.1	U	6	U	6.5	U
1,2,4-Trichlorobenzene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,2-Dibromo-3-chloropropane	13	U	13	U	13	U	12	U	12	U	13	U
1,2-Dibromoethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,2-Dichlorobenzene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,2-Dichloroethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,2-Dichloropropane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,3-Dichlorobenzene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
1,4-Dichlorobenzene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
2-Butanone	26	U	30		99		8.9	J	24	U	21	J
2-Hexanone	26	U	26	U	26	U	25	U	24	U	26	U
4-Methyl-2-pentanone	26	U	26	U	26	U	25	U	24	U	26	U
Acetone	12	J	160		1100	J B	63		240		120	
Benzene	6.6	U	6.5	U	2.1	J	6.1	U	6	U	6.5	U
Bromodichloromethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Bromoform	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Bromomethane	13	U	13	U	13	U	12	U	12	U	13	U
Carbon disulfide	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Carbon tetrachloride	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Chlorobenzene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Chloroethane	13	U	13	U	13	U	12	U	12	U	13	U
Chloroform	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Chloromethane	13	U	13	U	13	U	12	U	12	U	13	U
cis-1,2-Dichloroethene	6.6	U	6.5	U	2400		7.6		6	U	6.5	U
cis-1,3-Dichloropropene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Cyclohexane	13	U	13	U	13	U	12	U	12	U	13	U
Dibromochloromethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Dichlorodifluoromethane	13	U	13	U	13	U	12	U	12	U	13	U
Ethylbenzene	6.6	U	4.6	J	570		6.1	U	6	U	6.5	U
Isopropylbenzene	6.6	U	6.5	U	1300		6.1	U	6	U	6.5	U
Methyl acetate	13	U	13	U	13	U	12	U	12	U	13	U
Methyl tert-butyl ether	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Methylcyclohexane	13	U	13	U	150		12	U	12	U	13	U
Methylene chloride	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Styrene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Tetrachloroethene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Toluene	6.6	U	0.79	J B	170	B	0.54	J B	6	U	0.89	J B

Table 3-35 Perimeter Borings Soil VOC Results

Parameter	Sample Number											
	SO-PB-10-10		SO-PB11-07		SO-PB23-13		SO-PB24-15		SO-PB28-12		SO-PB32-08	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (μg/Kg)												
trans-1,2-Dichloroethene	6.6	U	6.5	U	19		6.1	U	6	U	6.5	U
trans-1,3-Dichloropropene	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Trichloroethene	6.6	U	6.5	U	58		4.3	J	6	U	6.5	U
Trichlorofluoromethane	6.6	U	6.5	U	6.5	U	6.1	U	6	U	6.5	U
Vinyl chloride	6.6	U	6.5	U	11		6.1	U	6	U	6.5	U
Xylenes (total)	13	U	12	J	6400		12	U	12	U	13	U

U - The analyte was not detected in the sample. The number presented represents the detection limt.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.
D - The result is reported from a diluted analysis.

Table 3-36 Perimeter Borings Soil RAD Results

Sample Number (All results in pCi/g)				
Parameter	**SO-PB5-04**			
	Result	**Uncertainty**		**Qual**
Gamma Scan (901.1 mod)				
Actinium 228	0.93	+/-	0.23	
Bismuth 214	1.01	+/-	0.21	
Cesium 137	-0.04	+/-	0.055	U
Lead 210	0.3	+/-	1.2	U
Lead 212	0.93	+/-	0.18	
Lead 214	0.99	+/-	0.17	
Protactinium 234M	0.9	+/-	7.3	U
Thallium 208	0.355	+/-	0.097	
Thorium 227	0.18	+/-	0.34	U
Thorium 231	0.04	+/-	0.26	U
Thorium 234	1.04	+/-	0.88	U
Uranium 235	0.04	+/-	0.26	U
Uranium 238	1.04	+/-	0.88	U
Alpha Spectroscopy (A-01-R)				
Plutonium 238	0.001	+/-	0.07	U
Plutonium 239/40	0.01	+/-	0.039	U
Alpha Spectroscopy (A-01-R mod)				
Americium 241	0.001	+/-	0.047	U
Thorium 228	0.081	+/-	0.064	J
Thorium 230	0.98	+/-	0.24	J
Thorium 232	1.24	+/-	0.28	
Neptunium 237	0.9	+/-	0.23	J
Uranium 233/234	1.05	+/-	0.28	
Uranium 235/236	0.043	+/-	0.061	U
Uranium 238	0.84	+/-	0.24	J
Liquid Scintillation (TC-02-RC mod)				
Technetium 99	0.38	+/-	0.34	U

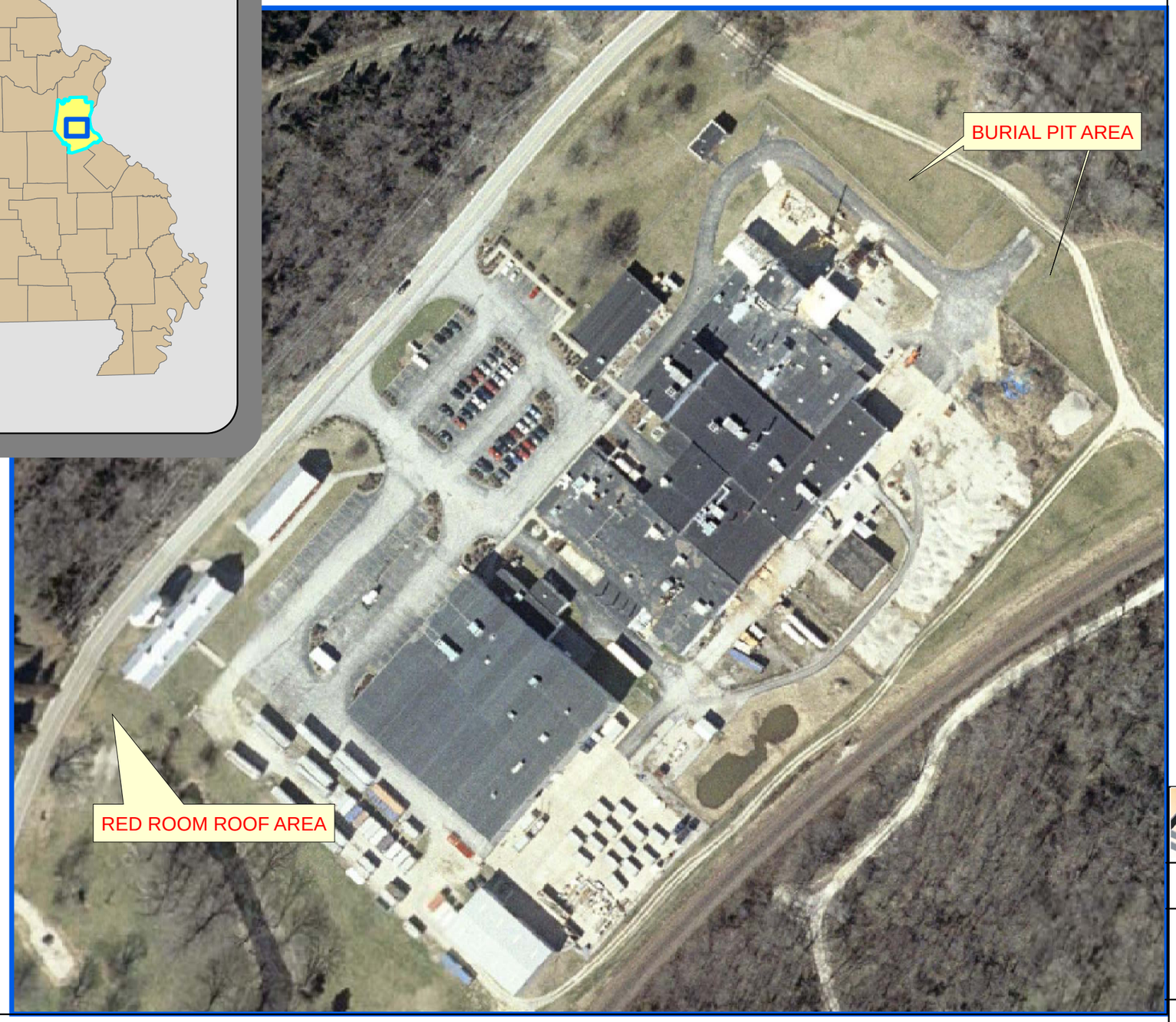
U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.

Table 3-37 Perimeter Boring 23 Soil Gas VOC Results

Sample Number		
Parameter	**VA-PB23-XX**	
	Result	**Qual**
VOC (ppb/V)		
1,1,1-Trichloroethane	6.4	
1,1,2,2-Tetrachloroethane	2	U
1,1,2-Trichloro-1,2,2-trifluoroethane	55	
1,1,2-Trichloroethane	2	U
1,1-Dichloroethane	5	
1,1-Dichloroethene	3.2	
1,2,4-Trichlorobenzene	10	U
1,2,4-Trimethylbenzene	8.5	
1,2-Dibromoethane (EDB)	2	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	92	
1,2-Dichlorobenzene	2	U
1,2-Dichloroethane	2	U
1,2-Dichloropropane	1	J
1,3,5-Trimethylbenzene	7	
1,3-Dichlorobenzene	2	U
1,4-Dichlorobenzene	2	U
Benzene	8.8	
Benzyl chloride	1.1	J
Bromomethane	2	U
Carbon tetrachloride	2.6	
Chlorobenzene	2	U
Chloroethane	2	
Chloroform	0.63	J
Chloromethane	5	U
cis-1,2-Dichloroethene	540	
cis-1,3-Dichloropropene	2	U
Dichlorodifluoromethane	18	
Ethylbenzene	15	
Hexachlorobutadiene	1.8	J
m-Xylene & p-Xylene	68	
Methylene chloride	3.9	J B
o-Xylene	44	
Styrene	2	U
Tetrachloroethene	70	
Toluene	35	
trans-1,3-Dichloropropene	2	U
Trichloroethene	15	
Trichlorofluoromethane	0.33	J
Vinyl chloride	240	

U - The analyte was not detected in the sample. The number presented represents the detection limit.
J - The result is estimated by the laboratory.
B - The analyte was detected in the associated method blank.

FIGURES

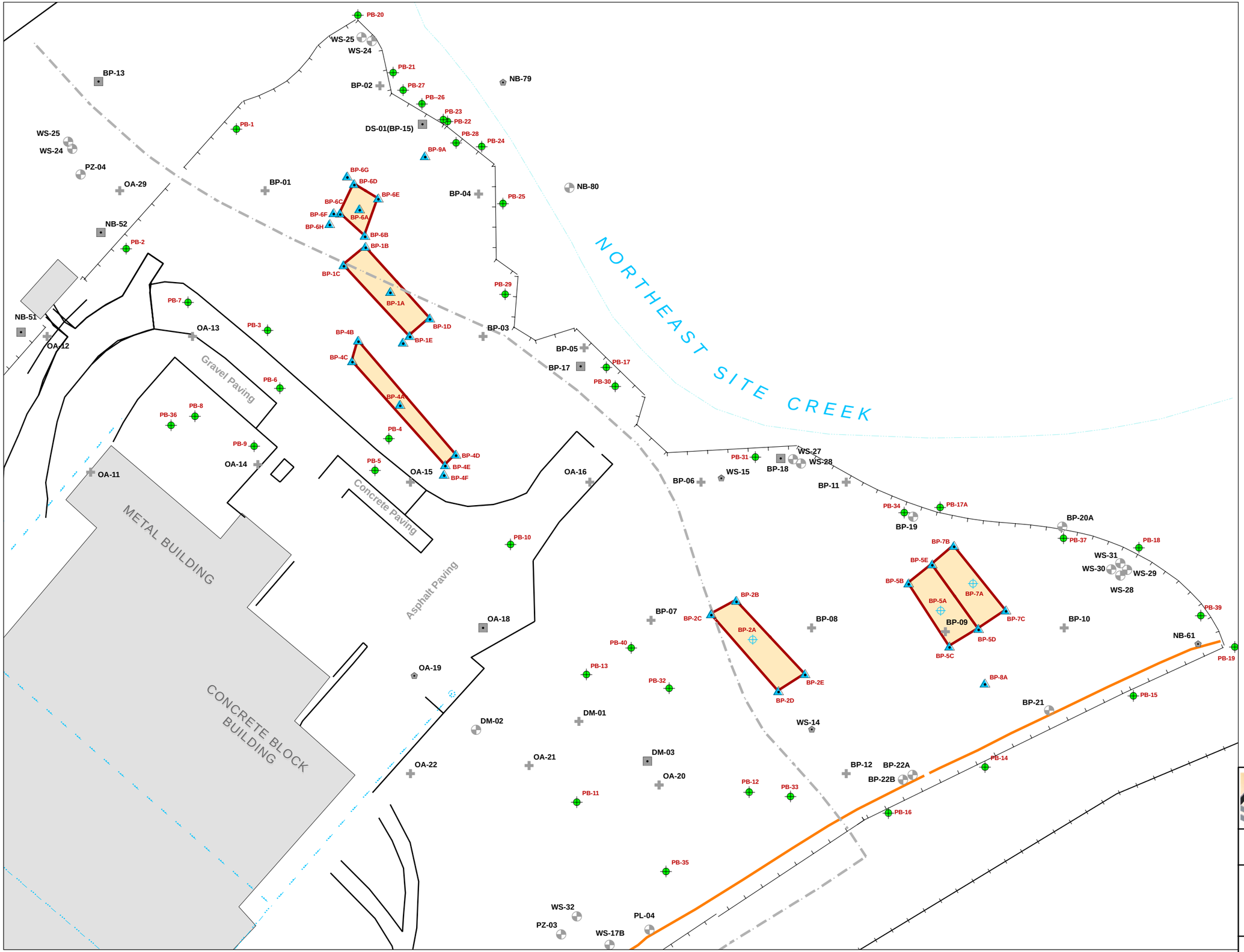


CABRERA SERVICES
RADIOLOGICAL • ENVIRONMENTAL • REMEDIATION

SITE VIEW

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig2-1	**Figure 2-1**



Legend

- Cabrera Perimeter Boring
- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Surface Soil Sample
- Subsurface Soil Sample
- Monitoring Well
- Temporary Monitoring Well
- Gravel Road Center Line
- Railroad Track
- Fence Line
- Gas Line
- Sewer Utility
- Pavement
- Creek
- Buildings
- Burial Pit Area

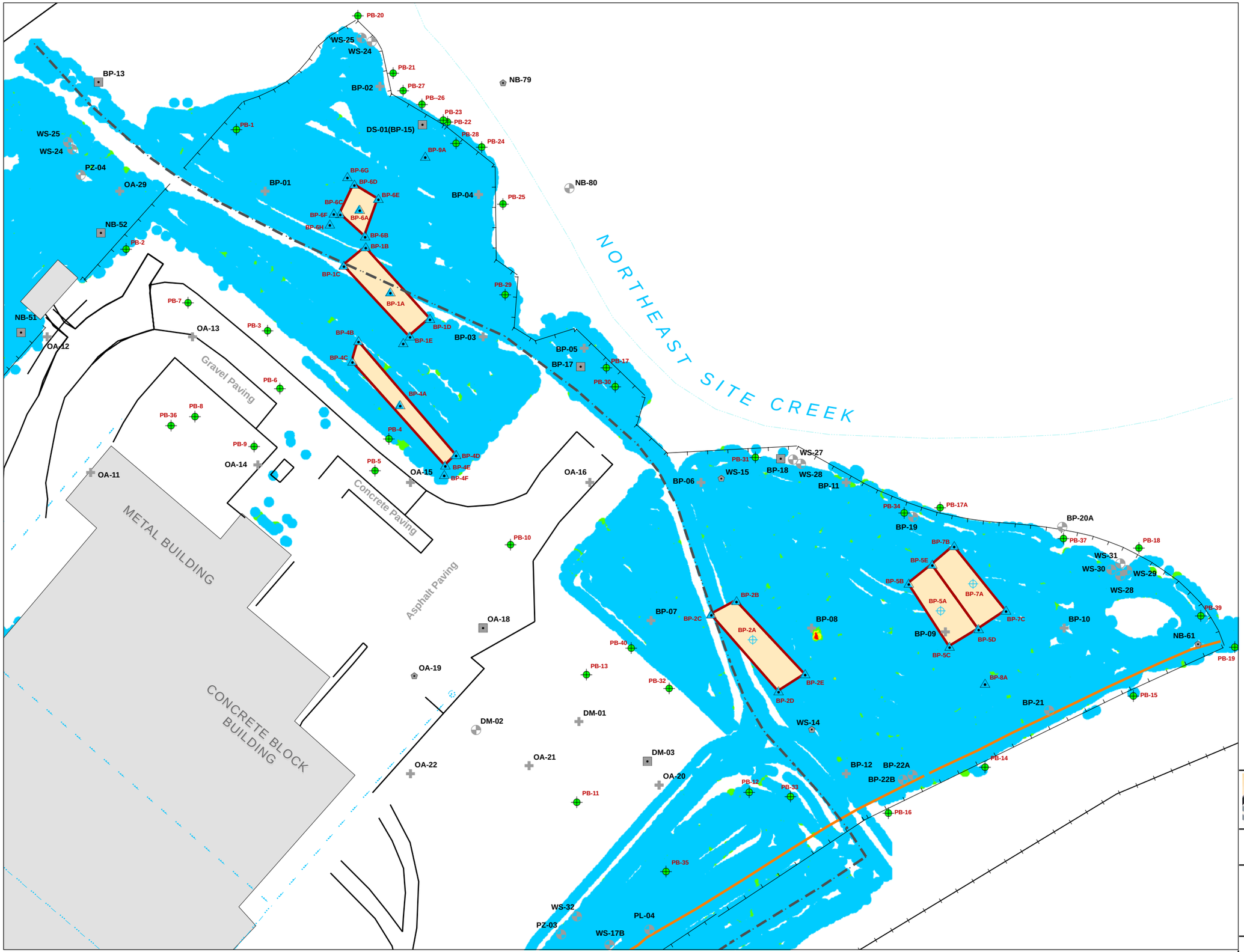
0 50 100 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BASE MAP

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-1	Figure 3-1



Legend

- Cabrera Perimeter Boring
- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Surface Soil Sample
- Subsurface Soil Sample
- Monitoring Well
- Temporary Monitoring Well
- Gravel Road Center Line
- Railroad Track
- Fence Line
- Gas Line
- Sewer Utility
- Pavement
- Creek
- Buildings
- Burial Pit Area

1 m Contour of Z-score

- <1
- 1-2
- 2-3
- >3

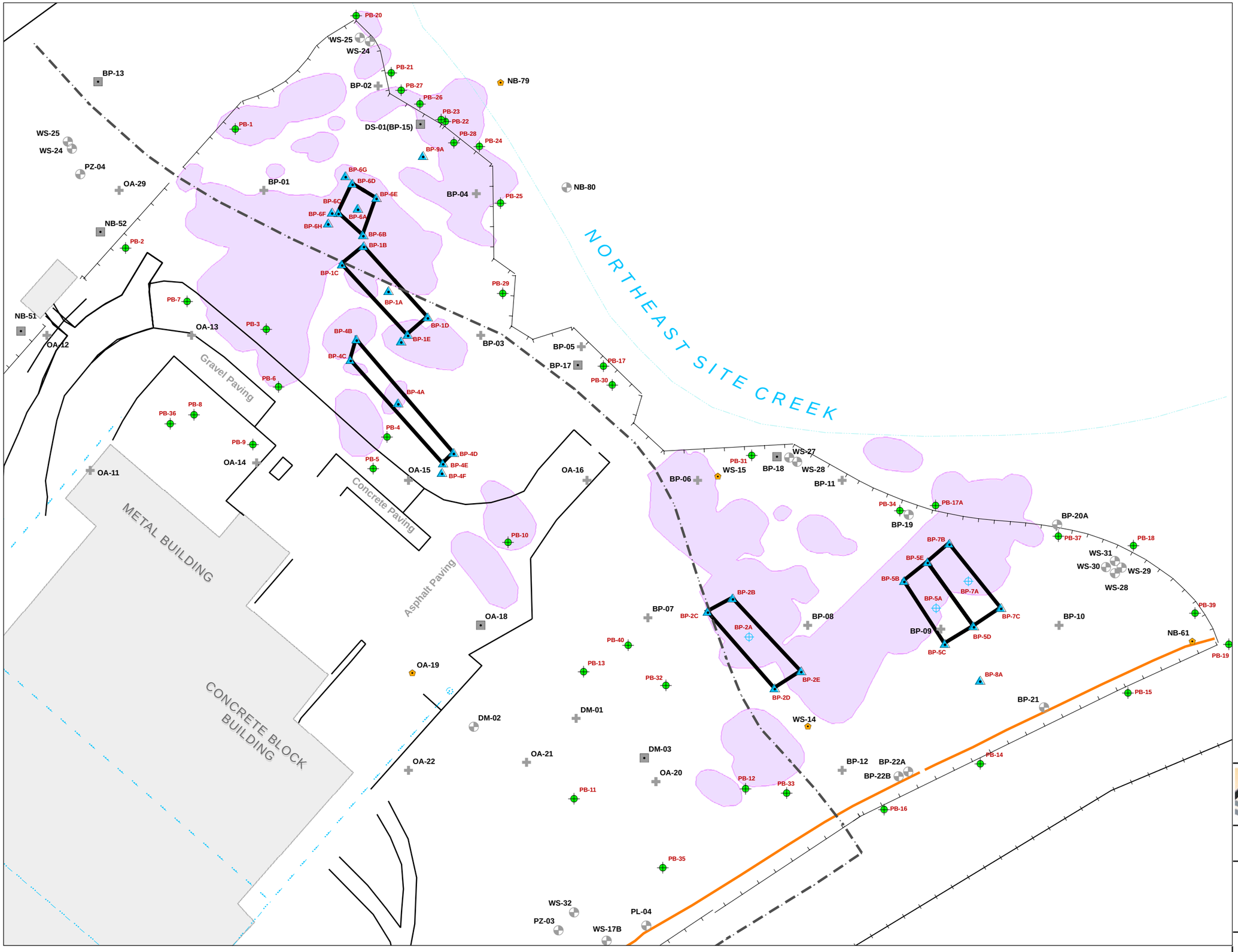
0 50 100 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

GAMMA WALKOVER SURVEY RESULTS

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

3/2007	DRAWING # Fig. 3-2	Figure 3-2



Legend

- Cabrera Perimeter Boring
- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Surface Soil Sample
- Subsurface Soil Sample
- Monitoring Well
- Temporary Monitoring Well
- Gravel Road Center Line
- Railroad Track
- Fence Line
- Gas Line
- Sewer Utility
- Pavement
- Creek
- Buildings
- Interpreted_Anomaly
- Burial Pit Area

0 50 100 Feet

CABRERA SERVICES
RADIOLOGICAL • ENVIRONMENTAL • REMEDIATION

COMBINED ELECTROMAGNETIC AND MAGNETIC ANOMALY MAP

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-3	Figure 3-3

Parameter	SO-RR6-01				SO-RR7-01				SO-RR8-05				SO-RR9-01			
	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual	Result	Uncertainty		Qual
Gamma Scan (901.1 mod)																
Actinium 228	1.61	+/-	0.34		1.1	+/-	0.27		0.86	+/-	0.22		0.99	+/-	0.27	
Bismuth 214	0.65	+/-	0.19		0.81	+/-	0.18		0.82	+/-	0.18		0.73	+/-	0.18	
Cesium 137	0.126		0.065	J												
Lead 212	1.58	+/-	0.27		0.85	+/-	0.16		0.75	+/-	0.16		0.61	+/-	0.13	
Lead 214	0.73	+/-	0.15		0.74	+/-	0.14		0.74	+/-	0.15		0.74	+/-	0.14	
Potassium 40	17.4	+/-	3.2		15.8	+/-	2.8		12.3	+/-	2.4		14.1	+/-	2.6	
Protactinium 234M	35		13													
Thallium 208	0.49	+/-	0.13		0.338	+/-	0.094		0.301	+/-	0.089		0.303	+/-	0.084	
Thorium 231	9.7		1.3						1.91	+/-	0.37		1.97	+/-	0.35	
Thorium 234	30.2	+/-	4.2		2.49	+/-	0.53		4.19	+/-	0.78		8.6	+/-	1.3	
Uranium 235	9.7		1.3						1.91	+/-	0.37		1.97	+/-	0.35	
Uranium 238	30.2	+/-	4.2		2.49	+/-	0.53		4.19	+/-	0.78		8.6	+/-	1.3	
Alpha Spectroscopy (A-01-R mod)																
Thorium 228	1.81	+/-	0.36		0.71	+/-	0.21	J	0.85	+/-	0.23	J	1.02	+/-	0.25	
Thorium 230	1.31	+/-	0.29		0.83	+/-	0.23	J	1.15	+/-	0.28		1.43	+/-	0.31	
Thorium 232	1.97	+/-	0.38		0.73	+/-	0.21	J	0.96	+/-	0.25	J	0.78	+/-	0.21	J
Uranium 233/234	840	+/-	120		15.1	+/-	1.6		49	+/-	12	J	59.8	+/-	5.8	
Uranium 235/236	19.7	+/-	9.9	J	0.71	+/-	0.21	J					2.94	+/-	0.49	
Uranium 238	45	+/-	15	J	3.16	+/-	0.48		10.2	+/-	4.8	J	14.7	+/-	1.6	
Liquid Scintillation (TC-02-RC mod)																
Technetium 99	4.45	+/-	0.66		1.32	+/-	0.43		1.27	+/-	0.43		1.95	+/-	0.46	

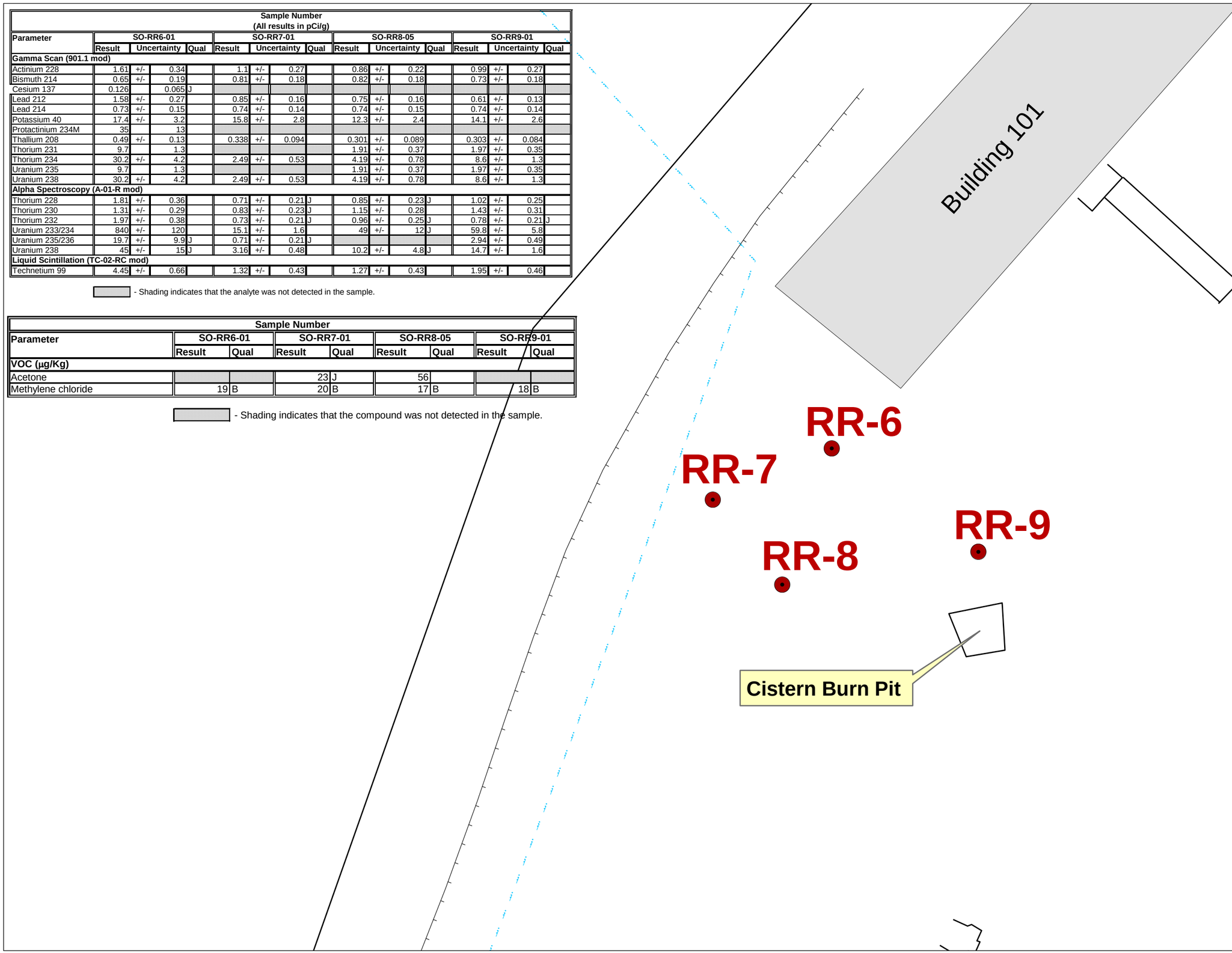
Sample Number
(All results in pCi/g)

- Shading indicates that the analyte was not detected in the sample.

Parameter	SO-RR6-01		SO-RR7-01		SO-RR8-05		SO-RR9-01	
	Result	Qual	Result	Qual	Result	Qual	Result	Qual
VOC (µg/Kg)								
Acetone			23	J	56			
Methylene chloride	19	B	20	B	17	B	18	B

Sample Number

- Shading indicates that the compound was not detected in the sample.



Legend

- Cabrera Red Room Roof Area Boring
- Road Center Line
- Railroad Track
- Fence Line
- Gas Line
- Sewer Utility
- Pavement
- Buildings

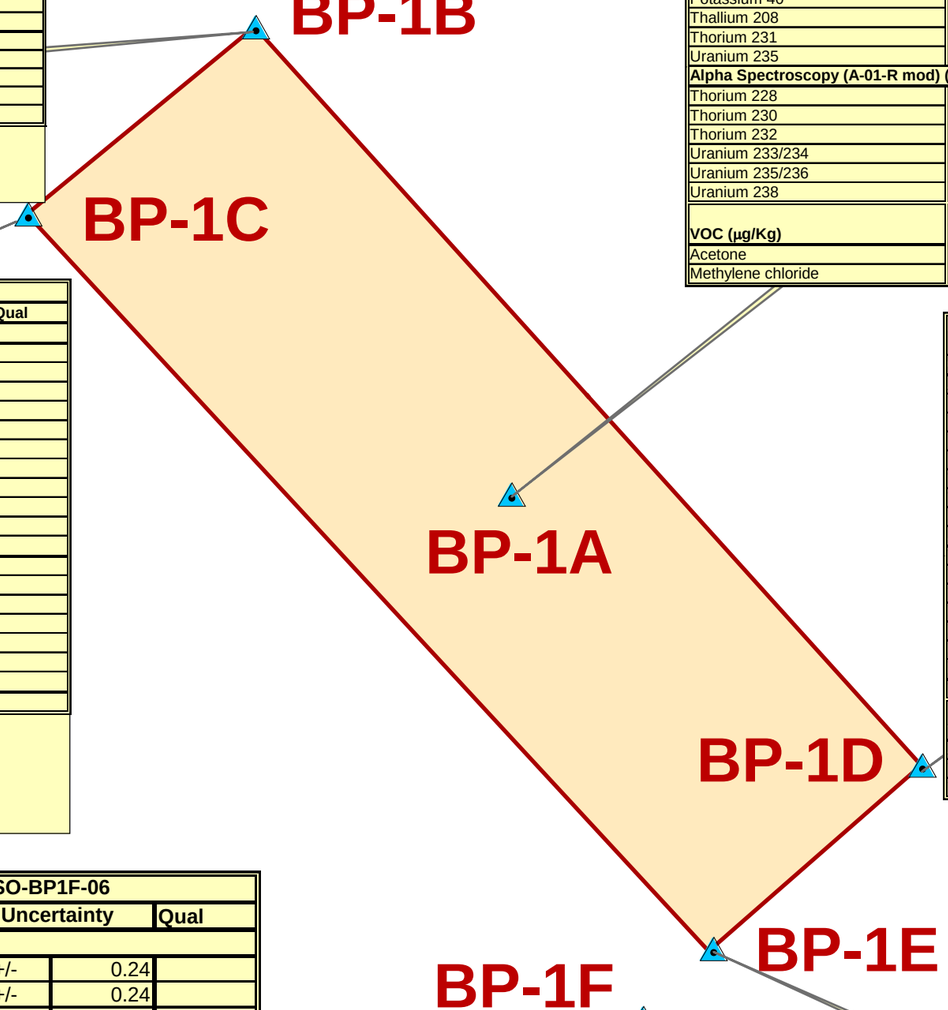
0 20 40 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

RED ROOM ROOF AREA

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-4	Figure 3-4



Parameter	SO-BP1B-09			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.83	+/-	0.24	
Bismuth 214	0.77	+/-	0.19	
Lead 212	0.91	+/-	0.17	
Lead 214	0.96	+/-	0.16	
Potassium 40	20.7	+/-	3.4	
Thallium 208	0.234	+/-	0.072	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.16	+/-	0.28	
Thorium 230	1.23	+/-	0.29	
Thorium 232	1.18	+/-	0.28	
Uranium 233/234	1.57	+/-	0.34	
Uranium 238	0.96	+/-	0.26	J

VOC (µg/Kg)	SO-BP1B-09	
	Result	Qual
Tetrachloroethene	34	
Trichloroethene	2.5	J

Parameter	SO-BP1A-14			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.33	+/-	0.25	
Bismuth 214	0.79	+/-	0.18	
Lead 212	1.36	+/-	0.22	
Lead 214	0.93	+/-	0.15	
Potassium 40	14.5	+/-	2.5	
Thallium 208	0.387	+/-	0.095	
Thorium 231	0.82	+/-	0.21	
Uranium 235	0.82	+/-	0.21	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.32	+/-	0.34	
Thorium 230	1.39	+/-	0.35	
Thorium 232	1.12	+/-	0.3	
Uranium 233/234	45.7	+/-	5	
Uranium 235/236	2	+/-	0.44	
Uranium 238	3.27	+/-	0.56	

VOC (µg/Kg)	SO-BP1A-12	
	Result	Qual
Acetone	37	
Methylene chloride	19	B

Parameter	SO-BP1C-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.2	+/-	0.51	
Bismuth 214	0.92	+/-	0.25	
Lead 212	1.11	+/-	0.22	
Lead 214	0.9	+/-	0.16	
Potassium 40	18.6	+/-	3.3	
Thallium 208	0.44	+/-	0.13	
Thorium 231	0.99	+/-	0.3	
Thorium 234	2	+/-	1.2	
Uranium 235	0.99	+/-	0.3	
Uranium 238	2	+/-	1.2	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.21	+/-	0.28	
Thorium 230	1.25	+/-	0.29	
Thorium 232	1.08	+/-	0.27	
Uranium 233/234	28.8	+/-	3.2	
Uranium 235/236	1.78	+/-	0.4	
Uranium 238	2.11	+/-	0.41	
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	1.63	+/-	0.46	

VOC (µg/Kg)	SO-BP1C-09	
	Result	Qual
Acetone	9.4	J
cis-1,2-Dichloroethene	23	
Tetrachloroethene	1.1	J
Trichloroethene	18	

Parameter	SO-BP1D-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.13	+/-	0.31	
Bismuth 214	0.81	+/-	0.22	
Lead 212	0.96	+/-	0.2	
Lead 214	0.92	+/-	0.17	
Potassium 40	16.6	+/-	3.1	
Thallium 208	0.51	+/-	0.13	
Thorium 234	2.87	+/-	0.65	
Uranium 238	2.87	+/-	0.65	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.18	+/-	0.34	
Thorium 230	1.07	+/-	0.32	
Thorium 232	0.74	+/-	0.26	J
Uranium 233/234	2.22	+/-	0.45	
Uranium 235/236	0.16	+/-	0.11	J
Uranium 238	2.55	+/-	0.5	
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	5.42	+/-	0.76	

VOC (µg/Kg)	SO-BP1D-12	
	Result	Qual
Acetone	8	J
Tetrachloroethene	2.6	J
Toluene	0.49	J

Parameter	SO-BP1F-06			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.97	+/-	0.24	
Bismuth 214	1.28	+/-	0.24	
Lead 212	1.08	+/-	0.19	
Lead 214	1.31	+/-	0.2	
Potassium 40	16	+/-	3	
Thallium 208	0.316	+/-	0.095	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.07	+/-	0.26	
Thorium 230	1.12	+/-	0.26	
Thorium 232	0.98	+/-	0.24	J
Uranium 233/234	1.79	+/-	0.36	
Uranium 235/236	0.136	+/-	0.092	J
Uranium 238	1.21	+/-	0.28	

VOC (µg/Kg)	SO-BP1F-06	
	Result	Qual
Methylene chloride	4.5	J

Parameter	SO-BP1E-07			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.21	+/-	0.29	
Bismuth 214	1.09	+/-	0.27	
Lead 212	1.04	+/-	0.21	
Lead 214	1.19	+/-	0.19	
Potassium 40	18.5	+/-	3.4	
Thallium 208	0.39	+/-	0.11	
Thorium 231	0.91	+/-	0.3	
Thorium 234	1.61	+/-	0.58	
Uranium 235	0.91	+/-	0.3	
Uranium 238	1.61	+/-	0.58	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.19	+/-	0.27	
Thorium 230	1.19	+/-	0.26	
Thorium 232	1.05	+/-	0.24	
Uranium 233/234	27.5	+/-	3.7	
Uranium 235/236	1	+/-	0.26	
Uranium 238	2.34	+/-	0.43	

VOC (µg/Kg)	SO-BP1E-07	
	Result	Qual
1,4-Dichlorobenzene	28	
2-Butanone	4.7	J
Acetone	26	J
Benzene	0.29	J
Chlorobenzene	69	
Ethylbenzene	0.71	J
Methyl acetate	8.5	J
Methylene chloride	11	
Toluene	0.87	J B
Xylenes (total)	5.1	J

Legend

Cabrera Burial Pit Boring

Burial Pit Area

0 5 10 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 1

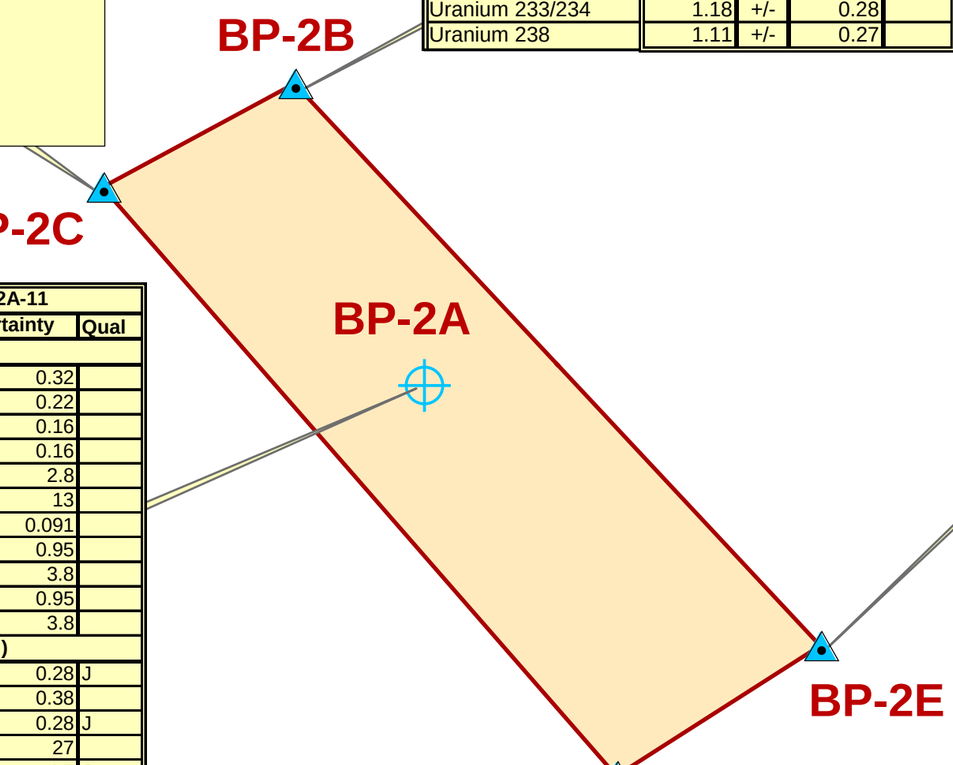
WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-5	Figure 3-5

Parameter	SO-BP2C-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.29	+/-	0.33	
Bismuth 214	0.94	+/-	0.22	
Lead 212	1.07	+/-	0.2	
Lead 214	0.84	+/-	0.16	
Potassium 40	19.6	+/-	3.4	
Thallium 208	0.38	+/-	0.1	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.03	+/-	0.26	
Thorium 230	1.37	+/-	0.31	
Thorium 232	1.12	+/-	0.27	
Uranium 233/234	0.96	+/-	0.24	J
Uranium 238	1.08	+/-	0.26	

VOC (µg/Kg)	SO-BP2C-16	
	Result	Qual
1,1-Dichloroethane	2.8	J
Acetone	7.6	J
cis-1,2-Dichloroethene	4	J
Tetrachloroethene	2.5	J
Toluene	2.5	J B

Parameter	SO-BP2B-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.11	+/-	0.29	
Bismuth 214	0.86	+/-	0.21	
Lead 212	1.02	+/-	0.18	
Lead 214	0.96	+/-	0.17	
Potassium 40	18.5	+/-	3.2	
Thallium 208	0.253	+/-	0.084	
Thorium 234	1.36	+/-	0.67	
Uranium 238	1.36	+/-	0.67	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.08	+/-	0.25	
Thorium 230	1.14	+/-	0.26	
Thorium 232	0.98	+/-	0.23	J
Uranium 233/234	1.18	+/-	0.28	
Uranium 238	1.11	+/-	0.27	



Parameter	WS-BP2A-11			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.95	+/-	0.32	
Bismuth 214	0.92	+/-	0.22	
Lead 212	0.73	+/-	0.16	
Lead 214	0.79	+/-	0.16	
Potassium 40	14.6	+/-	2.8	
Protactinium 234M	43	+/-	13	
Thallium 208	0.273	+/-	0.091	
Thorium 231	6.98	+/-	0.95	
Thorium 234	26.8	+/-	3.8	
Uranium 235	6.98	+/-	0.95	
Uranium 238	26.8	+/-	3.8	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.91	+/-	0.28	J
Thorium 230	1.48	+/-	0.38	
Thorium 232	0.9	+/-	0.28	J
Uranium 233/234	161	+/-	27	
Uranium 235/236	9.3	+/-	4.7	J
Uranium 238	36.8	+/-	9.9	J
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	4.11	+/-	0.63	

VOC (µg/Kg)	WS-BP2A-11	
	Result	Qual
Acetone	30	
cis-1,2-Dichloroethene	3.7	J
Methylene chloride	19	B
Tetrachloroethene	54	
Toluene	2.4	J B
Trichloroethene	8.4	
Vinyl chloride	1.7	J

Parameter	SO-BP2E-07			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.32	+/-	0.27	
Bismuth 214	1.04	+/-	0.23	
Lead 212	1.1	+/-	0.2	
Lead 214	0.96	+/-	0.17	
Potassium 40	16.5	+/-	3	
Thallium 208	0.345	+/-	0.098	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.8	+/-	0.21	J
Thorium 230	1.25	+/-	0.28	
Thorium 232	0.99	+/-	0.24	J
Uranium 233/234	0.83	+/-	0.22	J
Uranium 238	1	+/-	0.25	

VOC (µg/Kg)	SO-BP2E-12	
	Result	Qual
1,1,1-Trichloroethane	1.7	J
1,1,2-Trichloro-1,2,2-trifluoroethane	4.9	J
1,1-Dichloroethane	3.1	J
Acetone	6.7	J
cis-1,2-Dichloroethene	37	
Tetrachloroethene	1100	D
Trichloroethene	22	

Parameter	SO-BP2D-05			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1	+/-	0.24	
Bismuth 214	1.12	+/-	0.22	
Lead 212	1.18	+/-	0.2	
Lead 214	1.09	+/-	0.18	
Potassium 40	20.1	+/-	3.4	
Thallium 208	0.355	+/-	0.095	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.15	+/-	0.27	
Thorium 230	1.27	+/-	0.29	
Thorium 232	1.1	+/-	0.26	
Uranium 233/234	1.16	+/-	0.27	
Uranium 238	0.98	+/-	0.26	J

VOC (µg/Kg)	SO-BP2D-13	
	Result	Qual
1,1,1-Trichloroethane	2.8	J
1,1,2-Trichloro-1,2,2-trifluoroethane	14	
1,1-Dichloroethane	3.3	J
1,1-Dichloroethene	1.5	J
Acetone	14	J
cis-1,2-Dichloroethene	51	
Tetrachloroethene	1300	D
Trichloroethene	23	

N

Legend

Cabrera Burial Pit Boring

Cabrera Burial Pit Boring / Monitoring Well

Burial Pit Area

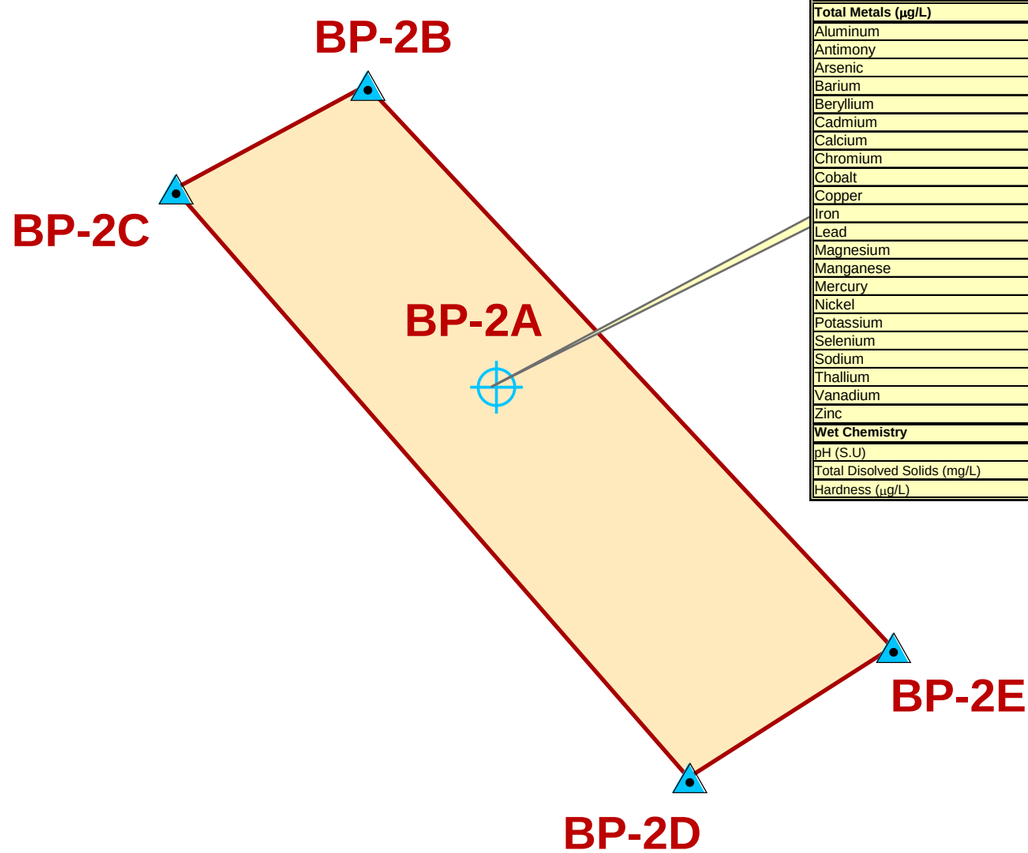
0 10 20 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 2

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-6	Figure 3-6



Parameter	GW-BP2-XX			
	Result	Uncertainty		Qual
Alpha Spectroscopy (A-01-R mod) (pCi/L)				
Thorium 228	0.27	+/-	0.16	J
Thorium 230	0.54	+/-	0.22	J
Uranium 233/234	404	+/-	57	
Uranium 235/236	19.5	+/-	3.2	
Uranium 238	99	+/-	14	
Liquid Scintillation (TC-02-RC mod) (pCi/L)				
Technetium 99	604	+/-	62	

VOC (µg/L)	GW-BP2-XX Result	Qual
1,1,1-Trichloroethane	0.21	J
1,1,2-Trichloro-1,2,2-trifluoroethane	1.4	
1,1-Dichloroethane	0.9	J
Acetone	1.5	J
cis-1,2-Dichloroethene	36	
Tetrachloroethene	150	D
Toluene	0.32	J
trans-1,2-Dichloroethene	0.41	J
Trichloroethene	9.3	
Vinyl chloride	4.9	
Total Metals (µg/L)		
Aluminum	41100	N
Antimony	3.6	BN
Arsenic	20.5	
Barium	579	
Beryllium	1.9	B
Cadmium	1.4	B
Calcium	34100	
Chromium	56.7	
Cobalt	21.9	B
Copper	50.7	
Iron	104000	N
Lead	71.6	
Magnesium	18200	
Manganese	4730	N
Mercury	0.16	B
Nickel	68.4	
Potassium	7330	
Selenium	4.5	B
Sodium	13600	
Thallium	8	B
Vanadium	89.7	
Zinc	794	
Wet Chemistry		
pH (S.U)	6.6	
Total Disolved Solids (mg/L)	249	
Hardness (µg/L)	160000	

Legend

- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Burial Pit Area

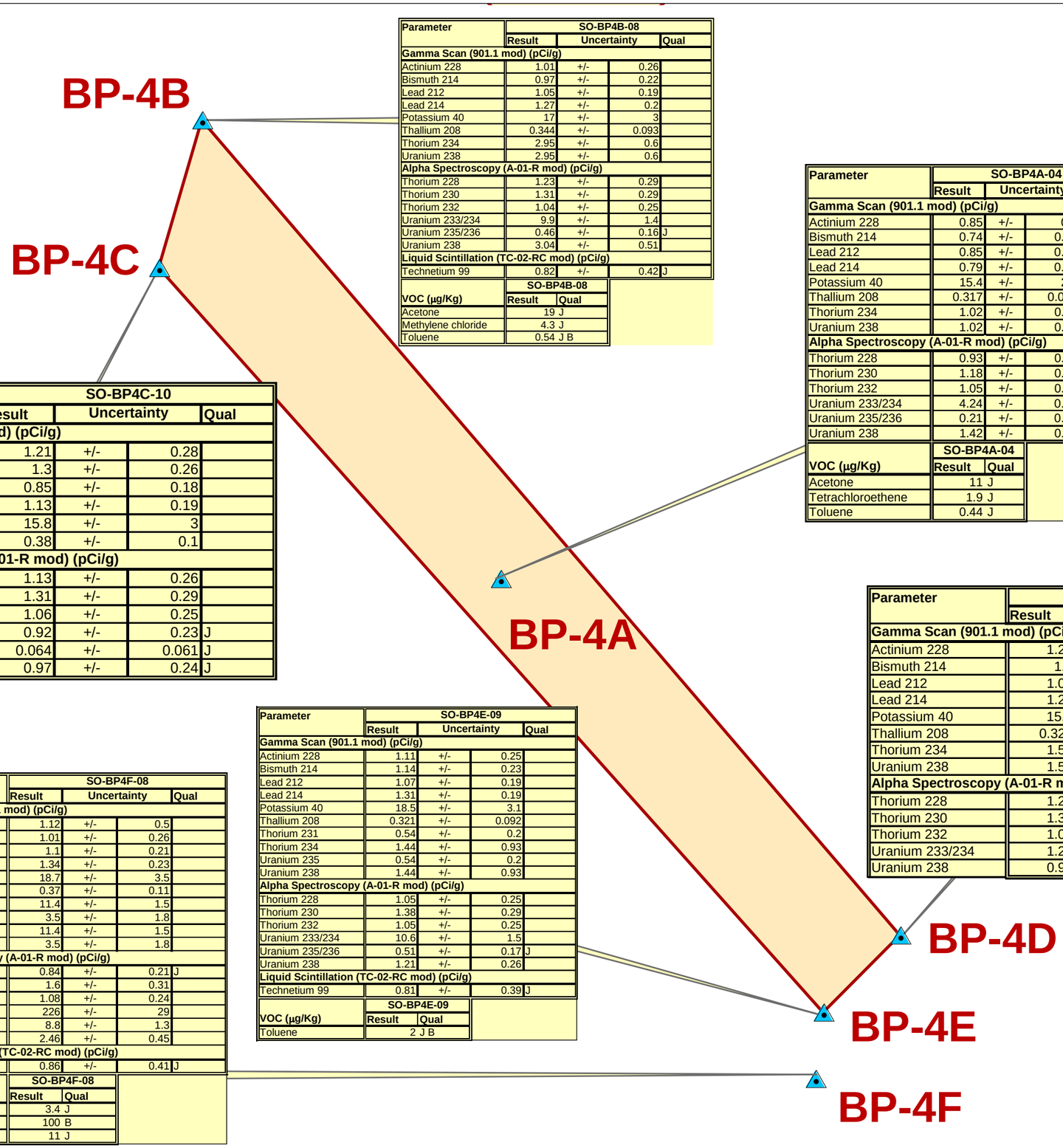
0 10 20 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 2
LEACHATE DATA

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-7	Figure 3-7



Parameter	SO-BP4B-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.01	+/-	0.26	
Bismuth 214	0.97	+/-	0.22	
Lead 212	1.05	+/-	0.19	
Lead 214	1.27	+/-	0.2	
Potassium 40	17	+/-	3	
Thallium 208	0.344	+/-	0.093	
Thorium 234	2.95	+/-	0.6	
Uranium 238	2.95	+/-	0.6	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.23	+/-	0.29	
Thorium 230	1.31	+/-	0.29	
Thorium 232	1.04	+/-	0.25	
Uranium 233/234	9.9	+/-	1.4	
Uranium 235/236	0.46	+/-	0.16	J
Uranium 238	3.04	+/-	0.51	
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	0.82	+/-	0.42	J

VOC (µg/Kg)	SO-BP4B-08	
	Result	Qual
Acetone	19	J
Methylene chloride	4.3	J
Toluene	0.54	J B

Parameter	SO-BP4A-04			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.85	+/-	0.2	
Bismuth 214	0.74	+/-	0.16	
Lead 212	0.85	+/-	0.15	
Lead 214	0.79	+/-	0.14	
Potassium 40	15.4	+/-	2.6	
Thallium 208	0.317	+/-	0.086	
Thorium 234	1.02	+/-	0.32	
Uranium 238	1.02	+/-	0.32	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.93	+/-	0.23	J
Thorium 230	1.18	+/-	0.27	
Thorium 232	1.05	+/-	0.25	
Uranium 233/234	4.24	+/-	0.71	
Uranium 235/236	0.21	+/-	0.11	J
Uranium 238	1.42	+/-	0.32	

VOC (µg/Kg)	SO-BP4A-04	
	Result	Qual
Acetone	11	J
Tetrachloroethene	1.9	J
Toluene	0.44	J

Parameter	SO-BP4C-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.21	+/-	0.28	
Bismuth 214	1.3	+/-	0.26	
Lead 212	0.85	+/-	0.18	
Lead 214	1.13	+/-	0.19	
Potassium 40	15.8	+/-	3	
Thallium 208	0.38	+/-	0.1	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.13	+/-	0.26	
Thorium 230	1.31	+/-	0.29	
Thorium 232	1.06	+/-	0.25	
Uranium 233/234	0.92	+/-	0.23	J
Uranium 235/236	0.064	+/-	0.061	J
Uranium 238	0.97	+/-	0.24	J

Parameter	SO-BP4D-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.23	+/-	0.27	
Bismuth 214	1.1	+/-	0.22	
Lead 212	1.09	+/-	0.19	
Lead 214	1.25	+/-	0.19	
Potassium 40	15.6	+/-	2.8	
Thallium 208	0.326	+/-	0.09	
Thorium 234	1.51	+/-	0.91	
Uranium 238	1.51	+/-	0.91	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.29	+/-	0.3	
Thorium 230	1.36	+/-	0.31	
Thorium 232	1.07	+/-	0.27	
Uranium 233/234	1.23	+/-	0.28	
Uranium 238	0.94	+/-	0.23	J

Parameter	SO-BP4E-09			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.11	+/-	0.25	
Bismuth 214	1.14	+/-	0.23	
Lead 212	1.07	+/-	0.19	
Lead 214	1.31	+/-	0.19	
Potassium 40	18.5	+/-	3.1	
Thallium 208	0.321	+/-	0.092	
Thorium 231	0.54	+/-	0.2	
Thorium 234	1.44	+/-	0.93	
Uranium 235	0.54	+/-	0.2	
Uranium 238	1.44	+/-	0.93	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.05	+/-	0.25	
Thorium 230	1.38	+/-	0.29	
Thorium 232	1.05	+/-	0.25	
Uranium 233/234	10.6	+/-	1.5	
Uranium 235/236	0.51	+/-	0.17	J
Uranium 238	1.21	+/-	0.26	
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	0.81	+/-	0.39	J

VOC (µg/Kg)	SO-BP4E-09	
	Result	Qual
Toluene	2	J B

Parameter	SO-BP4F-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.12	+/-	0.5	
Bismuth 214	1.01	+/-	0.26	
Lead 212	1.1	+/-	0.21	
Lead 214	1.34	+/-	0.23	
Potassium 40	18.7	+/-	3.5	
Thallium 208	0.37	+/-	0.11	
Thorium 231	11.4	+/-	1.5	
Thorium 234	3.5	+/-	1.8	
Uranium 235	11.4	+/-	1.5	
Uranium 238	3.5	+/-	1.8	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.84	+/-	0.21	J
Thorium 230	1.6	+/-	0.31	
Thorium 232	1.08	+/-	0.24	
Uranium 233/234	226	+/-	29	
Uranium 235/236	8.8	+/-	1.3	
Uranium 238	2.46	+/-	0.45	
Liquid Scintillation (TC-02-RC mod) (pCi/g)				
Technetium 99	0.86	+/-	0.41	J

VOC (µg/Kg)	SO-BP4F-08	
	Result	Qual
Ethylbenzene	3.4	J
Toluene	100	B
Xylenes (total)	11	J

Legend

- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Burial Pit Area

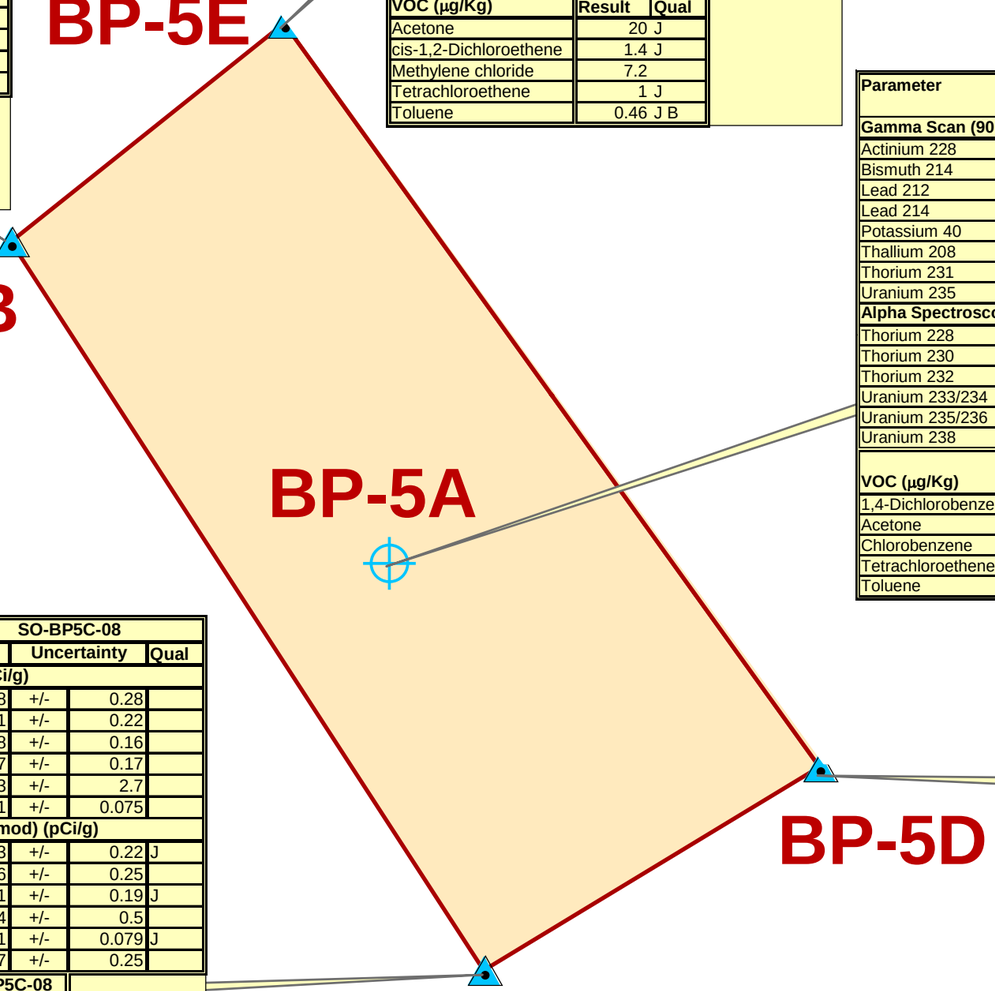
0 10 20 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 4

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

01/2007	DRAWING # Fig. 3-8	Figure 3-8



Parameter	SO-BP5B-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.94	+/-	0.31	
Bismuth 214	1.08	+/-	0.24	
Lead 212	0.9	+/-	0.19	
Lead 214	1.03	+/-	0.19	
Potassium 40	15.9	+/-	3	
Thallium 208	0.41	+/-	0.11	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.2	+/-	0.27	
Thorium 230	1.43	+/-	0.3	
Thorium 232	1.01	+/-	0.24	
Uranium 233/234	1.6	+/-	0.33	
Uranium 238	1.18	+/-	0.27	

VOC (µg/Kg)	SO-BP5B-10	
	Result	Qual
1,1-Dichloroethane	3.3	J
Acetone	14	J
Toluene	0.66	J B

Parameter	SO-BP5E-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.47	+/-	0.3	
Bismuth 214	1.04	+/-	0.22	
Lead 212	1.29	+/-	0.22	
Lead 214	1.33	+/-	0.2	
Potassium 40	18	+/-	3.1	
Thallium 208	0.5	+/-	0.12	
Thorium 234	2.3	+/-	1	
Uranium 238	2.3	+/-	1	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.08	+/-	0.28	
Thorium 230	1.13	+/-	0.28	
Thorium 232	0.97	+/-	0.26	J
Uranium 233/234	5.42	+/-	0.85	
Uranium 235/236	0.32	+/-	0.14	J
Uranium 238	1.54	+/-	0.32	

VOC (µg/Kg)	SO-BP5E-10	
	Result	Qual
Acetone	20	J
cis-1,2-Dichloroethene	1.4	J
Methylene chloride	7.2	
Tetrachloroethene	1	J
Toluene	0.46	J B

Parameter	WS-BP5A-07			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.39	+/-	0.32	
Bismuth 214	0.97	+/-	0.24	
Lead 212	1.09	+/-	0.21	
Lead 214	0.78	+/-	0.16	
Potassium 40	18.8	+/-	3.4	
Thallium 208	0.32	+/-	0.1	
Thorium 231	2.25	+/-	0.41	
Uranium 235	2.25	+/-	0.41	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.06	+/-	0.26	
Thorium 230	1.17	+/-	0.27	
Thorium 232	0.84	+/-	0.22	J
Uranium 233/234	59.3	+/-	8	
Uranium 235/236	2.5	+/-	0.51	
Uranium 238	1.74	+/-	0.37	

VOC (µg/Kg)	SO-BP5A-12	
	Result	Qual
1,4-Dichlorobenzene	6.4	
Acetone	40	
Chlorobenzene	19	
Tetrachloroethene	3.1	J
Toluene	0.79	J

Parameter	SO-BP5C-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.08	+/-	0.28	
Bismuth 214	1.01	+/-	0.22	
Lead 212	0.8	+/-	0.16	
Lead 214	0.97	+/-	0.17	
Potassium 40	14.3	+/-	2.7	
Thallium 208	0.201	+/-	0.075	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.83	+/-	0.22	J
Thorium 230	1.06	+/-	0.25	
Thorium 232	0.71	+/-	0.19	J
Uranium 233/234	2.84	+/-	0.5	
Uranium 235/236	0.11	+/-	0.079	J
Uranium 238	1.07	+/-	0.25	

VOC (µg/Kg)	SO-BP5C-08	
	Result	Qual
1,1-Dichloroethane	2.7	J
Acetone	23	J
Methylene chloride	4.2	J
Tetrachloroethene	4.3	J
Toluene	0.42	J B

Parameter	SO-BP5D-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1	+/-	0.31	
Bismuth 214	1.19	+/-	0.29	
Lead 212	1.11	+/-	0.22	
Lead 214	1.31	+/-	0.23	
Potassium 40	17.9	+/-	3.5	
Thallium 208	0.32	+/-	0.11	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.98	+/-	0.25	J
Thorium 230	1.14	+/-	0.27	
Thorium 232	1.1	+/-	0.26	
Uranium 233/234	0.94	+/-	0.24	J
Uranium 238	0.87	+/-	0.22	J

VOC (µg/Kg)	SO-BP5D-08	
	Result	Qual
1,1-Dichloroethane	3.1	J
Acetone	13	J
cis-1,2-Dichloroethene	2.6	J
Methylene chloride	19	
Tetrachloroethene	36	
Trichloroethene	3.7	J

N

Legend

Cabrera Burial Pit Boring

Cabrera Burial Pit Boring / Monitoring Well

Burial Pit Area

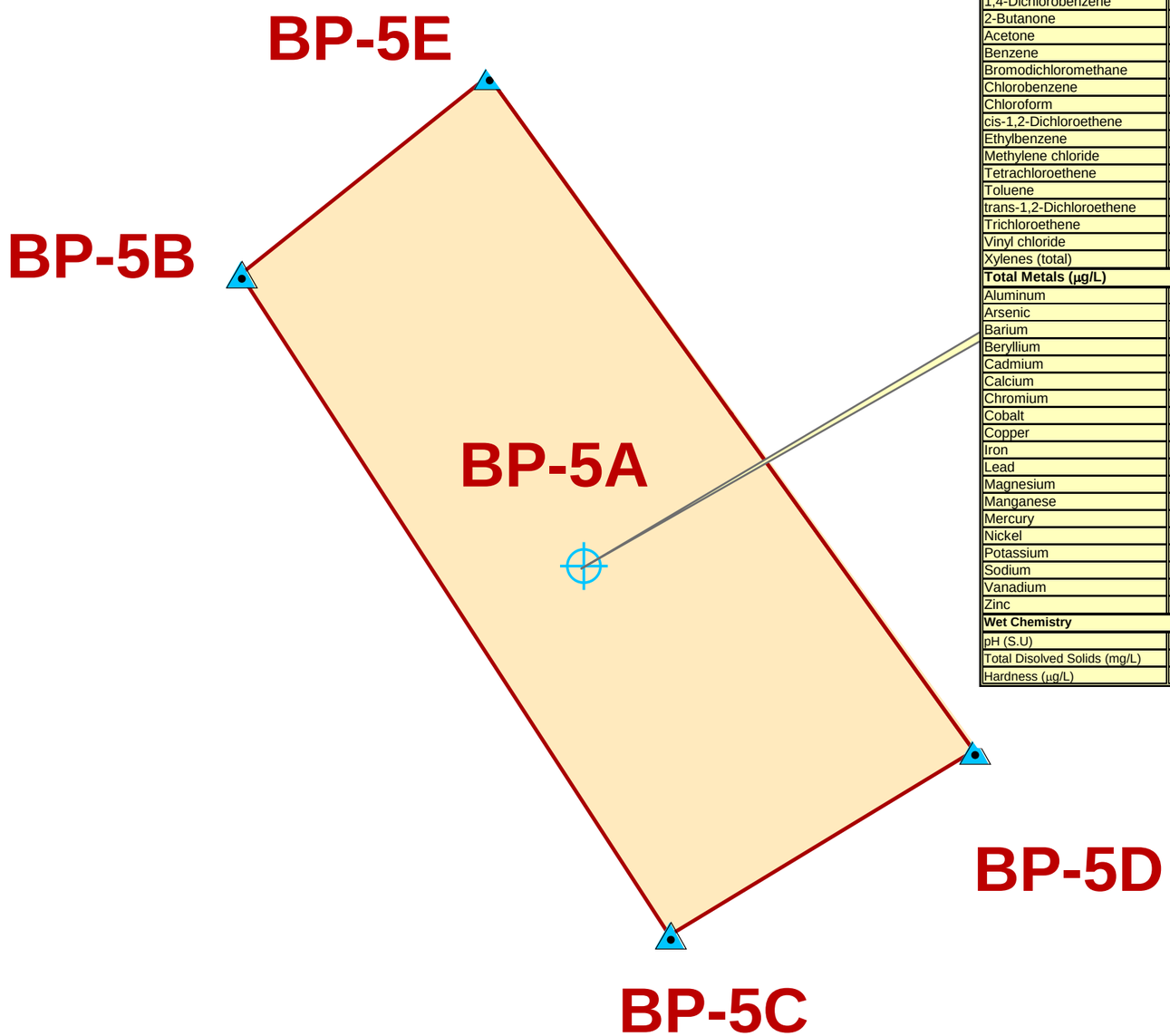
0 7.5 15 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 5

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-9	Figure 3-9



Parameter	GW-BP5A-XX			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/L)				
Lead 214	19	+/-	11	
Alpha Spectroscopy (A-01-R mod) (pCi/L)				
Thorium 228	0.38	+/-	0.19	J
Thorium 230	0.71	+/-	0.25	J
Thorium 232	0.19	+/-	0.13	J
Uranium 233/234	24.3	+/-	3.4	
Uranium 235/236	1.03	+/-	0.34	
Uranium 238	1.44	+/-	0.4	

VOC (µg/L)	GW-BP5A-XX Result	Qual
1,1-Dichloroethane	0.5	J
1,1-Dichloroethene	0.38	J
1,4-Dichlorobenzene	4.7	
2-Butanone	6.6	
Acetone	16	
Benzene	0.27	J
Bromodichloromethane	0.23	J
Chlorobenzene	42	
Chloroform	0.87	J
cis-1,2-Dichloroethene	8.3	
Ethylbenzene	0.33	J
Methylene chloride	0.88	J
Tetrachloroethene	4.8	B
Toluene	1	
trans-1,2-Dichloroethene	0.35	J
Trichloroethene	11	
Vinyl chloride	5.3	
Xylenes (total)	1	J
Total Metals (µg/L)		
Aluminum	19100	N
Arsenic	5.4	B
Barium	238	
Beryllium	1	B
Cadmium	1.2	B
Calcium	40400	
Chromium	28.4	
Cobalt	10.9	B
Copper	18.5	B
Iron	17800	N
Lead	19.7	
Magnesium	21200	
Manganese	2530	N
Mercury	0.11	B
Nickel	18.5	B
Potassium	6230	
Sodium	96100	
Vanadium	45	B
Zinc	83.9	
Wet Chemistry		
pH (S.U)	6.7	
Total Disolved Solids (mg/L)	450	
Hardness (µg/L)	188000	

N

Legend

- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Burial Pit Area

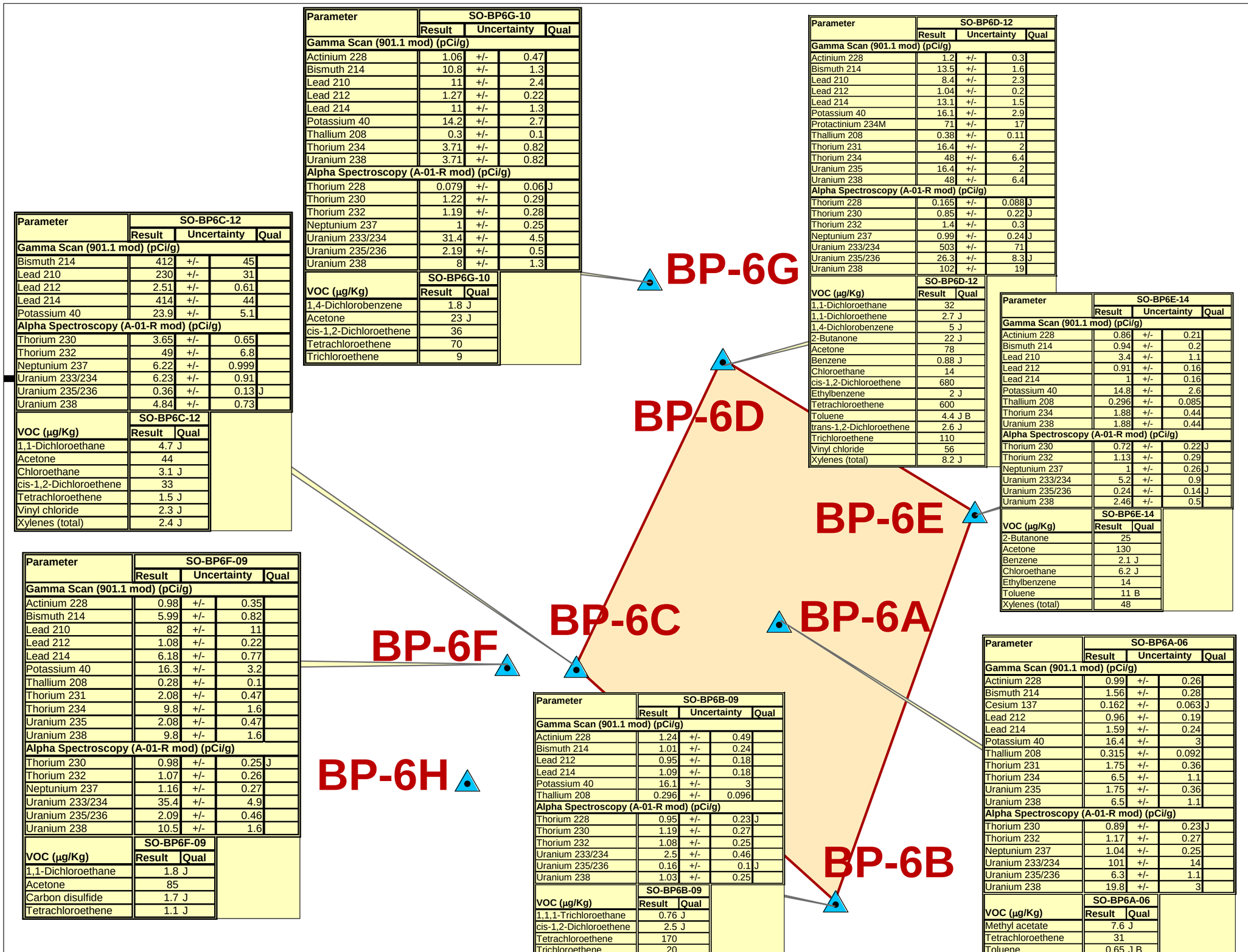
0 7.5 15 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 5
LEACHATE DATA

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-10	Figure 3-10



Parameter	SO-BP6G-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.06	+/-	0.47	
Bismuth 214	10.8	+/-	1.3	
Lead 210	11	+/-	2.4	
Lead 212	1.27	+/-	0.22	
Lead 214	11	+/-	1.3	
Potassium 40	14.2	+/-	2.7	
Thallium 208	0.3	+/-	0.1	
Thorium 234	3.71	+/-	0.82	
Uranium 238	3.71	+/-	0.82	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.079	+/-	0.06	J
Thorium 230	1.22	+/-	0.29	
Thorium 232	1.19	+/-	0.28	
Neptunium 237	1	+/-	0.25	
Uranium 233/234	31.4	+/-	4.5	
Uranium 235/236	2.19	+/-	0.5	
Uranium 238	8	+/-	1.3	

VOC (µg/Kg)	SO-BP6G-10	
	Result	Qual
1,4-Dichlorobenzene	1.8	J
Acetone	23	J
cis-1,2-Dichloroethene	36	
Tetrachloroethene	70	
Trichloroethene	9	

Parameter	SO-BP6D-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.2	+/-	0.3	
Bismuth 214	13.5	+/-	1.6	
Lead 210	8.4	+/-	2.3	
Lead 212	1.04	+/-	0.2	
Lead 214	13.1	+/-	1.5	
Potassium 40	16.1	+/-	2.9	
Protactinium 234M	71	+/-	17	
Thallium 208	0.38	+/-	0.11	
Thorium 231	16.4	+/-	2	
Thorium 234	48	+/-	6.4	
Uranium 235	16.4	+/-	2	
Uranium 238	48	+/-	6.4	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.165	+/-	0.088	J
Thorium 230	0.85	+/-	0.22	J
Thorium 232	1.4	+/-	0.3	
Neptunium 237	0.99	+/-	0.24	J
Uranium 233/234	503	+/-	71	
Uranium 235/236	26.3	+/-	8.3	J
Uranium 238	102	+/-	19	

VOC (µg/Kg)	SO-BP6D-12	
	Result	Qual
1,1-Dichloroethane	32	
1,1-Dichloroethene	2.7	J
1,4-Dichlorobenzene	5	J
2-Butanone	22	J
Acetone	78	
Benzene	0.88	J
Chloroethane	14	
cis-1,2-Dichloroethene	680	
Ethylbenzene	2	J
Tetrachloroethene	600	
Toluene	4.4	J B
trans-1,2-Dichloroethene	2.6	J
Trichloroethene	110	
Vinyl chloride	56	
Xylenes (total)	8.2	J

Parameter	SO-BP6E-14			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.86	+/-	0.21	
Bismuth 214	0.94	+/-	0.2	
Lead 210	3.4	+/-	1.1	
Lead 212	0.91	+/-	0.16	
Lead 214	1	+/-	0.16	
Potassium 40	14.8	+/-	2.6	
Thallium 208	0.296	+/-	0.085	
Thorium 234	1.88	+/-	0.44	
Uranium 238	1.88	+/-	0.44	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 230	0.72	+/-	0.22	J
Thorium 232	1.13	+/-	0.29	
Neptunium 237	1	+/-	0.26	J
Uranium 233/234	5.2	+/-	0.9	
Uranium 235/236	0.24	+/-	0.14	J
Uranium 238	2.46	+/-	0.5	

VOC (µg/Kg)	SO-BP6E-14	
	Result	Qual
2-Butanone	25	
Acetone	130	
Benzene	2.1	J
Chloroethane	6.2	J
Ethylbenzene	14	
Toluene	11	B
Xylenes (total)	48	

Parameter	SO-BP6C-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Bismuth 214	412	+/-	45	
Lead 210	230	+/-	31	
Lead 212	2.51	+/-	0.61	
Lead 214	414	+/-	44	
Potassium 40	23.9	+/-	5.1	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 230	3.65	+/-	0.65	
Thorium 232	49	+/-	6.8	
Neptunium 237	6.22	+/-	0.999	
Uranium 233/234	6.23	+/-	0.91	
Uranium 235/236	0.36	+/-	0.13	J
Uranium 238	4.84	+/-	0.73	

VOC (µg/Kg)	SO-BP6C-12	
	Result	Qual
1,1-Dichloroethane	4.7	J
Acetone	44	
Chloroethane	3.1	J
cis-1,2-Dichloroethene	33	
Tetrachloroethene	1.5	J
Vinyl chloride	2.3	J
Xylenes (total)	2.4	J

Parameter	SO-BP6F-09			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.98	+/-	0.35	
Bismuth 214	5.99	+/-	0.82	
Lead 210	82	+/-	11	
Lead 212	1.08	+/-	0.22	
Lead 214	6.18	+/-	0.77	
Potassium 40	16.3	+/-	3.2	
Thallium 208	0.28	+/-	0.1	
Thorium 231	2.08	+/-	0.47	
Thorium 234	9.8	+/-	1.6	
Uranium 235	2.08	+/-	0.47	
Uranium 238	9.8	+/-	1.6	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 230	0.98	+/-	0.25	J
Thorium 232	1.07	+/-	0.26	
Neptunium 237	1.16	+/-	0.27	
Uranium 233/234	35.4	+/-	4.9	
Uranium 235/236	2.09	+/-	0.46	
Uranium 238	10.5	+/-	1.6	

VOC (µg/Kg)	SO-BP6F-09	
	Result	Qual
1,1-Dichloroethane	1.8	J
Acetone	85	
Carbon disulfide	1.7	J
Tetrachloroethene	1.1	J

Parameter	SO-BP6B-09			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.24	+/-	0.49	
Bismuth 214	1.01	+/-	0.24	
Lead 212	0.95	+/-	0.18	
Lead 214	1.09	+/-	0.18	
Potassium 40	16.1	+/-	3	
Thallium 208	0.296	+/-	0.096	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.95	+/-	0.23	J
Thorium 230	1.19	+/-	0.27	
Thorium 232	1.08	+/-	0.25	
Uranium 233/234	2.5	+/-	0.46	
Uranium 235/236	0.16	+/-	0.1	J
Uranium 238	1.03	+/-	0.25	

VOC (µg/Kg)	SO-BP6B-09	
	Result	Qual
1,1,1-Trichloroethane	0.76	J
cis-1,2-Dichloroethene	2.5	J
Tetrachloroethene	170	
Trichloroethene	20	

Parameter	SO-BP6A-06			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.99	+/-	0.26	
Bismuth 214	1.56	+/-	0.28	
Cesium 137	0.162	+/-	0.063	J
Lead 212	0.96	+/-	0.19	
Lead 214	1.59	+/-	0.24	
Potassium 40	16.4	+/-	3	
Thallium 208	0.315	+/-	0.092	
Thorium 231	1.75	+/-	0.36	
Thorium 234	6.5	+/-	1.1	
Uranium 235	1.75	+/-	0.36	
Uranium 238	6.5	+/-	1.1	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 230	0.89	+/-	0.23	J
Thorium 232	1.17	+/-	0.27	
Neptunium 237	1.04	+/-	0.25	
Uranium 233/234	101	+/-	14	
Uranium 235/236	6.3	+/-	1.1	
Uranium 238	19.8	+/-	3	

VOC (µg/Kg)	SO-BP6A-06	
	Result	Qual
Methyl acetate	7.6	J
Tetrachloroethene	31	
Toluene	0.65	J B

Legend

Cabrera Burial Pit Boring

Burial Pit Area

0 6 12 Feet

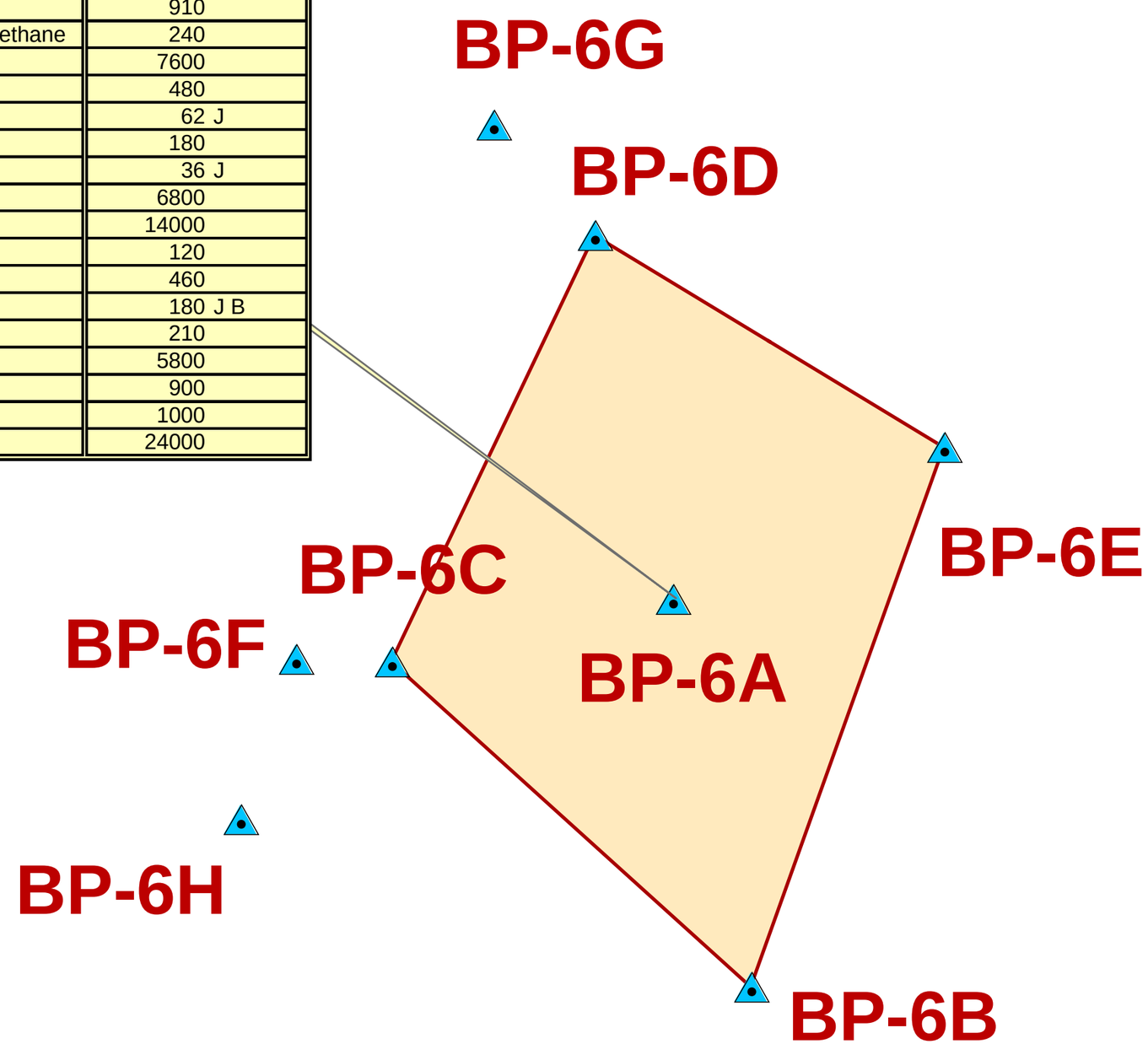
CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 6

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	Drawing # 3-11	Figure 3-11

Parameter	VA-BP6A-XX	
	Result	Qual
VOC (ppb/V)		
1,1,1-Trichloroethane	910	
1,1,2-Trichloro-1,2,2-trifluoroethane	240	
1,1-Dichloroethane	7600	
1,1-Dichloroethene	480	
1,2,4-Trimethylbenzene	62	J
1,4-Dichlorobenzene	180	
Benzene	36	J
Chloroethane	6800	
cis-1,2-Dichloroethene	14000	
Ethylbenzene	120	
m-Xylene & p-Xylene	460	
Methylene chloride	180	J B
o-Xylene	210	
Tetrachloroethene	5800	
Toluene	900	
Trichloroethene	1000	
Vinyl chloride	24000	



Legend

Cabrera Burial Pit Boring

Burial Pit Area

0 6 12 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 6
SOIL VAPOR DATA

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

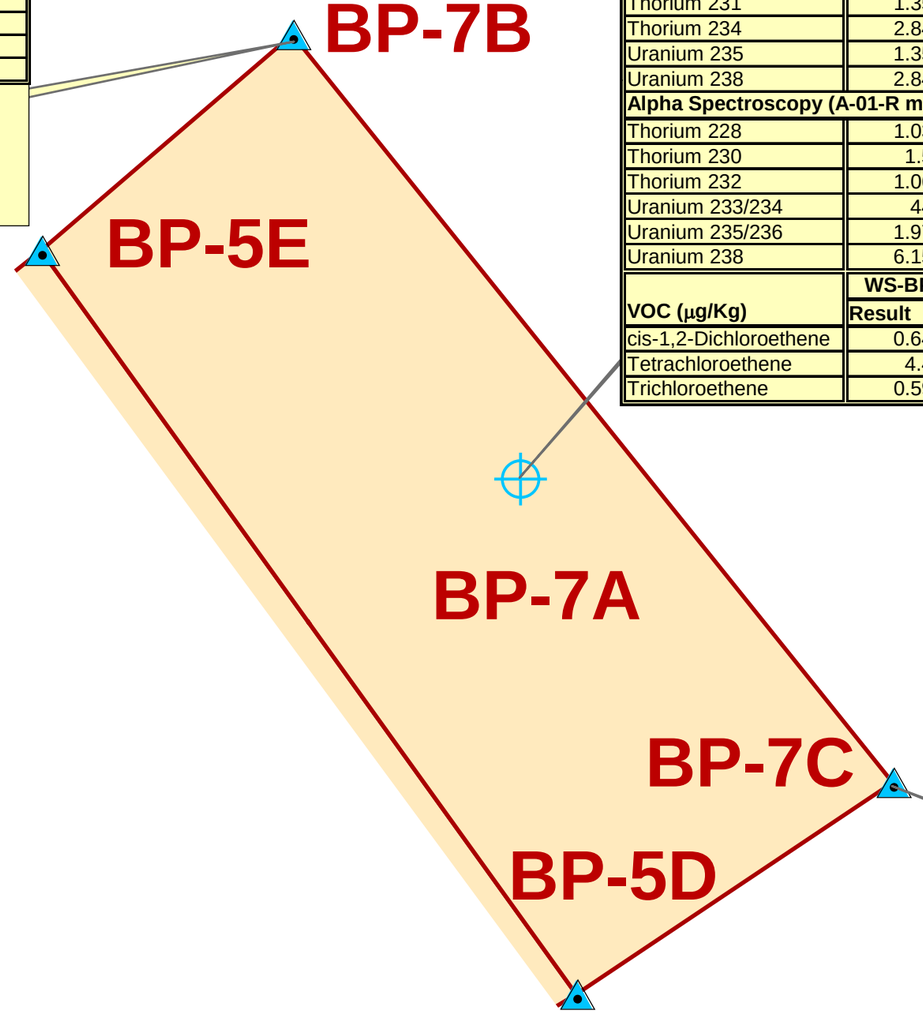
03/2007	DRAWING # Fig. 3-12	Figure 3-12

Parameter	SO-BP7B-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	0.73	+/-	0.21	
Bismuth 214	1.03	+/-	0.22	
Lead 212	1.08	+/-	0.19	
Lead 214	1.14	+/-	0.18	
Potassium 40	17.6	+/-	3	
Thallium 208	0.269	+/-	0.084	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.86	+/-	0.25	J
Thorium 230	1.01	+/-	0.24	
Thorium 232	1.07	+/-	0.25	
Uranium 233/234	4.2	+/-	0.69	
Uranium 235/236	0.159	+/-	0.096	J
Uranium 238	0.87	+/-	0.23	J

VOC (µg/Kg)	SO-BP7B-10	
	Result	Qual
1,4-Dichlorobenzene	1.7	J
Acetone	21	J
cis-1,2-Dichloroethene	4	J
Xylenes (total)	2.6	J

Parameter	WS-BP7A-08			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.23	+/-	0.33	
Bismuth 214	1.45	+/-	0.33	
Lead 212	1.41	+/-	0.27	
Lead 214	1.33	+/-	0.24	
Potassium 40	19.8	+/-	3.8	
Thallium 208	0.35	+/-	0.12	
Thorium 231	1.35	+/-	0.35	
Thorium 234	2.84	+/-	0.77	
Uranium 235	1.35	+/-	0.35	
Uranium 238	2.84	+/-	0.77	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.03	+/-	0.29	
Thorium 230	1.5	+/-	0.36	
Thorium 232	1.06	+/-	0.29	
Uranium 233/234	44	+/-	5.8	
Uranium 235/236	1.97	+/-	0.41	
Uranium 238	6.15	+/-	0.95	

VOC (µg/Kg)	WS-BP7A-06	
	Result	Qual
cis-1,2-Dichloroethene	0.64	J
Tetrachloroethene	4.4	J
Trichloroethene	0.59	J



Parameter	SO-BP7C-12			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.23	+/-	0.52	
Bismuth 214	1.12	+/-	0.24	
Lead 212	0.99	+/-	0.19	
Lead 214	1.21	+/-	0.19	
Potassium 40	19	+/-	3.3	
Thallium 208	0.45	+/-	0.11	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	1.12	+/-	0.26	
Thorium 230	1.3	+/-	0.28	
Thorium 232	1.08	+/-	0.25	
Uranium 233/234	0.99	+/-	0.24	J
Uranium 235/236	0.077	+/-	0.067	J
Uranium 238	0.82	+/-	0.22	J

VOC (µg/Kg)	SO-BP7C-12	
	Result	Qual
cis-1,2-Dichloroethene	3.4	J
Tetrachloroethene	21	
Trichloroethene	4.2	J

N

Legend

- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Burial Pit Area

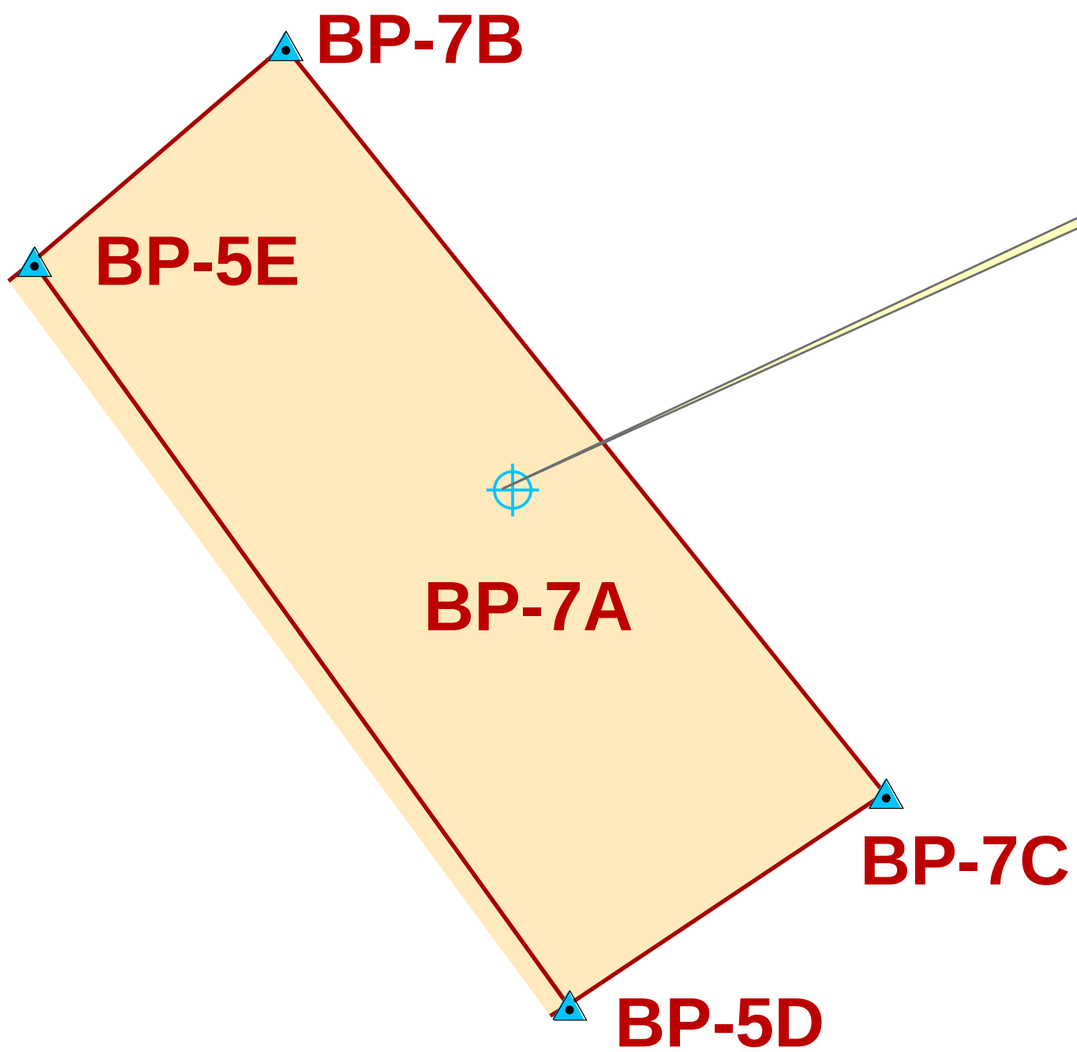
0 7.5 15 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 7

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-13	Figure 3-13



Parameter	GW-BP7A-XX			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/L)				
Thallium 208	15.1	+/-	8.2	
Thorium 231	419	+/-	73	
Thorium 234	348	+/-	91	
Uranium 235	419	+/-	73	
Uranium 238	348	+/-	91	
Alpha Spectroscopy (A-01-R mod) (pCi/L)				
Thorium 230	0.14	+/-	0.12	J
Neptunium 237	8.1	+/-	2.7	
Uranium 233/234	7900	+/-	1300	
Uranium 235/236	310	+/-	170	
Uranium 238	270	+/-	160	

VOC (µg/L)	GW-BP7A-XX Result	Qual
1,1,1-Trichloroethane	250	D
1,1,2-Trichloro-1,2,2-trifluoroethane	21	
1,1-Dichloroethane	40	
1,1-Dichloroethene	6.9	
1,3-Dichlorobenzene	5	
1,4-Dichlorobenzene	5.2	
Acetone	6	
Carbon disulfide	0.21	J
Chloroform	0.5	J
cis-1,2-Dichloroethene	3300	D
Ethylbenzene	6.9	
Tetrachloroethene	35000	D
Toluene	5.6	
trans-1,2-Dichloroethene	12	
Trichloroethene	610	D
Vinyl chloride	960	D
Xylenes (total)	31	
Total Metals (µg/L)		
Aluminum	347000	N
Antimony	18.1	BN
Arsenic	134	
Barium	2620	
Beryllium	201	
Cadmium	99.4	
Calcium	82700	
Chromium	1170	
Cobalt	234	B
Copper	2900	
Iron	933000	N
Lead	3140	
Magnesium	58900	
Manganese	11300	N
Mercury	5.1	
Nickel	2650	
Potassium	30100	
Selenium	45.5	B
Sodium	83100	
Thallium	47.5	B
Vanadium	572	
Zinc	13900	
Wet Chemistry		
pH (S.U)	6.2	
Total Disolved Solids (mg/L)	443	
Hardness (µg/L)	449000	

N

Legend

- Cabrera Burial Pit Boring
- Cabrera Burial Pit Boring / Monitoring Well
- Burial Pit Area

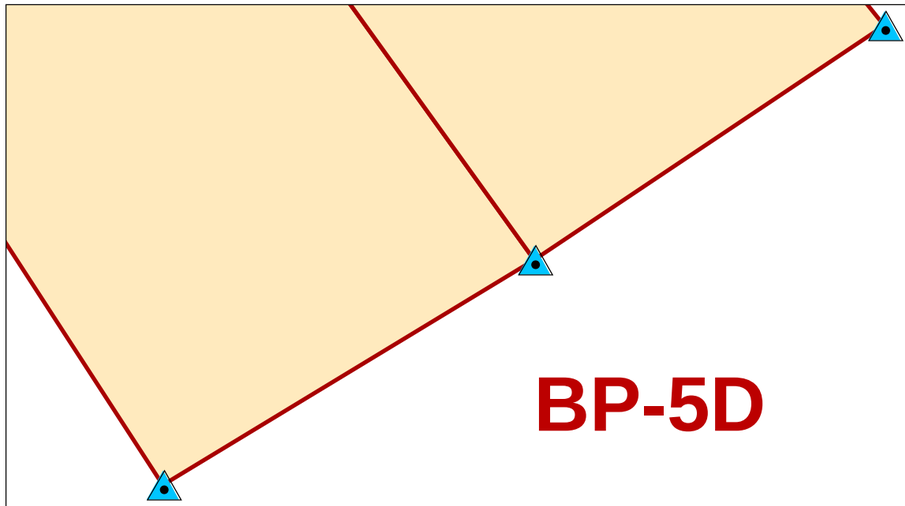
0 7.5 15 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 7
LEACHATE DATA

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-14	Figure 3-14



BP-8A

Parameter	WS-BP8A-10			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.19	+/-	0.23	
Bismuth 214	1.06	+/-	0.23	
Lead 212	1.01	+/-	0.19	
Lead 214	1.02	+/-	0.18	
Potassium 40	16	+/-	2.9	
Thallium 208	0.343	+/-	0.094	
Thorium 231	2.92	+/-	0.46	
Uranium 235	2.92	+/-	0.46	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.219	+/-	0.095	J
Thorium 230	1.07	+/-	0.28	
Thorium 232	1.21	+/-	0.29	
Neptunium 237	1.15	+/-	0.28	
Uranium 233/234	236	+/-	32	
Uranium 235/236	9.8	+/-	1.6	
Uranium 238	2.92	+/-	0.57	

VOC (µg/Kg)	WS-BP8A-08	
	Result	Qual
1,1-Dichloroethane	3.1	J
1,4-Dichlorobenzene	250	
Acetone	19	J
Carbon disulfide	0.98	J
cis-1,2-Dichloroethene	1.5	J
Trichloroethene	9.5	

N

Legend

Cabrera Burial Pit Boring

Burial Pit Area

0 7 14 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 8

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	Drawing # 3-15	Figure 3-15

Parameter	SO-BP9A-16			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/g)				
Actinium 228	1.13	+/-	0.3	
Bismuth 214	0.87	+/-	0.22	
Lead 212	0.82	+/-	0.17	
Lead 214	0.82	+/-	0.16	
Potassium 40	14.5	+/-	2.7	
Thallium 208	0.279	+/-	0.087	
Thorium 234	3.27	+/-	0.68	
Uranium 238	3.27	+/-	0.68	
Alpha Spectroscopy (A-01-R mod) (pCi/g)				
Thorium 228	0.082	+/-	0.06	J
Thorium 230	0.95	+/-	0.26	J
Thorium 232	1.42	+/-	0.32	
Neptunium 237	1	+/-	0.26	J
Uranium 233/234	8.2	+/-	1.3	
Uranium 235/236	0.52	+/-	0.21	J
Uranium 238	4.06	+/-	0.75	

VOC (µg/Kg)	SO-BP9A-16	
	Result	Qual
1,1-Dichloroethene	1.8	J
Acetone	19	J
cis-1,2-Dichloroethene	350	
Tetrachloroethene	1400	
trans-1,2-Dichloroethene	4.6	J
Trichloroethene	560	
Vinyl chloride	13	

BP-9A

BP-6D

BP-6E

Parameter	GW-BP9A-XX			
	Result	Uncertainty		Qual
Gamma Scan (901.1 mod) (pCi/L)				
Lead 214	30	+/-	11	
Potassium 40	246	+/-	91	
Alpha Spectroscopy (A-01-R mod) (pCi/L)				
Thorium 230	0.33	+/-	0.2	J
Uranium 233/234	67.4	+/-	9.1	
Uranium 235/236	3.49	+/-	0.74	
Uranium 238	26.2	+/-	3.7	
Liquid Scintillation (TC-02-RC mod) (pCi/L)				
Technetium 99	10.1	+/-	2.2	

VOC (µg/L)	GW-BP9A-XX	
	Result	Qual
1,1,2,2-Tetrachloroethane	0.39	J
1,1,2-Trichloro-1,2,2-trifluoroethane	13	
1,1-Dichloroethane	6.1	
1,1-Dichloroethene	11	
Benzene	0.19	J
Chloroethane	0.42	J
Chloroform	0.21	J
cis-1,2-Dichloroethene	2500	D
Isopropylbenzene	0.78	J
Tetrachloroethene	4800	D
Toluene	0.4	J
trans-1,2-Dichloroethene	39	
Trichloroethene	2700	D
Vinyl chloride	190	D
Xylenes (total)	2.9	J
Total Metals (µg/L)		
Aluminum	342000	N
Arsenic	82.9	
Barium	3030	
Beryllium	18.8	B
Cadmium	7.7	B
Calcium	244000	
Chromium	432	
Cobalt	178	B
Copper	298	
Iron	319000	N
Lead	474	
Magnesium	156000	
Manganese	14400	N
Mercury	0.18	B
Nickel	393	
Potassium	34200	
Sodium	25300	
Thallium	14	B
Vanadium	642	
Zinc	914	
Wet Chemistry		
pH (S.U)	6.8	
Total Disolved Solids (mg/L)	568	
Hardness (µg/L)	1200000	

Legend

Cabrera Burial Pit Boring

Burial Pit Area

0 5 10 Feet

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

BURIAL PIT 9

WESTINGHOUSE ELECTRIC CO.
HEMATITE SITE
FESTUS, MISSOURI

03/2007	DRAWING # Fig. 3-16	Figure 3-16

APPENDICES

APPENDIX A: BORING LOGS

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL					60		1.5
						60		1.5
			SS1	67	80	60	4230	1.5
						60		1.5
							4893	
						60		2
			SS2	62	80	60	5008	2
						60		2
							4926	
						100		1
5			SS3	37	80	60	4856	1
						60		1
							4714	
						60		1
			SS4	27	80	60	4671	1
						60		1
							5239	
	Wet, gray, silty CLAY with plastic debris - CL					60		1
			SS5	18	80	60	10527	1
						140		1
						80		
10							5122	
						60		1
			SS6	44	100		4651	1
						60		1
							4869	
						60		1
			SS7	52	20		4896	1
						60		1
							4675	
								1
15	Mottled, gray CLAY - CH metal		SS8	56	80	100		1
								1
			SS9	40	100			
	Boring terminated at 18 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

67

62

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 14 feet submitted for radiological analysis.
Sample at 12 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-1A

Project No. 0700204.41ID

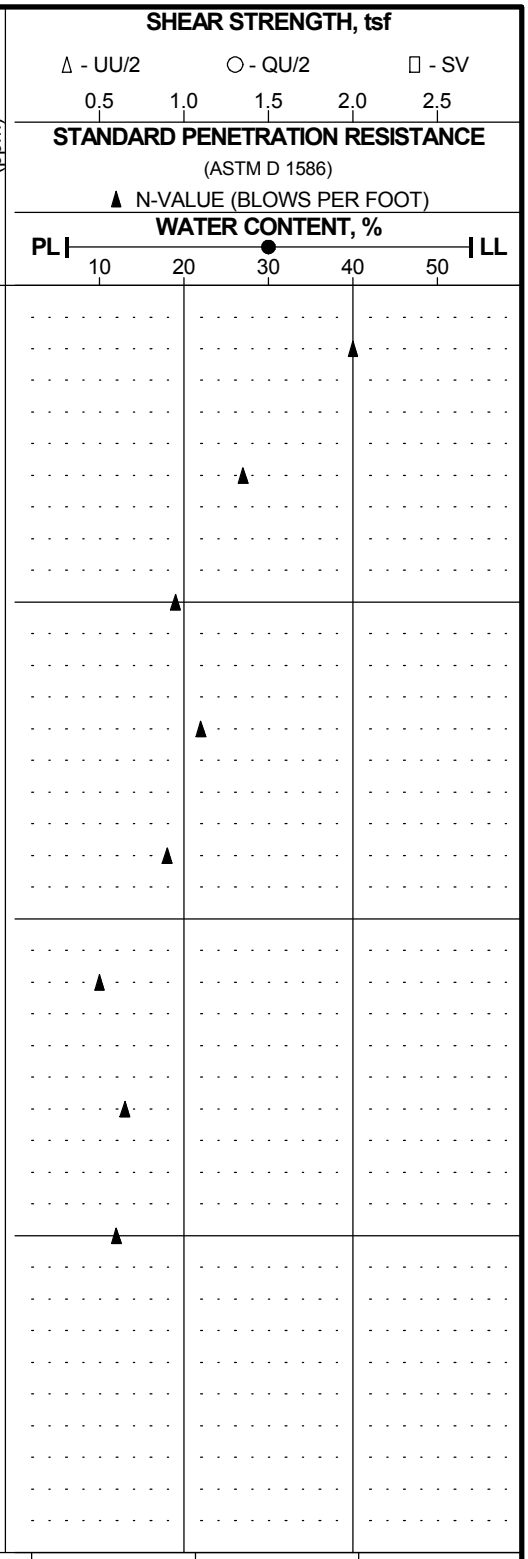
NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Moist, brown, clayey SILT - ML					60		1
			SS1	40	10	60		
						60		1
						60		1
			SS2	27	80	60		1
						60		1
						60		1
						60		1
5			SS3	19	75	60		1
						60		1
						60		1
						60		1
			SS4	22	80	60		1
						60		1
						60		10
	Moist, brown to gray, silty CLAY - CL					60		10
			SS5	18	90	80		10
						60		10
10						60		10
						60		10
			SS6	10	80	60		10
						60		10
						60		2
						80		2
			SS7	13	95	60		2
						60		2
15			SS8	12	95			
	Boring terminated at 16 feet.							



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 9 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-1B

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Dry, brown, clayey SILT - ML				60	0
					60	0
		SS1	57	95	60	0
					60	0
	with gravel				60	1
					60	1
		SS2	44	75	60	1
					60	1
					60	1
					100	1
5		SS3	28	75	60	1
					60	1
					60	1
	Moist, mottled brown, silty CLAY with gravel - CL				60	1
		SS4	25	90	60	1
					60	1
					60	1
					60	1
		SS5	12	100	60	1
					60	1
10					60	1
					60	1
		SS6	10	95	60	1
					60	1
						1
	Moist, mottled gray CLAY - CH					1
		SS7	22	100		1
						1
	Boring terminated at 14 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-1C

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					60		1
						60		1
			SS1	27	80	60		1
						60		1
						60		1
						60		1
			SS2	21	100	60		1
						60		1
						60		1
	Brown, silty CLAY - CL					60		1
5			SS3	21	100	60		1
						60		1
								1
						60		1
			SS4	17	100	60		1
						60		1
						60		2
						80		1
			SS5	12	100	100		2
						60		1
10						60		1
						80		1
			SS6	12	100	150		1
						80		1
						60		1
	Gray CLAY - CH					60		1
			SS7	28	100	60		1
						60		1
	Boring terminated at 14 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-1D

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					60		0
						60		1
			SS1	21	100	60	4465	0
						60		0
						60	4926	0
						70		1
			SS2	21	80	80	5688	0
						60		0
						50	6900	1
						50		0
5			SS3	8	40	50	14846	0
						50		1
							8624	0
	Brown, silty CLAY - CL					60		0
			SS4	7	100	50	4893	1
						50		0
						60	4758	1
						50		1
			SS5	12	100	60	4690	0
						60		0
10	Mottled gray CLAY - CH						4716	
			SS6	18				
	Boring terminated at 12 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 7 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-1E

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					50		0
						50		0
			SS1	13	90	50		0
						50		0
	Brown, silty CLAY - CL					50		0
						60		0
	Brown, clayey SILT - ML		SS2	23	90	60		0
						60		0
						50		0
						60		0
5			SS3	22	100	70		0
	Brown, silty CLAY - CL					60		0
	Mottled gray CLAY - CH		SS4	20	100			
	Boring terminated at 8 feet.							
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 6 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-1F

Project No. 0700204.41ID

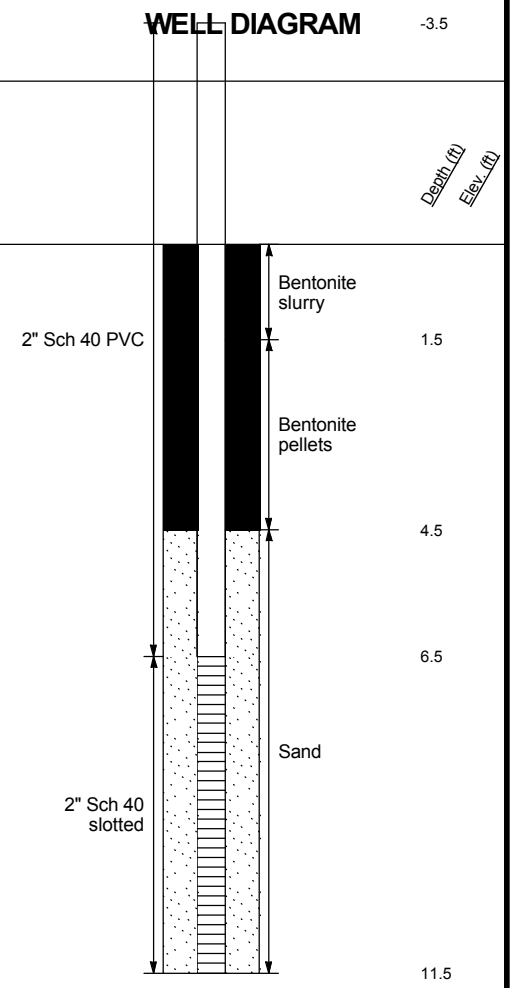
NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Grass, brown CLAY - CH	SS1	15	95	50	2580 4780	0
	Black gravel (pea size), brown CLAY - CH	SS2	17	98	50	5069 5043	0
5	Brown, clayey SILT - ML	SS3	14		50	5078 7008 2455	0
	SAND, small gravel, moist to wet, waste plastic bag	SS4	17		50		0
	Saturated CLAY, waste, metal drum - CH	SS5	18	80	50		0
10	Tan CLAY, saturated, mottled - CH	SS6	14	80	50		0
		SS7					
15	Boring terminated at 14 feet.						

WELL DIAGRAM



GROUNDWATER DATA

ENCOUNTERED AT 6 FEET ▽

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 11 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/10/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-2A

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	SILT and silty CLAY - ML and CL	SS1	17	90	50	0
	Organic matter with CLAY					
	Brown, clayey SILT - ML	SS2	10	80	50	0
5	Brown, silty CLAY - CL	SS3	58	100	50	0
	Brown CLAY - CH	SS4	21	100	50	2.5
	moist	SS5	17	100	50	1.5
10		SS6	12	100	50	1.3
	Boring terminated at 12 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL ● LL

10 20 30 40 50

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological analysis.
Sample at 8 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm
PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-2B

Project No. 0700204.41ID

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Gravel		SS1	112	90	50		0.6
	Clayey SILT - ML Brown, silty CLAY, mottled - CL		SS2	44	85	50		0.8
5			SS3	16	95	50		1.7
			SS4	19	75	50		1.0
			SS5	16	85	50		2.1
10	moist		SS6	14	100	70		2.0
	saturated		SS7	15	100	50		1.5
15	dry		SS8	23	100	50		2.5
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

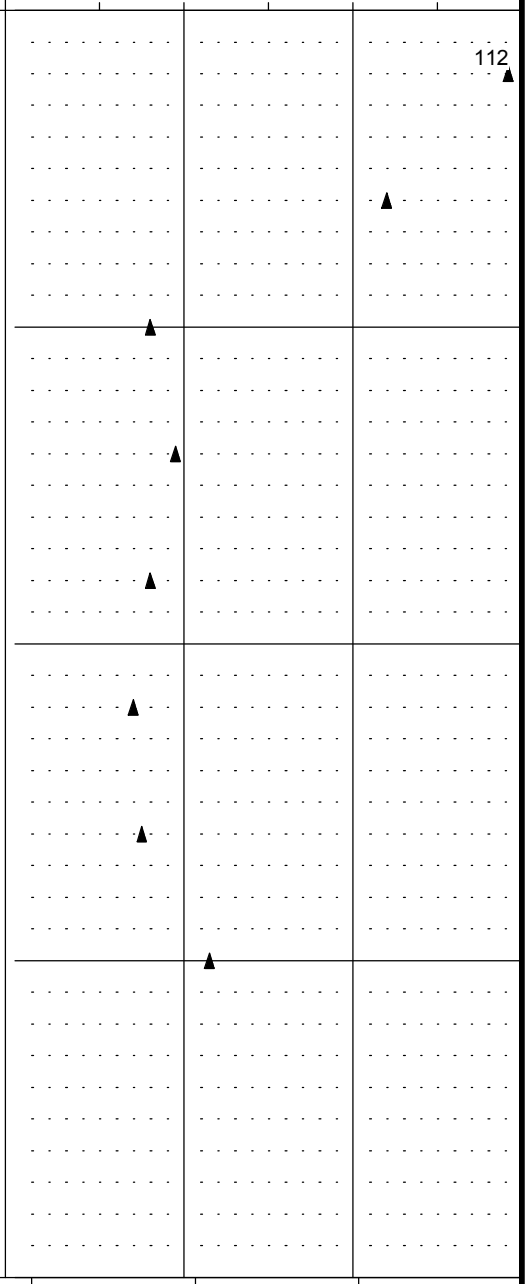
STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological analysis.
Sample at 16 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm
PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-2C

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/15/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL		SS1	16	90	50		0.8
			SS2	34	90	50		1.5
5			SS3	30	90	100		4.5
	Brown CLAY, with some mottling - CH		SS4	17	90	50		6.5
			SS5	11	100	50		11.5
10	wet	∇	SS6	10	100	50		15
			SS7	10	100	50		16.5
	Boring terminated at 14 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL ● LL

10 20 30 40 50

GROUNDWATER DATA

ENCOUNTERED AT 10 FEET ∇

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 5 feet submitted for radiological and VOC analysis. Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-2D

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/13/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Grass, brown mottled CLAY, grades to less silt with depth - ML-CL		SS1	44	90	50		0
	Brown, mottled CLAY - CH		SS2	34	98	50		0
5	Black streak with orange pieces of material, brown mottled CLAY - CH		SS3	21	98	50		0
			SS4	17	100	100		0
	Moist, brown, mottled CLAY - CH		SS5	13	100	50		0
10			SS6	13	100	50		0
	Moist to saturated, brown, mottled CLAY - CH		SS7	15	100	50		0
	Boring terminated at 14 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL ● LL

10 20 30 40 50

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 7 feet submitted for radiological analysis.
Sample at 12 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm
PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-2E

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					60		0
							3520	
			SS1	20	80	60		0
							5362	
						60		0
							4627	
						60		0
			SS2	21	70	60	5799	0
						60		0
							3886	
	Brown, silty CLAY - CL					60		0
5			SS3	3	25		5170	0
						140		0
							4764	
						80		0
			SS4	21	100	60		0
						60		0
						80		0
			SS5	22	100	80		0
	Gray CLAY - CH					60		0
10	Boring terminated at 10 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 4 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-4A

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML				50	0
					60	0
		SS1	17	80	50	0
					50	0
					50	0
					60	1
	with clay lenses	SS2	13	90	60	1
					50	0
					60	0
					60	1
5		SS3	17	95	60	1
					60	1
	Brown, silty CLAY - CL				60	2
					60	2
		SS4	13	85	60	1
					60	1
						1
	Mottled gray CLAY - CH					1
		SS5	13	90		1
						1
10	Boring terminated at 10 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at8 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-4B

Project No. 0700204.41ID

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML				50	0
		SS1	15	80	60	0
					50	0
	Brown CLAY - CH					
	Brown, clayey SILT - ML				50	0
		SS2	24	95	60	0
					60	0
						0
					60	3
5	Brown, silty CLAY - CL	SS3	24	100		0
					60	0
						0
					60	0
		SS4	20	100	60	0
					60	0
						0
					60	1
		SS5	20	95	70	1
					80	1
10						
					70	0
		SS6	10	100	60	1
	Brown CLAY - CH				60	1
	Boring terminated at 12 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-4C

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					50		
						60		0
			SS1	14	80	60		0
						60		0
	Brown, silty CLAY - CL					50		
						50		0
			SS2	12	85	50		0
						50		0
	Brown, clayey SILT - ML					50		0
						60		0
5			SS3	14	80	60		0
						60		0
						60		0
			SS4	12	90	60		0
	Brown CLAY - CL					60		0
						60		
						60		0
			SS5	15	100	60		0
						60		0
10	Boring terminated at 10 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-4D

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/17/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					50		0
			SS1	24	70	50		0
						60		0
	Brown, silty CLAY - CL					50		0
			SS2	15	65	50		0
						50		0
						50		0
5			SS3	11	55	50		0
						50		0
						50		0
	Gray CLAY - CH		SS4	11	35			0
						50		0
	Plastic waste							0
			SS5	16	0			0
								0
10	Boring terminated at 10 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 9 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-4E

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL					50		0
			SS1	15	60			
						50		0
						50		0
			SS2	12	80			1
						60		1
						50		
						50		0
5			SS3	8	75	50		1
						50		1
						50		
						50		0
	Gray, mottled CLAY - CH		SS4	14	100	50		0
						50		0
	Boring terminated at 8 feet.							
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-4F

Project No. 0700204.41ID

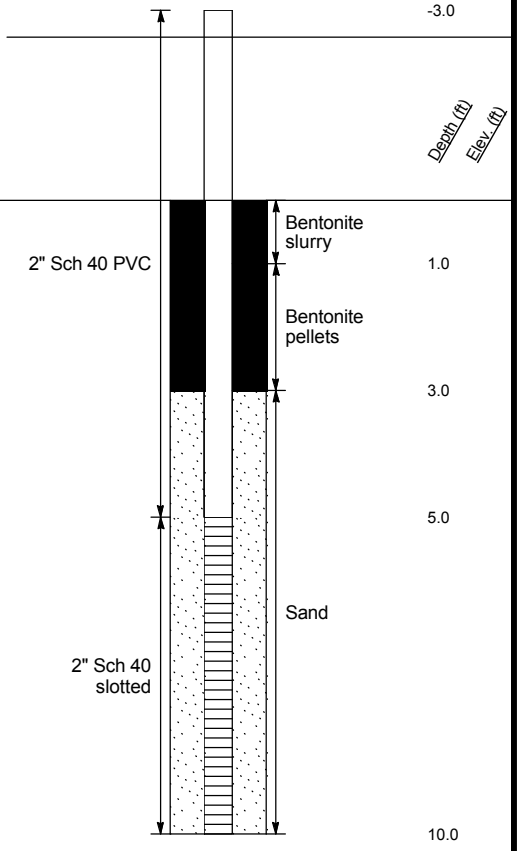
NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown to gray, mottled CLAY - CH		SS1	15	90	50	3152	0
							3203	0
			SS2	22	90	50	3210	0
							4936	0
5			SS3	14	10	50	5205	0
	Waste encountered PPE, plastic bag, gloves						4314	0
			SS4	19	0	50	3787	0
	Gray, soft CLAY - CH						3567	0
			SS5	14	100	50	6661	0
10							3585	0
			SS6	12	100	50		0
								0
	Brown CLAY - CH		SS7	13	100	50		0
								0
	Boring terminated at 14 feet.							0
15								

WELL DIAGRAM



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 7 feet submitted for radiological analysis.
Sample at 12 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm
PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-5A

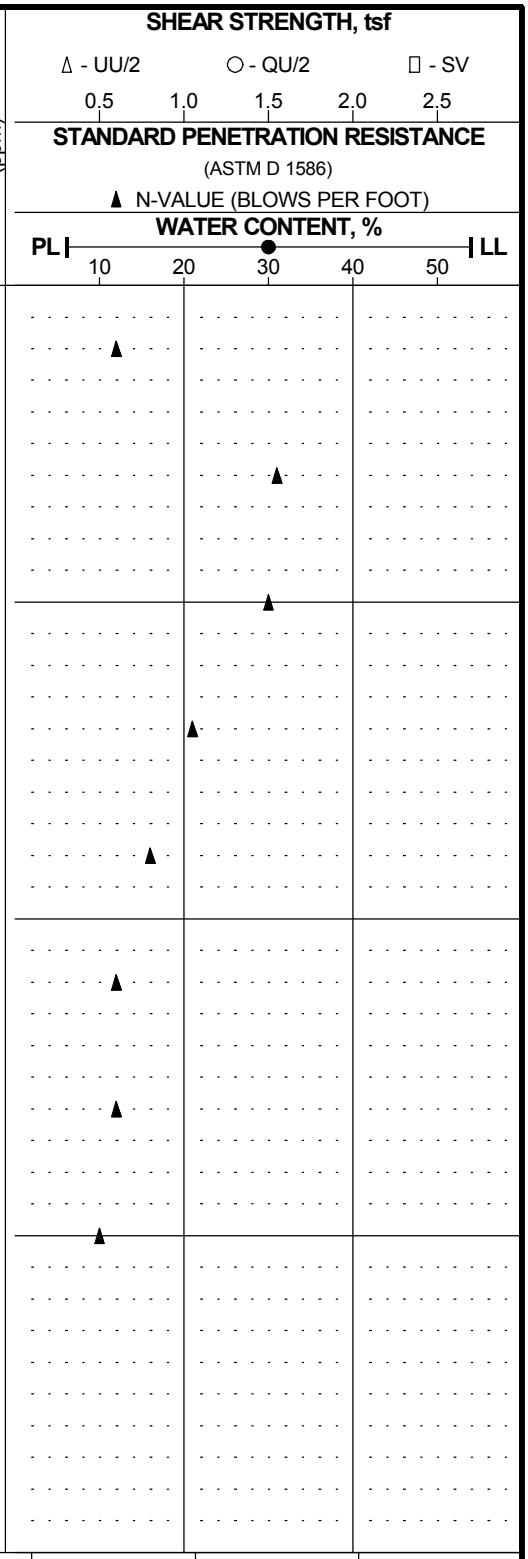
Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Mottled brown CLAY - CH	SS1	12	95	0	2780	0
						3792	
	Mottled brown, silty CLAY - CL	SS2	31	98	0	9310	0
						8530	
	Brown, mottled CLAY - CH	SS3	30	100	0	4654	0
5						4645	
		SS4	21	100	0	4647	0
						4591	
		SS5	16	100	0	4687	0
10						4693	
	Gray CLAY, less mottling, soft - CH	SS6	12	100	0	4690	0
						4574	
		SS7	12	100	0	4549	0
						4550	
15		SS8	10	100	0	4442	0
						4401	
	Boring terminated at 16 feet.						



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological and VOC analysis. Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm PID fluccuating in field. VOC readings false positive.

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-5B

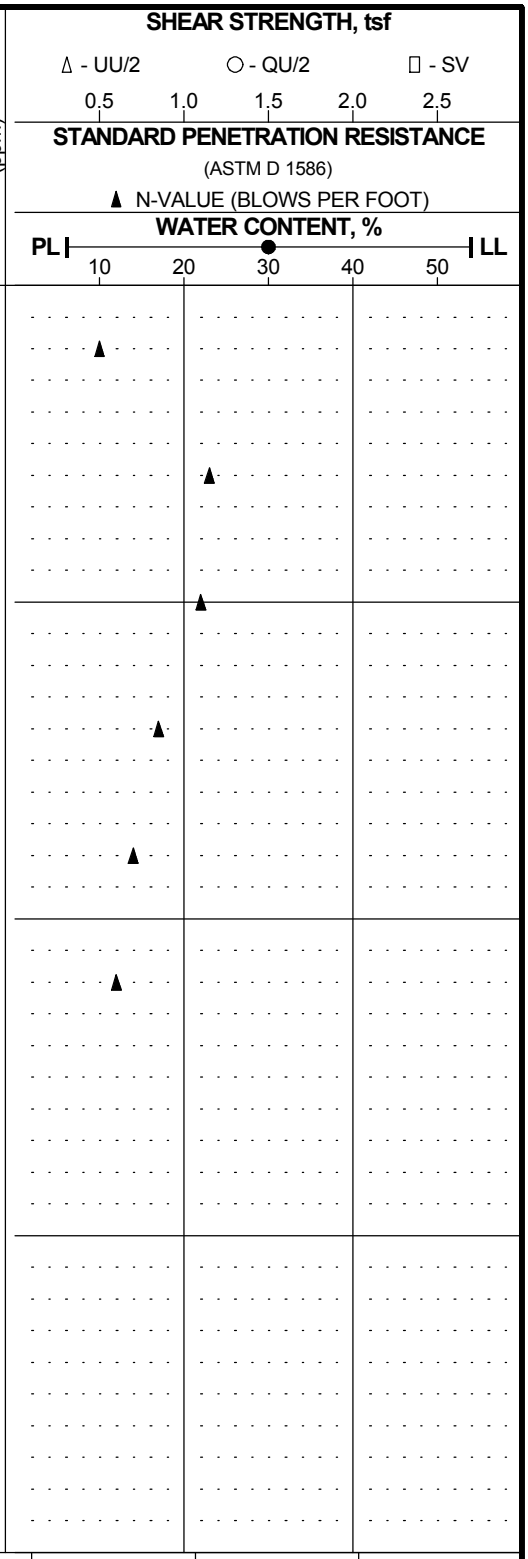
Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL		SS1	10	90	0		0
	Brown, mottled CLAY with some silt - CL		SS2	23	98	0		0
5	Brown, mottled CLAY - CH		SS3	22	100	0		0
	Soft, brown, mottled CLAY - CH		SS4	17	100	0		0
	Mottled, brown CLAY - CH pea size gravel		SS5	14	100	0		0
10	Brown, grayish CLAY, less mottling, soft - CH		SS6	12	100	0		0
	Boring terminated at 12 feet.							
15								



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-5C

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown and gray mottled CLAY, with some silt - CL		SS1	15	95	0		0
			SS2	31	98	0		0
	Brown, mottled CLAY - CH							
5			SS3	27	100	0		0
			SS4	16	100	0		0
	trace gravel							
			SS5	12	100	0		0
10	Moist, brown, mottled CLAY - CH							
			SS6	12	100	0		0
	Boring terminated at 12 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-5D

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Mottled brown, silty CLAY - CL		SS1	12	95	0		0
			SS2	31	100	0		0
5			SS3	29	100	0		0
	Moist, brown, mottled CLAY - CH		SS4	18	100	0		0
			SS5		100	0		0
10	wet		SS6	13	100	0		0
	Boring terminated at 12 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SM LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-5E

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT with concrete and asphalt					50		0
			SS1	16	60	50	2930	
								3
	with gravel-sized concrete pieces						4031	
						50		2
			SS2	12	90	50	4794	1
						50		0
							5373	
						60		
5			SS3	17	90	70	5993	1
						60		0
							7850	2
	Black, silt size material					300		
			SS4	17	40		14100	
							36183	
								500
			SS5		70		66117	
10								
			SS6		0			
	Boring terminated at 11 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 6 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-6A

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

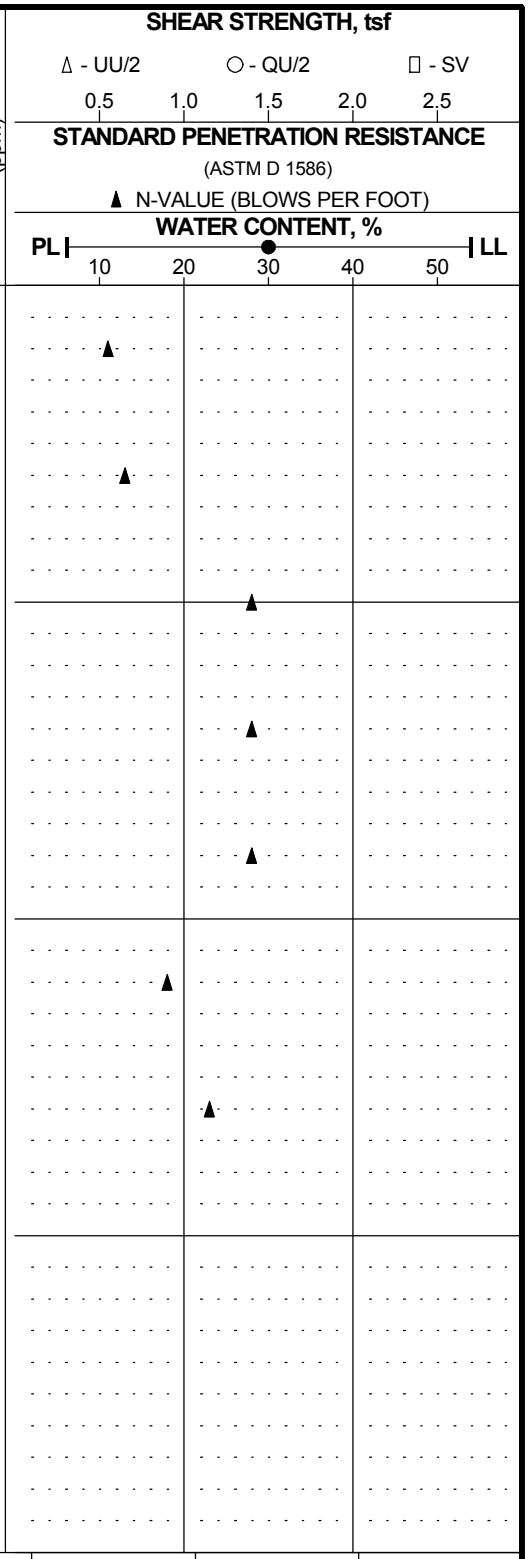
Surface Elevation _____ Completion Date: 11/17/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML	SS1	11	60	50 50	0 0
	Brown, silty CLAY - CL	SS2	13	75	50 50	0 0
5	Brown SILT - ML	SS3	28	80	50	0
	Brown CLAY - CH				50	0
	Brown, clayey SILT - ML	SS4	28	80	50 50 60	1 1
		SS5	28	100	60 60 70	2 3 2
10		SS6	18	100	60 60 60	1 1
	Brown CLAY - CH					
	Mottled gray CLAY - CH	SS7	23	100	60	1 1
	Boring terminated at 14 feet.					
15						

GRAPHIC LOG

GAMMA LOG



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 9 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-6B

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML				50	0
		SS1	13	75		
					60	0
	Moist, brown, silty CLAY - CL				60	0
		SS2	14	75		0
					60	1
					60	0
5	Brown CLAY - CH	SS3	16	75		1
					60	1
	Brown, clayey SILT - ML				60	4
		SS4	16	85	70	1
					60	2
					60	
	Gray CLAY - CH				80	2
		SS5	28	100	100	2
	with gravel				60	1
10					200	
		SS6	30	60	100	2
					100	2
	Refusal on wood fragment.				100	2
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-6C

Project No. 0700204.41ID

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT with concrete fragments - ML				50	0
		SS1	33	70	50	0
					50	0
					50	0
		SS2	11	70	50	0
					50	0
	with clay lenses				60	1
5		SS3	12	70	70	2
					70	2
	Brown CLAY - CH					
	Brown, clayey SILT - ML				70	4
		SS4	20	100	70	2
					60	2
	Brown CLAY with silt lenses and asphalt fragments - CH				50	10
		SS5	20	100	50	10
					50	15
10	with black sand				60	20
					60	15
		SS6	24		120	10
					100	5
					200	25
		SS7	19		200	20
	with plastic waste				350	25
	Boring terminated at 14 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-6D

Project No. 0700204.41ID

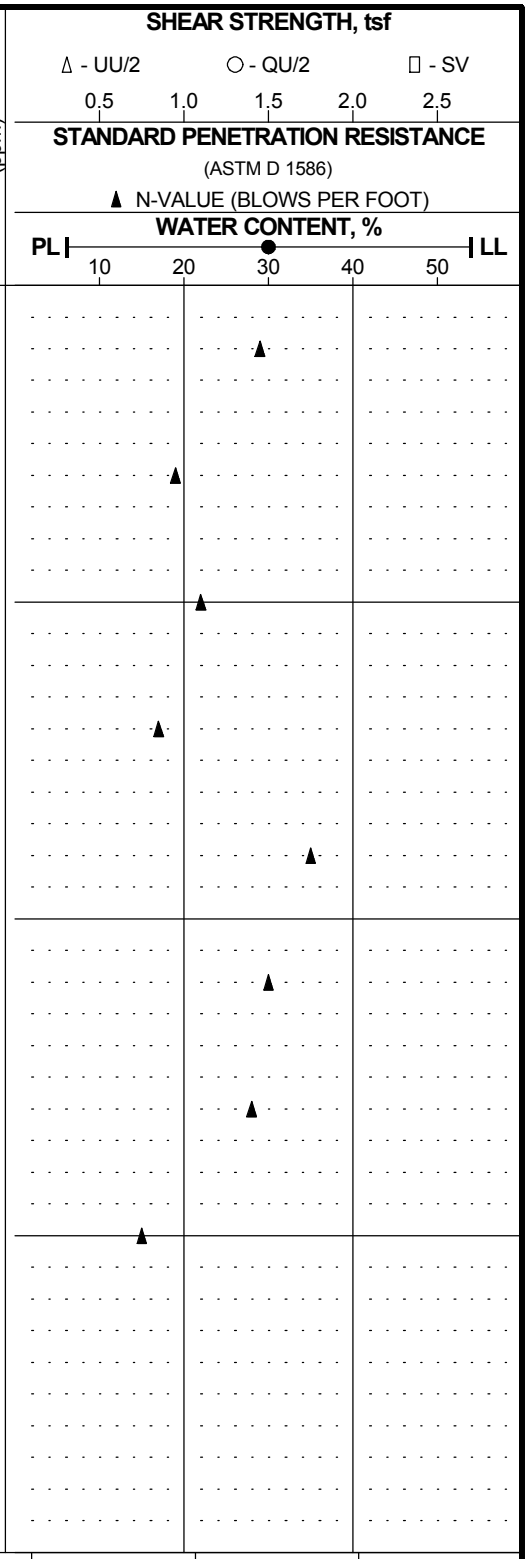
Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT with gravel and asphalt fragments - ML				50	0
		SS1	29	75		
					50	0
					50	0
		SS2	19	75	50	1
					50	1
					50	
					50	1
5		SS3	22	70	50	1
					50	1
					50	1
		SS4	17	70	50	1
					50	1
	Brown, silty CLAY - CL				50	2
		SS5	35	85	60	5
					60	5
10						2
	Gray CLAY - CH				60	2
		SS6	30	100		2
					60	2
					60	5
		SS7	28	100	60	2
					60	5
					60	2
15	with limestone fragments	SS8	15	75		
					60	2
	Boring terminated at 16 feet.					

GRAPHIC LOG

GAMMA LOG



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 14 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-6E

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML				50	1
					50	1
		SS1	22	90	50	1
					50	1
	with clay lenses				50	1
		SS2	12	65	50	
					50	1
	Brown, silty CLAY with silt lenses - CL				50	1
5		SS3	12	60	50	1
					50	1
	Brown, clayey SILT with gravel - ML				90	1
		SS4	17	60	90	1
					300	1
	Gray CLAY with wood fragments - CH				300	5
		SS5	17	100	300	15
					500	10
10	Boring terminated at 10 feet.					
15						

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 9 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-6F

Project No. 0700204.41ID

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT with concrete fragments - ML					50		0
			SS1	17	75	50		0
						50		1
						50		0
			SS2	21	20			
	No recovery							
5			SS3	17	0			
	Brown, clayey SILT with gravel - ML					50		0
						50		0
			SS4	20	100	50		0
						50		0
						58		1
			SS5	25	95	60		2
	Black, sandy waste					30		5
10	Boring terminated at 10 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: BP-6G

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					50		0
						50		0
			SS1	30	75	50		0
						50		0
						60		0
			SS2	14	75	60		0
						60		0
	with clay lenses							
						50		0
5			SS3	11	75	50		0
						50		0
						60		2
			SS4	21	40			
	No recovery							
			SS5	27	0			
10	Waste					300		
			SS6	30	25			
	Boring terminated at 12 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-6H

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

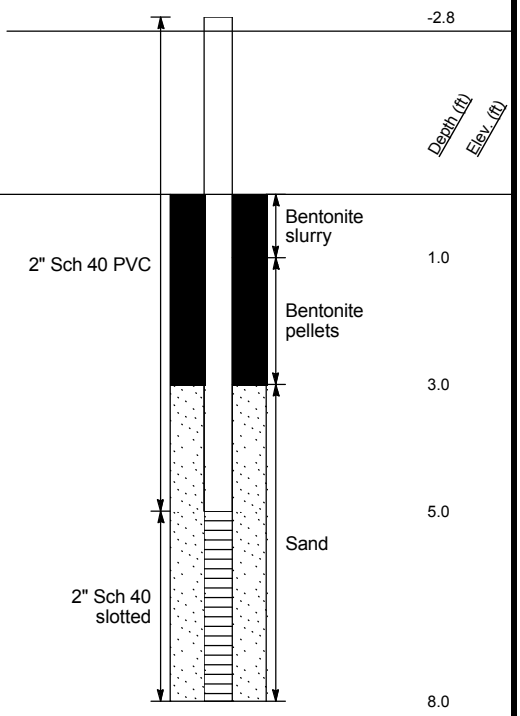
LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown to reddish-brown, silty CLAY - CL		SS1	20	80	50	3233	0
							4465	
			SS2	12	50	50	4434	0
	moist						3987	
5			SS3	12	30	50	4991	0
							6937	
			SS4	19	70	50		0
	rubber hose							
	Gray CLAY - CH		SS5	12	100	50		0
10								
			SS6	19	100	50		0
	Boring terminated at 12 feet.							
15								

WELL DIAGRAM



GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER JCB LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological analysis.
Sample at 6 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/16/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-7A

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY to CLAY - CL to CH		SS1	13	85	50		0
			SS2	14	75	50		0
5	trace wood		SS3	50	90	50		0
	Gray CLAY - CH		SS4	12	100	50		0
			SS5	9	100	50		0
10	Boring terminated at 10 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER JCB LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 8 feet submitted for radiological analysis.
Sample at 10 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
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Festus, Missouri 63028

LOG OF BORING: BP-7B

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/17/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY to CLAY - CL to CH		SS1	16	100	50		0
			SS2	27	100	50		0
5			SS3	24	90	50		0
			SS4	16	100	50		0
			SS5	12	100	50		0
10	Brown to gray CLAY - CH		SS6	12	100	50		0
	Boring terminated at 12 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER JCB LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 12 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-7C

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY to CLAY - CL to CH							
			SS1	13	90	50	3580	0
							4300	
			SS2	12	70	50	4592	0
							4449	
5			SS3	11	75	50	4678	0
							5549	
	trace plastic waste		SS4	16	60	50	13542	0
							7572	
	trace plastic waste		SS5	13	100	50	4600	0
10							4550	
			SS6	18	50	50	4608	0
							4483	
			SS7	17	60	50	4507	0
							4285	
	Boring terminated at 14 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER JCB LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 10 feet submitted for radiological analysis.
Sample at 8 feet submitted for VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: BP-8A

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, clayey SILT - ML				50	0
		SS1	29	90	50	0
					50	0
	with concrete rubble				60	1
		SS2	20	75	70	1
					70	1
					60	1
5		SS3	22	75	70	2
					60	1
	gravelly				60	1
		SS4	23	70	80	1
					60	1
					60	2
					60	2
		SS5	38	100	60	2
					60	2
10					60	2
					60	2
		SS6	25	100	60	2
					70	2
					60	2
					60	2
		SS7	25	100	60	2
					60	2
	Gray to brown, silty CLAY - CL				60	2
15		SS8	20	100	60	2
					60	2
	with sand lenses				60	2
		SS9	20	100	60	2
					60	2
	Boring terminated at 18 feet.					

GRAPHIC LOG

GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 16 feet submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: BP-9A

Project No. 0700204.41ID

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel - CL							0
						40		0
	with concrete rubble		CS1		83	40		0
	Brown, silty CLAY - CL					40		0
						40		0
5						40		0
			CS2		100	40		0
						100		0
						40		0
	vadose zone					50		0
10	moist		CS3		83	5		0
						50		0
	8 inch seam with limestone fragments					50		0
						46		0
			CS4		100	40		0
15						80		0
	Boring terminated at 16 feet.					40		

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-1

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with limestone fragments - CL					30		0
			CS1		100	30		0
						30		0
						30		0
5	Brown, silty CLAY - CL					40		0
			CS2		100	40		0
						40		0
						40		0
						40		0
10			CS3		100	40		0
	moist from 10.5 to 11.5 feet					40		0
	Grayish-green CLAY - CH					40		0
						40		0
			CS4		100	40		0
15						40		0
	Boring terminated at 16 feet.					40		

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-2

Project No. 0700204.41ID

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL					20		0
						20		0
			CS1		100	20		0
	with limestone fragments					20		0
						20		0
5						20		0
			CS2		100	20		0
						20		0
						20		0
	with gravel, saturated					20		0
10	Grayish-green CLAY - CH	▽	CS3		100	20		0
						20		0
						20		0
						20		0
			CS4		100	20		0
15						20		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 10 FEET ▽

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-3

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown and gray, silty, fill CLAY - CL							
						40		0
			CS1		100			
						40		0
5	Brown, silty CLAY - CL					40		0
			CS2		100			
						40		0
	moist							
	wet	∇				40		0
10	Grayish-green CLAY - CH		CS3		100	40		
						40		0
						40		0
	with gravel		CS4		100			
15						40		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 9 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-4

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Crushed rock GRAVEL							
	Brown and gray, silty, fill CLAY - CL					30		0
			CS1		100			
						120		0
	Brown, silty CLAY - CL							
5						30		0
			CS2		100			
						30		0
						30		0
10	moist		CS3		100			
						30		0
	Grayish-green CLAY - CH							
						30		0
			CS4		100			
15						30		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-5

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/14/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Gravel and asphalt							
	Brown, silty, fill CLAY - CL					60		0
			CS1		75			
						60		0
5	Brown, silty CLAY - CL					40		0
			CS2		100			
						40		0
	Grayish-green CLAY - CH					40		0
10			CS3		100			
						40		0
						40		0
			CS4		100			
15	4 inch gravel seam					40		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-6

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Gravel and asphalt							
	Gray and brown, silty, fill CLAY - CL					20		0
			CS1		100			
						20		0
	Brown, silty CLAY - CL							
5						20		0
			CS2		50			
						20		0
	Grayish-green CLAY - CH							
						20		0
10			CS3		100			
						20		0
						20		0
			CS4		100			
15						20		* 0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-7

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/15/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Concrete - 4 inches							
	Brown, silty CLAY - CL					20		0
			CS1		100			
						20		0
5	Gravel with possible ground water					20		0
	Brown, silty CLAY - CL		CS2		100			
						20		0
	Gravel with possible ground water					20		0
10	Grayish-green CLAY - CH		CS3					
						20		0
						20		0
			CS4					
15						20		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 9 FEET ▽

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-8

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/15/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Concrete - 4 inches							
	Brown, silty CLAY - CL					20		0
			CS1		100			
						20		0
5						20		0
			CS2		100			
						20		0
	possible saturation zone					20		0
10			CS3		38			
						20		0
	Grayish-green CLAY - CH							
						20		0
			CS4		100			
15						20		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-9

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: 11/15/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Gravel and asphalt							
	Brown, silty CLAY - CL					20		0
			CS1		100			
						20		0
5						20		12
	Grayish-green CLAY - CH		CS2		100			
						20		12
						20		13.9
10			CS3		100			
						20		
	with gravel							
						20		13.7
			CS4		43			
15						20		
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Hematite Facility
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Festus, Missouri 63028

LOG OF BORING: PB-10

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/15/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY - CL							
						60		11.1
			CS1		100			
	moist from 2.5 to 3.5 feet					80		
	Brown, silty CLAY - CL							
5						60		11.3
			CS2		100			
						60		11.3
	moist to saturated from 8 to 10 feet							
						60		6.1
10			CS3		100			
						60		6.1
						60		3.2
			CS4					
15						60		3.2
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
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Festus, Missouri 63028

LOG OF BORING: PB-11

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/15/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dry, brown, silty CLAY - CL							
						20		12.1
			CS1		100			
						20		12.1
5						20		11.8
			CS2		75			
	grayish-green, very moist from 7 to 7.5 feet					20		11.8
						20		11.7
10			CS3		100			
						20		11.7
						20		11.3
			CS4		18			
15						20		11.3
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-12

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	SAMPLES	% RECOVERY	GM SCAN (cpm)	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel				
	Brown, silty CLAY - CL			30	0
		CS1	100		
				30	0
5	Moist, greenish-gray, clayey SILT - ML			30	0
	Brown, silty CLAY - CL	CS2	100	30	0
	Moist, greenish-gray, clayey SILT - ML			30	0
	Brown, silty CLAY - CL			30	0
	4 inch, greenish-gray clay seam			40	0
				30	1.3
10		CS3	75		
				30	1.7
				30	0
				40	0
	Grayish-green CLAY - CH			40	0
		CS4	133		
				40	0
15	Boring terminated at 15 feet.			40	0

GRAPHIC LOG | BLOW COUNT | GAMMA LOG

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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LOG OF BORING: PB-13

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Organic, silty CLAY - CL					40		2.8
	Dry, brown, clayey SILT - ML		CS1		75	40		2.8
5			CS2		100	40		1.2
						40		1.2
	Moist, brown, silty CLAY - CL					40		1.4
10			CS3		100			
	apparent water zone					40		1.4
						20		1.6
			CS4		100			
15						20		1.6
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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LOG OF BORING: PB-14

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dark brown, clayey silt - ML					40		1.2
			CS1		100			
	Brown, silty CLAY - CL					40		1.2
5						40		1.3
			CS2		100			
						40		1.3
						40		1.2
10			CS3		75			
						40		1.2
	moist							
						40		1.2
			CS4		100			
15						40		1.2
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-15

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dark brown, clayey SILT intermixed with light gray SILT - ML					20		0
			CS1		100			
						20		0
	Dry, brown, clayey SILT - ML							
	Moist, brown, silty CLAY - CL							
5	3 inch gravel seam					20		0
			CS2		100			
						20		0
						20		0
10			CS3		100			0
						20		0
						20		0
			CS4		100			
15						20		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
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Festus, Missouri 63028

LOG OF BORING: PB-16

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/16/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dry, layered, brown, clayey SILT with light gray mottles - ML					30		0
			CS1		100			
						30		0
5						30		0.1
			CS2		100			
	Moist, brown, silty CLAY - CL					30		0.1
	with light gray mottles							
						30		0.1
10			CS3		100			
						30		0.1
	gray with tan mottles							
						40		0.2
			CS4					
15						40		0.1
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-17

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dry, brown, silty CLAY with tan and gray mottles - CL		CS1		100	20 20		0 0
5	Moist, brown, clayey SILT with tan and gray mottles - ML		CS2		100	20 20		0 0
	with medium grained sand							
10			CS3		100	20 20		0 0
	with limestone fragments							
	Brown, silty CLAY - CL		CS4		100	20 20		0 0
15	saturated ∇							
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 15 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
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LOG OF BORING: PB-18

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/16/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dry, brown, silty CLAY with gray mottles - CL							
						20		0
			CS1		100			
						20		0
5						0		0
			CS2		100			
						0		0
						40		0
10			CS3		100			
						40		0
						40		0
	moist		CS4		100			
15						40		0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-19

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with concrete fragments and gravel - CL					30		0.5
			CS1		100			
						30		0.1
5						30		0.3
	Dry, brown and gray mottled, clayey SILT - ML		CS2		100			
						30		0.3
						30		0.4
10			CS3		100			
	Moist, brown, silty CLAY - CL					30		0.6
						30		0.3
			CS4		100			
15						30		0.3
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-20

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dark brown, clayey, fill SILT - ML					20		0.7
			CS1		50			
	Gravel					20		4.2
	Asphalt							
	Gravel with tar							
5						20		4.0
			CS2		50			
	Brown, clayey, fill SILT - ML					20		3.6
	Gravel with tar					20		3.3
10	Brown, silty CLAY to clayey SILT - CL to ML		CS3		100			
						20		0.6
	Moist, brown, clayey SILT with fine grained sand - ML					20		0.3
			CS4		100			
15	Brown, clayey SILT with coarse grained sand and gravel - ML					20		0.3
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-21

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/17/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with concrete rubble - CL							
	2 inches concrete rubble					20		1.2
			CS1		100			
	Gravel with brown, silty, fill CLAY - CL					20		1.2
	Gravel with tar							
	Brown, clayey, fill SILT with gravel - ML							
5						20		1.2
			CS2		100			
						20		1.2
	Grayish-tan, clayey, fill SILT with oxide stains - ML							
						20		1.2
10			CS3		75			
						20		1.2
	turns dark brown							
			CS4		400	20		1.8
	wet					200		4.8
	Sampler refusal at 13 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 13 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-22

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey, fill SILT with gravel - ML							
						20		0.6
			CS1		100			
						20		0.6
5						20		1.3
	asphalt lens		CS2		100			
	gravel lens with plastic waste					20		1.5
						20		9.8
10	Moist, olive, silty CLAY - CL		CS3		100			
						20		16.2
						20		913
			CS4		67	20		
	Sampler refusal at 13.5 feet.							
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-23

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel - CL							
						20		2.6
			CS1		100			
	with asphalt					20		13.0
	Brown, silty, fill CLAY with concrete rubble and asphalt - CL							
5						20		0.6
			CS2		60			
						20		0.6
						20		0.7
10	Moist, olive, silty CLAY - CL		CS3					
						20		16.1
	wet gravel with organics							
			CS4			20		17.0
15	Sampler refusal at 14.5 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-24

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel and asphalt - CL							
						20		1.0
			CS1		100			
						20		1.0
5						20		0.8
	2 inch sand seam		CS2		100			
						20		0.8
						20		0.8
10			CS3		100			
						20		0.8
	Dark brown, clayey SILT - ML							
						20		
	wet gravel	∇	CS4					4.6
15	with fine grained sand					20		
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 14 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-25

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel and asphalt - CL							
						20		0.3
			CS1		100			
						20		0.3
5						20		0.3
			CS2		100			
						20		0.3
						50		1.7
10	sandy		CS3		75			
	Brownish-gray CLAY with roots and organics - CH							5.8
	Saturated, gray, clayey SILT - ML with glass							
			CS4		20	50		0.7
						100		0.5
15	Sampler refusal at 14.5 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 12 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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LOG OF BORING: PB-26

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Moist, brown, silty, fill CLAY with asphalt seams - CL							
						40		0.6
			CS1					
						40		0.6
5			CS2			40		0.6
	Sampler refusal at 6.5 feet.							
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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LOG OF BORING: PB-27

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/17/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel and asphalt layers - CL							
						0		1.3
			CS1		100			
						0		1.3
5						0		1.3
			CS2		100			
						0		1.3
						0		0.7
10	Dark brown, clayey SILT with limestone fragments - ML		CS3		75			
						0		0.7
	Saturated, fine grained SAND with dark brown and gray, clayey SILT - SP and ML					0		1.2
			CS4		20			
15						0		0.8
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 12 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-28

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY with gravel and asphalt - CL					40		7.1
			CS1		100			
						40		7.3
	Brown, silty, fill CLAY - CL					40		7.6
5			CS2		100			
	Moist, dark brown, silty CLAY - CL with organics					40		7.5
						40		8.0
10			CS3		100			
						40		8.1
	Brown, silty CLAY - CL saturated					40		6.8
	Grayish-brown CLAY - CH		CS4		75			
15						40		7.0
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 13 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/23/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-29

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY - CL							
						50		0
			CS1		75			
						50		0
5						50		0
			CS2		75			
	Dark brown, silty CLAY - CL 2 inch asphalt layer					50		0
						50		0
10			CS3		100			
						50		0
	dark brown and gray from 12 to 13 feet							
						80		0.6
	Dark brown, silty CLAY with gravel - CL		CS4		100			
15	Grayish-green CLAY - CH					80		0.5
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-30

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, organic, silty CLAY - CL							
	Brown, silty CLAY - CL					40		0.6
			CS1		100			
						40		0.6
5	Clayey SILT with fine grained sand and gravel - ML					40		0.6
	Grayish-green CLAY - CH		CS2		100			
						40		0.6
	with gravel							
						40		0.7
10			CS3		100			
						40		0.7
						40		0.7
			CS4		100			
15						40		0.7
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-31

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY - CL							
						40		0.4
			CS1		100			
						40		0.6
5						40		0.8
	Dark brown, clayey, fill SILT - ML		CS2		100			
						40		12.1
	2 inch olive, silty clay lens							
	wallboard fragment					40		0.8
10	Brown, silty CLAY - CL		CS3		100			
						40		0.8
						40		0.8
			CS4		100			
15						40		0.8
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-32

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL							
						40		0.6
			CS1					
						40		0.6
5						40		0.6
			CS2		25			
						40		0.6
	with fine grained sand from 8 yo 10 feet							
						40		0.7
10	Brown and gray CLAY - CH		CS3					
						40		0.7
	No recovery							
			CS4		0			
15								
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Festus, Missouri 63028

LOG OF BORING: PB-33

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown with gray mottles, silty CLAY with lignite - CL							
						40		0.2
			CS1					
						40		0.2
5						40		0.2
			CS2					
						40		0.2
						40		0.2
10			CS3					
						40		0.2
						40		0.2
	Saturated, brown CLAY - CH		CS4					
15						40		0.2
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 14 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-34

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Dry, stratified, brown, silty, fill CLAY - CL							
						40		1.0
			CS1		100			
						40		1.0
	Brown with gray mottles, silty CLAY with lignite - CL							
5						40		0.9
			CS2		100			
						40		0.9
						40		1.0
10			CS3		100			
						40		0.9
	Saturated, brown, silty CLAY to CLAY - CL to CH							
						40		0.9
			CS4		100			
15						40		0.9
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 12 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-35

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Concrete - 3 inches							
	Gravel and sand					40		7.5
	Dry, dark brownish-gray, silty, fill CLAY - CL		CS1		100	40		27
						40		16
						40		0.8
	Sampler refusal at 4 feet.							
5								
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
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Festus, Missouri 63028

LOG OF BORING: PB-36

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty CLAY - CL					40		0.6
			CS1		100			
						40		0.6
5	Light gray, clayey SILT - ML					40		0.6
	Brown, silty CLAY - CL		CS2		100			
						40		0.8
	saturated					40		0.8
10	Brown with gray mottles, silty CLAY with lignite - CL		CS3		100			
						40		0.8
	Grayish-green CLAY - CH					40		0.8
			CS4		100			
15						40		0.8
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 9 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-37

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/18/06**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Gravel with dry silty CLAY							
	Brown with gray mottles, clayey SILT with lignite - CL		CS1		100	40 40		0.9 0.9
5	Brown with gray mottles, silty CLAY with lignite - CL		CS2		100	40 40		0.9 0.9
10	Brown, silty CLAY - CL saturated		CS3		100	40 40		
15	Grayish-green CLAY - CH		CS4		100	40 40		
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 9 FEET ∇

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Festus, Missouri 63028

LOG OF BORING: PB-38

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Moist, brown, silty CLAY - CL							
						40		0.1
			CS1		100			
						40		0.1
5						40		0.2
	saturated		CS2		100			
						40		0.2
	with gray mottles and lignite							
						40		0.2
10			CS3		100			
						40		0.2
						40		0.2
			CS4		100			
15						40		0.2
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
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Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: PB-39

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/18/06

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, silty, fill CLAY - CL							0.1
			CS1		100			0.1
	Brown, silty CLAY - CL							
5	saturated ▽							0.1
			CS2		100			0.1
								0.1
10			CS3		100			0.1
								0.1
			CS4		100			0.1
15	Grayish-green CLAY - CH							0.1
	Boring terminated at 16 feet.							

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

ENCOUNTERED AT 5 FEET ▽

DRILLING DATA

direct push AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER SWG LOGGER

___ DRILL RIG

HAMMER TYPE ___

REMARKS:

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
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Festus, Missouri 63028

LOG OF BORING: PB-40

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: 11/13/07

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					100		0.2
			SS1	37		100		0
								0
						100		0
			SS2	40				
	brick							
	concrete							
	Boring terminated at 4 feet.							
5								
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 1 foot submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: RR-6

Project No. 0700204.41ID

LOG OF BORING CABRERA 0700204HEMATITE.GPJ GEOTECHNOLOGY.GDT 1/30/07

Surface Elevation _____ Completion Date: **11/13/07**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					50		0
			SS1	20	60	60		0.2
								0
						50		0
						50		0
			SS2	24	50	50		0
						50		0
								0
								0
5	concrete		SS3	57	50			
	Boring terminated at 6 feet.							
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 1 foot submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: RR-7

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/13/07**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					60		0
			SS1		60	60		0
						60		0
						60		0
	concrete					60		0
			SS2		70	60		0.2
						60		
						60		0
						60		1.0
5	concrete		SS3		60	60		0
	Boring terminated at 6 feet.							
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 5 foot submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: RR-8

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

Surface Elevation _____ Completion Date: **11/13/07**

Datum_____

DEPTH IN FEET	DESCRIPTION OF MATERIAL	GRAPHIC LOG	SAMPLES	BLOW COUNT	% RECOVERY	GM SCAN (cpm)	GAMMA LOG	PID VALUES (ppm)
	Brown, clayey SILT - ML					60		0
			SS1	41	90	60		0
						60		0
	concrete							
	Boring terminated at 2 feet.							
5								
10								
15								

SHEAR STRENGTH, tsf

Δ - UU/2 ○ - QU/2 □ - SV

0.5 1.0 1.5 2.0 2.5

STANDARD PENETRATION RESISTANCE

(ASTM D 1586)

▲ N-VALUE (BLOWS PER FOOT)

WATER CONTENT, %

PL 10 20 30 40 50 LL

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER ___ HOLLOW STEM

WASHBORING FROM ___ FEET

___ DRILLER CY LOGGER

___ DRILL RIG

HAMMER TYPE Auto

REMARKS: Sample at 1 foot submitted for radiological and VOC analysis.
Background: radiological readings = 50 cpm, VOC readings = 0.0 ppm

Drawn by: LAH	Ck'd. by: SMM	App'vd. by: JFH
Date: 1/22/07	Date: 1/29/07	Date: 1/29/07

GEOTECHNOLOGY, INC.
ENGINEERING AND ENVIRONMENTAL SERVICES
ST. LOUIS • COLLINSVILLE • KANSAS CITY

Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, Missouri 63028

LOG OF BORING: RR-9

Project No. 0700204.41ID

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

APPENDIX B: MONITORING WELL CERTIFICATIONS

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO 00113246 DATE RECEIVED 01/11/2007
CR NO

STATE CERT NO A144452 APPROVED DATE 01/12/2007 CHECK NO. 80856
DATE ENTERED PHASE 1 01/11/2007 PHASE 2 01/11/2007 PHASE 3 01/11/2007 ROUTE PCD REVENUE NO. 011107

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

X MONITORING GAS MONITORING EXTRACTION RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

X ABOVE GROUND FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH _2.0 IN.

PROTECTIVE CASE MATERIAL X STEEL ALUMINUM PLASTIC OTHER CASE DIAMETER _4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER _____2.0 IN. RISER PIPE LENGTH _____10.0 FT. RISER HOLE DIAMETER _____8.0 IN.
RISER PIPE MATERIAL X PLASTIC STEEL PTFE OTHER
RISER PIPE WEIGHT X SCH40 SCH80 304/316 OTHER _____
DRILLING METHOD AUGER PUSH OTHER

SCREEN DIAMETER _____2.0 IN. SCREEN LENGTH _____5.0 FT. BENTONITE SEAL LENGTH ___3.0 FT.
SCREEN MATERIAL PLASTIC STEEL PTFE OTHER
SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER _8.0 IN.
SEAL ABOVE SWL SEAL BELOW SWL X
SEAL ABOVE SWL WAS HYDRATED

PRIMARY FILTER PACK LENGTH _____10.0 FT. PRIMARY FILTER MATERIAL SAND
SECONDARY FILTER PACK LENGTH _____0.0 FT. PREPACKED

ANNULAR SEAL LENGTH _____0.0 FT. ANNULAR SEAL MATERIAL BENTONITE SLURRY NEAT CEMENT GROUT
ANNULAR SEAL PLACED BY TREMIE GRAVITY PRESSURE GROUT THRU TREMIE
CEMENT BENTONITE GROUT NON-SLURRY BENTONITE OTHER
IF NON-SLURRY BENTONITE CHIPS GRANULAR PELLETS OTHER

MULTIPLE CASED OR NESTED WELLS

ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

(OPTIONAL) LEGAL LOCATION (OPTIONAL)

LAT. ___38 * ___12' _38.3" COUNTY
LONG. ___90 * ___28' _29.9" JEFFERSON_____

ELEVATION _____0 FT. _____ 1/4 _____ 1/4 _____ 1/4 SEC. _____0 TWN. _____0 RNG. _____0

DEPTH FROM TO FORMATION DESCRIPTION

FIRST ENCOUNTER GROUNDWATER 0.0 FT
STATIC WATER LEVEL (swl) 0.0 FT
WELL COMPLETION DATE 11/14/2006
PUMP SET DEPTH FT
WELL YIELD 0.0 GPM
PUMP INSTALLATION DATE
OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

TOTAL DEPTH _____14.5 FEET

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE	PERMIT NUMBER	DATE
x JOHN BOSTWICK_____	003839____	_____
WELL DRILLER SIGNATURE	PERMIT NUMBER	DATE
x PAUL GUERREIN_____	001187____	_____
PUMP INSTALLER SIGNATURE	PERMIT NUMBER	DATE
pump info required for extraction/recovery wells		
x _____	_____	_____

COPY

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO 00113245
DATE RECEIVED 01/11/2007
CR NO

STATE CERT NO A144451
APPROVED DATE 01/12/2007
CHECK NO. 80856
DATE ENTERED 01/11/2007
ROUTE
REVENUE NO. 011107
PHASE 1 01/11/2007
PHASE 2 01/11/2007
PHASE 3 01/11/2007
PCD

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

X MONITORING GAS MONITORING EXTRACTION RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

X ABOVE GROUND FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH _2.0 IN.

PROTECTIVE CASE MATERIAL X STEEL ALUMINUM PLASTIC OTHER CASE DIAMETER _4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER _____2.0 IN.
RISER PIPE MATERIAL X PLASTIC STEEL PTFE OTHER

RISER PIPE LENGTH _____7.5 FT.
RISER PIPE WEIGHT X SCH40 SCH80 304/316 OTHER _____

RISER HOLE DIAMETER _____8.0 IN.
DRILLING METHOD AUGER PUSH OTHER

SCREEN DIAMETER _____2.0 IN.
SCREEN MATERIAL PLASTIC STEEL PTFE OTHER

SCREEN LENGTH _____2.0 FT.
SCREEN HOLE DIAMETER
IF DIFFERENT FROM RISER _8.0 IN.

BENTONITE SEAL LENGTH ___2.5 FT.
SEAL ABOVE SWL SEAL BELOW SWL X
SEAL ABOVE SWL WAS HYDRATED

PRIMARY FILTER PACK LENGTH _____6.0 FT.
SECONDARY FILTER PACK LENGTH _____0.0 FT.

PRIMARY FILTER MATERIAL SAND
PREPACKED

ANNULAR SEAL LENGTH _____0.0 FT.
ANNULAR SEAL PLACED BY TREMIE GRAVITY PRESSURE GROUT THRU TREMIE

ANNULAR SEAL MATERIAL BENTONITE SLURRY NEAT CEMENT GROUT CEMENT BENTONITE GROUT NON-SLURRY BENTONITE OTHER
IF NON-SLURRY BENTONITE CHIPS GRANULAR PELLETS OTHER

COPY

MULTIPLE CASED OR NESTED WELLS

ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

(OPTIONAL)

LAT. ___38 * ___12' _38.4"
LONG. ___90 * ___28' _28.9"

COUNTY
JEFFERSON_____

ELEVATION _____0 FT.

LEGAL LOCATION (OPTIONAL)
_____ 1/4 _____ 1/4 _____ 1/4
SEC. _____0 TWN. _____0 RNG. _____0

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION

FIRST ENCOUNTER GROUNDWATER 0.0 FT
STATIC WATER LEVEL (swl) 0.0 FT
WELL COMPLETION DATE 11/15/2006
PUMP SET DEPTH FT
WELL YIELD 0.0 GPM
PUMP INSTALLATION DATE

OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

TOTAL DEPTH _____10.0 FEET

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE	PERMIT NUMBER	DATE
x JOHN BOSTWICK_____	003839____	_____
WELL DRILLER SIGNATURE	PERMIT NUMBER	DATE
x PAUL GUERREIN_____	001187____	_____
PUMP INSTALLER SIGNATURE	PERMIT NUMBER	DATE
pump info required for extraction/recovery wells		
x _____	_____	_____

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO 00113244 DATE RECEIVED 01/11/2007
CR NO

STATE CERT NO A144450 APPROVED DATE 01/12/2007 CHECK NO. 80856
DATE ENTERED PHASE 1 01/11/2007 PHASE 2 01/11/2007 PHASE 3 01/11/2007 ROUTE PCD REVENUE NO. 011107

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

X MONITORING GAS MONITORING EXTRACTION RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

X ABOVE GROUND FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH _2.0 IN.

PROTECTIVE CASE MATERIAL X STEEL ALUMINUM PLASTIC OTHER CASE DIAMETER _4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER _____2.0 IN. RISER PIPE LENGTH _____8.5 FT. RISER HOLE DIAMETER _____8.0 IN.
RISER PIPE MATERIAL X PLASTIC STEEL PTFE OTHER
RISER PIPE WEIGHT X SCH40 SCH80 304/316 OTHER _____
DRILLING METHOD AUGER PUSH OTHER

SCREEN DIAMETER _____2.0 IN. SCREEN LENGTH _____5.0 FT. BENTONITE SEAL LENGTH ___3.0 FT.
SCREEN MATERIAL PLASTIC STEEL PTFE OTHER
SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER _8.0 IN.
SEAL ABOVE SWL SEAL BELOW SWL X
SEAL ABOVE SWL WAS HYDRATED

PRIMARY FILTER PACK LENGTH _____10.0 FT. PRIMARY FILTER MATERIAL SAND
SECONDARY FILTER PACK LENGTH _____0.0 FT. PREPACKED

ANNULAR SEAL LENGTH _____0.0 FT. ANNULAR SEAL MATERIAL BENTONITE SLURRY NEAT CEMENT GROUT
ANNULAR SEAL PLACED BY TREMIE GRAVITY PRESSURE GROUT THRU TREMIE
CEMENT BENTONITE GROUT NON-SLURRY BENTONITE OTHER
IF NON-SLURRY BENTONITE CHIPS GRANULAR PELLETS OTHER

MULTIPLE CASED OR NESTED WELLS

ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

(OPTIONAL) LEGAL LOCATION (OPTIONAL)

LAT. ___38 * ___12' _38.4" COUNTY
LONG. ___90 * ___28' _28.2" JEFFERSON_____

ELEVATION _____0 FT. _____ 1/4 _____ 1/4 _____ 1/4 SEC. _____0 TWN. _____0 RNG. _____0

DEPTH FROM TO FORMATION DESCRIPTION

FIRST ENCOUNTER GROUNDWATER 0.0 FT
STATIC WATER LEVEL (swl) 0.0 FT
WELL COMPLETION DATE 11/15/2006
PUMP SET DEPTH FT
WELL YIELD 0.0 GPM
PUMP INSTALLATION DATE
OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

TOTAL DEPTH _____14.0 FEET

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE	PERMIT NUMBER	DATE
x JOHN BOSTWICK_____	003839____	_____
WELL DRILLER SIGNATURE	PERMIT NUMBER	DATE
x PAUL GUERREIN_____	001187____	_____
PUMP INSTALLER SIGNATURE	PERMIT NUMBER	DATE
pump info required for extraction/recovery wells		
x _____	_____	_____

COPY

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO 00113243
DATE RECEIVED 01/11/2007
CR NO

STATE CERT NO A144449
APPROVED DATE 01/12/2007
CHECK NO. 80856
DATE ENTERED PHASE 1 01/11/2007 PHASE 2 01/11/2007 PHASE 3 01/11/2007
ROUTE
PCD
REVENUE NO. 011107

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

X MONITORING GAS MONITORING EXTRACTION RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

X ABOVE GROUND FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH _2.0 IN.

PROTECTIVE CASE MATERIAL X STEEL ALUMINUM PLASTIC OTHER CASE DIAMETER _4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER _____2.0 IN.
RISER PIPE MATERIAL X PLASTIC STEEL PTFE OTHER

RISER PIPE LENGTH _____8.5 FT.
RISER PIPE WEIGHT X SCH40 SCH80 304/316 OTHER _____

RISER HOLE DIAMETER _____8.0 IN.
DRILLING METHOD AUGER PUSH OTHER

SCREEN DIAMETER _____2.0 IN.
SCREEN MATERIAL PLASTIC STEEL PTFE OTHER

SCREEN LENGTH _____3.0 FT.
SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER _8.0 IN.

BENTONITE SEAL LENGTH ___3.0 FT.
SEAL ABOVE SWL SEAL BELOW SWL X
SEAL ABOVE SWL WAS HYDRATED

PRIMARY FILTER PACK LENGTH _____8.0 FT.
SECONDARY FILTER PACK LENGTH _____0.0 FT.

PRIMARY FILTER MATERIAL SAND PREPACKED

ANNULAR SEAL LENGTH _____0.0 FT.

ANNULAR SEAL MATERIAL BENTONITE SLURRY NEAT CEMENT GROUT CEMENT BENTONITE GROUT NON-SLURRY BENTONITE OTHER

ANNULAR SEAL PLACED BY TREMIE GRAVITY PRESSURE GROUT THRU TREMIE

IF NON-SLURRY BENTONITE CHIPS GRANULAR PELLETS OTHER

MULTIPLE CASED OR NESTED WELLS

ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

(OPTIONAL)

LAT. ___38 * ___12' _38.5"
LONG. ___90 * ___28' _29.1"

COUNTY
JEFFERSON_____

ELEVATION _____0 FT.

LEGAL LOCATION (OPTIONAL)
_____ 1/4 _____ 1/4 _____ 1/4
SEC. _____0 TWN. _____0 RNG. _____0

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION

FIRST ENCOUNTER GROUNDWATER 0.0 FT
STATIC WATER LEVEL (swl) 0.0 FT
WELL COMPLETION DATE 11/17/2006
PUMP SET DEPTH FT
WELL YIELD 0.0 GPM
PUMP INSTALLATION DATE

OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

TOTAL DEPTH _____12.0 FEET

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE	PERMIT NUMBER	DATE
x JOHN BOSTWICK_____	003839____	_____
WELL DRILLER SIGNATURE	PERMIT NUMBER	DATE
x PAUL GUERREIN_____	001187____	_____
PUMP INSTALLER SIGNATURE	PERMIT NUMBER	DATE
pump info required for extraction/recovery wells		
x _____	_____	_____

COPY

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO	DATE RECEIVED
00113246	01/11/2007
CR NO	

STATE CERT NO	APPROVED DATE	CHECK NO.
A144452	01/12/2007	80856

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

DATE ENTERED	ROUTE	REVENUE NO.
PHASE 1 PHASE 2 PHASE 3 01/11/2007 01/11/2007 01/11/2007	PCD	011107

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

[X] MONITORING [ ] GAS MONITORING [ ] EXTRACTION [ ] RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) [ ] WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

[X] ABOVE GROUND [ ] FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH 2.0 IN.

PROTECTIVE CASE MATERIAL [X] STEEL [ ] ALUMINUM [ ] PLASTIC [ ] OTHER CASE DIAMETER 4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER 2.0 IN. RISER PIPE LENGTH 10.0 FT. RISER HOLE DIAMETER 8.0 IN.

RISER PIPE MATERIAL [X] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

RISER PIPE WEIGHT [X] SCH40 [ ] SCH80 [ ] 304/316 [ ] OTHER _____

DRILLING METHOD [ ] AUGER [ ] PUSH [ ] OTHER

SCREEN DIAMETER 2.0 IN. SCREEN LENGTH 5.0 FT.

SCREEN MATERIAL [ ] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER 8.0 IN.

BENTONITE SEAL LENGTH 3.0 FT.
SEAL ABOVE SWL [ ] SEAL BELOW SWL [X]
SEAL ABOVE SWL WAS HYDRATED [ ]

PRIMARY FILTER PACK LENGTH 10.0 FT. PRIMARY FILTER MATERIAL [ ] SAND [ ] PREPACKED
SECONDARY FILTER PACK LENGTH 0.0 FT.

ANNULAR SEAL LENGTH 0.0 FT. ANNULAR SEAL MATERIAL [ ] BENTONITE SLURRY [ ] NEAT CEMENT GROUT
ANNULAR SEAL PLACED BY [ ] TREMIE [ ] CEMENT BENTONITE GROUT [ ] NON-SLURRY BENTONITE [ ] OTHER
[ ] GRAVITY [ ] PRESSURE GROUT THRU TREMIE IF NON-SLURRY BENTONITE [ ] CHIPS [ ] GRANULAR [ ] PELLETS [ ] OTHER

[ ] MULTIPLE CASED OR NESTED WELLS
ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

LAT. 38 * 12' 38.3" COUNTY
LONG. 90 * 28' 29.9" JEFFERSON

(OPTIONAL)
ELEVATION 0 FT.

LEGAL LOCATION (OPTIONAL)
_____ 1/4 _____ 1/4 _____ 1/4
SEC. 0 TWN. 0 RNG. 0

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION

TOTAL DEPTH 14.5 FEET

FIRST ENCOUNTER GROUNDWATER 0.0 FT	PUMP SET DEPTH FT	
STATIC WATER LEVEL (swl) 0.0 FT	WELL YIELD 0.0 GPM	
WELL COMPLETION DATE 11/14/2006	PUMP INSTALLATION DATE	

OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE x JOHN BOSTWICK	PERMIT NUMBER 003839	DATE
WELL DRILLER SIGNATURE x PAUL GUERREIN	PERMIT NUMBER 001187	DATE
PUMP INSTALLER SIGNATURE pump info required for extraction/recovery wells x	PERMIT NUMBER	DATE

COPY

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

REF NO	DATE RECEIVED
00113244	01/11/2007
CR NO	

STATE CERT NO	APPROVED DATE	CHECK NO.
A144450	01/12/2007	80856

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

DATE ENTERED	ROUTE	REVENUE NO.
PHASE 1 PHASE 2 PHASE 3 01/11/2007 01/11/2007 01/11/2007	PCD	011107

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME
WESTINGHOUSE ELECTRIC LLC

TELEPHONE (OPTIONAL)

DNR VARIANCE NUMBER _____
Applicable only if variance was obtained from DNR

OWNER ADDRESS
300 HWY P

CITY
HEMATITE

STATE
MO

ZIP
63028

SITE NAME
WESTINGHOUSE ELECTRIC CO

CONTACT NAME

SITE ADDRESS (IF DIFFERENT THAN ABOVE)
3300 HWY P

CITY

STATE
MO

ZIP

PROPOSED USE OF WELL

[X] MONITORING [ ] GAS MONITORING [ ] EXTRACTION [ ] RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) [ ] WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

[X] ABOVE GROUND [ ] FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH 2.0 IN.

PROTECTIVE CASE MATERIAL [X] STEEL [ ] ALUMINUM [ ] PLASTIC [ ] OTHER CASE DIAMETER 4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER 2.0 IN. RISER PIPE LENGTH 8.5 FT. RISER HOLE DIAMETER 8.0 IN.

RISER PIPE MATERIAL [X] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

RISER PIPE WEIGHT [X] SCH40 [ ] SCH80 [ ] 304/316 [ ] OTHER _____

DRILLING METHOD [ ] AUGER [ ] PUSH [ ] OTHER

SCREEN DIAMETER 2.0 IN. SCREEN LENGTH 5.0 FT.

SCREEN MATERIAL [ ] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER 8.0 IN.

BENTONITE SEAL LENGTH 3.0 FT.
SEAL ABOVE SWL [ ] SEAL BELOW SWL [X]
SEAL ABOVE SWL WAS HYDRATED [ ]

PRIMARY FILTER PACK LENGTH 10.0 FT. PRIMARY FILTER MATERIAL [ ] SAND [ ] PREPACKED
SECONDARY FILTER PACK LENGTH 0.0 FT.

ANNULAR SEAL LENGTH 0.0 FT. ANNULAR SEAL MATERIAL [ ] BENTONITE SLURRY [ ] NEAT CEMENT GROUT
ANNULAR SEAL PLACED BY [ ] TREMIE [ ] CEMENT BENTONITE GROUT [ ] NON-SLURRY BENTONITE [ ] OTHER
[ ] GRAVITY [ ] PRESSURE GROUT THRU TREMIE IF NON-SLURRY BENTONITE [ ] CHIPS [ ] GRANULAR [ ] PELLETS [ ] OTHER

[ ] MULTIPLE CASED OR NESTED WELLS
ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

LAT. 38 * 12' 38.4" COUNTY
LONG. 90 * 28' 28.2" JEFFERSON

(OPTIONAL) LEGAL LOCATION (OPTIONAL)
ELEVATION 0 FT. 1/4 1/4 1/4
SEC. 0 TWN. 0 RNG. 0

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION

TOTAL DEPTH 14.0 FEET

FIRST ENCOUNTER GROUNDWATER 0.0 FT PUMP SET DEPTH FT
STATIC WATER LEVEL (swl) 0.0 FT WELL YIELD 0.0 GPM
WELL COMPLETION DATE 11/15/2006 PUMP INSTALLATION DATE
OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

	PERMIT NUMBER	DATE
PRIMARY CONTRACTOR SIGNATURE x JOHN BOSTWICK	003839	
WELL DRILLER SIGNATURE x PAUL GUERREIN	001187	
PUMP INSTALLER SIGNATURE pump info required for extraction/recovery wells x		

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DIVISION OF ENVIRONMENTAL QUALITY
(573) 368-2165

MONITORING WELL AND ENVIRONMENTAL INJECTION WELL RECORD

REF NO	00113243
CR NO	
DATE RECEIVED	01/11/2007
STATE CERT NO APPROVED DATE	A144449 01/12/2007
CHECK NO.	80856
DATE ENTERED	PHASE 1 01/11/2007 PHASE 2 01/11/2007 PHASE 3 01/11/2007
ROUTE	PCD
REVENUE NO.	011107

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME: WESTINGHOUSE ELECTRIC LLC
TELEPHONE (OPTIONAL):
DNR VARIANCE NUMBER _____ Applicable only if variance was obtained from DNR

OWNER ADDRESS: 300 HWY P
CITY: HEMATITE
STATE: MO
ZIP: 63028

SITE NAME: WESTINGHOUSE ELECTRIC CO
CONTACT NAME:

SITE ADDRESS (IF DIFFERENT THAN ABOVE): 3300 HWY P
CITY:
STATE: MO
ZIP:

PROPOSED USE OF WELL

[X] MONITORING [ ] GAS MONITORING [ ] EXTRACTION [ ] RETURN OR INJECTION (UIC PERMIT MAY BE NEEDED) [ ] WATER LEVEL MEASUREMENT (only)

TYPE OF SURFACE COMPLETION

[X] ABOVE GROUND [ ] FLUSH CASE LENGTH 60.0 IN. CASE HOLE DEPTH 2.0 IN.

PROTECTIVE CASE MATERIAL [X] STEEL [ ] ALUMINUM [ ] PLASTIC [ ] OTHER CASE DIAMETER 4.0 IN. CASE HOLE DIAMETER 24.0 IN.

CONSTRUCTION

RISER PIPE DIAMETER 2.0 IN. RISER PIPE LENGTH 8.5 FT. RISER HOLE DIAMETER 8.0 IN.

RISER PIPE MATERIAL [X] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

RISER PIPE WEIGHT [X] SCH40 [ ] SCH80 [ ] 304/316 [ ] OTHER

DRILLING METHOD [ ] AUGER [ ] PUSH [ ] OTHER

SCREEN DIAMETER 2.0 IN. SCREEN LENGTH 3.0 FT.

SCREEN MATERIAL [ ] PLASTIC [ ] STEEL [ ] PTFE [ ] OTHER

SCREEN HOLE DIAMETER IF DIFFERENT FROM RISER 8.0 IN.

BENTONITE SEAL LENGTH 3.0 FT.
SEAL ABOVE SWL [ ] SEAL BELOW SWL [X]
SEAL ABOVE SWL WAS HYDRATED [ ]

PRIMARY FILTER PACK LENGTH 8.0 FT. PRIMARY FILTER MATERIAL [ ] SAND [ ] PREPACKED
SECONDARY FILTER PACK LENGTH 0.0 FT.

ANNULAR SEAL LENGTH 0.0 FT. ANNULAR SEAL MATERIAL [ ] BENTONITE SLURRY [ ] NEAT CEMENT GROUT
ANNULAR SEAL PLACED BY [ ] TREMIE [ ] CEMENT BENTONITE GROUT [ ] NON-SLURRY BENTONITE [ ] OTHER
[ ] GRAVITY [ ] PRESSURE GROUT THRU TREMIE IF NON-SLURRY BENTONITE [ ] CHIPS [ ] GRANULAR [ ] PELLETS [ ] OTHER

[ ] MULTIPLE CASED OR NESTED WELLS
ATTACH AS-BUILT DIAGRAMS showing constructions details with type, length and diameter of material and length and diameter of bores

GPS LOCATION OF WELL

LAT. 38 * 12' 38.5" COUNTY
LONG. 90 * 28' 29.1" JEFFERSON

(OPTIONAL) LEGAL LOCATION (OPTIONAL)
ELEVATION 0 FT. 1/4 1/4 1/4
SEC. 0 TWN. 0 RNG. 0

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION

TOTAL DEPTH 12.0 FEET

FIRST ENCOUNTER GROUNDWATER 0.0 FT
STATIC WATER LEVEL (swl) 0.0 FT
WELL COMPLETION DATE 11/17/2006
PUMP SET DEPTH FT
WELL YIELD 0.0 GPM
PUMP INSTALLATION DATE

OTHER INFORMATION OR LOCATION DATA (OPTIONAL)

I HEREBY CERTIFY THE WELL/PUMP INFORMATION DESCRIBED HEREIN IS TRUE AND ACCURATE

PRIMARY CONTRACTOR SIGNATURE	PERMIT NUMBER	DATE
x JOHN BOSTWICK	003839	
WELL DRILLER SIGNATURE	PERMIT NUMBER	DATE
x PAUL GUERREIN	001187	
PUMP INSTALLER SIGNATURE	PERMIT NUMBER	DATE
pump info required for extraction/recovery wells x		

COPY

APPENDIX C: ANALYTICAL RESULTS

(Provided on Accompanying Compact Disc)