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Final

U.S. Army Corps of Engineers

Site Inspection Report
Staten Island Warehouse FUSRAP Site
Staten Island, New York

Prepared for
U.S. Army Corps of Engineers

Contract No. W912DQ-10-D-3012
Delivery Order 0004

Prepared by
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November 2013
March 2014

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CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

GEO Consultants, LLC (GEO) completed the Final Site Inspection (SI) Report for the Site Inspection at the former Staten Island Warehouse FUSRAP Site located in Staten Island, New York. Notice is hereby given that an Independent Technical Review (ITR) has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the ITR, compliance with established policy, principles, and procedures was verified. This included review of procedures to be used to create a product that meets the customer's needs, consistent with law and existing U.S. Army Corps of Engineers (USACE) policy.

Todd Buchanan
Project Manager

11/26/13
Date

Craig Rightmire, P.G.
ITR Team Member

11/26/13
Date

Kim Morris
Quality Assurance Reviewer

11/26/13
Date

Significant concerns and the explanation of the resolution are as follows:

None.

As noted above, all concerns resulting from the independent technical review of the project have been considered.

Larry Copeland, P.E.
Operations Manager, GEO Consultants, LLC

11/27/13
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CONTENTS

LIST OF FIGURES vii

LIST OF TABLES viii

APPENDICES viii

ACRONYMS AND ABBREVIATIONS ix

EXECUTIVE SUMMARY xi

1. INTRODUCTION 1
1.1 PURPOSE AND OBJECTIVES 1
1.2 REPORT ORGANIZATION 1

2. FORMER STATEN ISLAND WAREHOUSE DESCRIPTION AND HISTORY 3
2.1 SITE LOCATION AND FEATURES 3
2.2 SITE OPERATION AND HISTORY 3
2.3 CURRENT LAND USE 4

3. SETTING 5
3.1 TOPOGRAPHY 5
3.2 GEOLOGY 5
3.3 HYDROGEOLOGY 5
3.4 CLIMATE 6

4. PREVIOUS INVESTIGATIONS 7
4.1 OAK RIDGE NATIONAL LABORATORY (1980) 7
4.2 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (1992) 7
4.3 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (2003) 7
4.4 U.S. ENVIRONMENTAL PROTECTION AGENCY (2008) 7

5. SITE INSPECTION FIELD ACTIVITIES 9
5.1 INTRODUCTION 9
5.2 SITE PREPARATION 10
5.3 SURFACE GAMMA SURVEYS 10
5.4 RADIOLOGICAL CHARACTERIZATION SAMPLING 10
5.4.1 Subsurface Soil Sample Collection 11
5.4.2 Downhole Gamma Logging 12
5.4.3 Surface Soil Sample Collection 13
5.4.4 Groundwater Sample Collection 13
5.5 TEST PIT EXCAVATION 14
5.6 QUALITY CONTROL SAMPLES 14
5.7 WASTE CHARACTERIZATION 14
5.8 INVESTIGATION DERIVED WASTE AND EQUIPMENT SCANS 15

6. SITE CONTAMINATION, EXPOSURE PATHWAYS, AND TARGETS 17
6.1 SOIL EXPOSURE PATHWAY 17
6.1.1 Targets 17
6.1.2 Radiological Contamination Results 17
6.1.3 Non-Radiological Contamination Results 20
6.2 GROUNDWATER EXPOSURE PATHWAY 22
6.2.1 Targets 22
6.2.2 Results 23

6.3 SURFACE WATER EXPOSURE PATHWAY 23
6.3.1 Targets 24
6.3.2 Results 24
7. CONCLUSIONS AND RECOMMENDATIONS 25
7.1 CONCLUSIONS 25
7.1.1 Evaluation of Uranium Present within the Staten Island Warehouse Site. 25
7.1.2 Evaluation of Radium Present within the Staten Island Warehouse Site. 26
7.2 RECOMMENDATIONS 26
8. REFERENCES 27

LIST OF FIGURES

Figure 1-1. Staten Island Warehouse FUSRAP Site Location Map
Figure 2-1a. Staten Island Warehouse FUSRAP Site Aerial April 28, 1940
Figure 2-1b. Staten Island Warehouse FUSRAP Site Aerial April 23, 1961
Figure 2-1c. Staten Island Warehouse FUSRAP Site Aerial March, 1988
Figure 2-1d. Site Boundary Changes Over Time Due to Wave Erosion
Figure 2-2. Beach Location
Figure 4-1. 1980 ORNL Gamma Survey Results and Soil Sample Locations
Figure 4-2. 1992 NYSDEC Staten Island Warehouse Gamma Survey Results
Figure 5-1. Proposed and Executed Gamma Survey Boundaries
Figure 5-2. Gamma Walkover Survey Results
Figure 5-3. Subsurface Soil Sample Locations
Figure 5-4. Surface Soil Sample and Test Pit Locations
Figure 5-5. Groundwater Sample Locations
Figure 5-6. Non-Radiological Waste Characterization Sample Locations
Figure 6-1. Hurricane Irene Storm Surge
Figure 6-2. Surface Soil Exceedances (Th-232)
Figure 6-3a. Surface Soil Exceedances (Ra-226)
Figure 6-3b. 0-5 ft Interval Soil Exceedances (Ra-226)
Figure 6-3c. 5-8 ft Interval Soil Exceedances (Ra-226)
Figure 6-4a. Surface Soil Exceedances (U-234)
Figure 6-4b. 0-5 ft Interval Soil Exceedances (U-234)
Figure 6-4c. 5-8 ft Interval Soil Exceedances (U-234)
Figure 6-5. 0-5 ft Interval Soil Exceedances (U-235)
Figure 6-6a. Surface Soil Exceedances (U-238)
Figure 6-6b. 0-5 ft Interval Soil Exceedances (U-238)
Figure 6-6c. 5-8 ft Interval Soil Exceedances (U-238)

LIST OF TABLES

Table 4-1. Previous sampling results.
Table 5-1. Results of radiation subsurface soil samples (alpha and gamma spectroscopy) for the Staten Island Warehouse Site.
Table 5-2. Downhole gamma scan results (cpm).
Table 5-3. Results of radiation surface soil samples (alpha and gamma spectroscopy) for the Staten Island Warehouse Site.
Table 5-4. Water quality parameters for groundwater samples collected from the Staten Island Warehouse Site.
Table 5-5. Results of radiation groundwater samples for the Staten Island Warehouse Site.
Table 5-6. Test pit gamma scan results.
Table 5-7. Tidal Chart for the Staten Island Warehouse Site.
Table 5-8. Results of metal characterization samples (Methods 6020A and 7471A) for the Staten Island Warehouse Site.
Table 5-9. Results of SVOC characterization samples (Method 8270C) for the Staten Island Warehouse Site.
Table 5-10. Results of VOC characterization samples (Method 8260B) for the Staten Island Warehouse Site.
Table 5-11. Results of pesticide characterization samples (Method 8081A) for the Staten Island Warehouse Site.
Table 5-12. Results of PCB characterization samples (Method 8082) for the Staten Island Warehouse Site.
Table 5-13. Results of herbicide characterization samples (Method 8051A) for the Staten Island Warehouse Site.
Table 6-1. Screening levels and background activities for radionuclides of potential concern in soils for the Staten Island Warehouse site.
Table 6-2. Results of radiation soil samples (alpha and gamma spectroscopy) taken outside of the Radiologically Contaminated Area for the Staten Island Warehouse Site.
Table 6-3. Screening levels for radionuclides of potential concern in groundwater for the Staten Island Warehouse site.
Table 7-1. Evaluation of surface soil samples from the Staten Island Warehouse Site.
Table 7-2. Evaluation of subsurface soil samples from the Staten Island Warehouse Site.

APPENDICES

Appendix A. Field Logs, Sampling Forms, Daily Quality Control Report, Summary Reports, and Chain of Custody Forms (electronic only)
Appendix B. Boring Logs
Appendix C. Quality Control Summary Reports
Appendix D. Photograph Logs
Appendix E. Laboratory Data Packages (electronic only)
Appendix F. Electronic Data Deliverables (electronic only)
Appendix G. GIS Data (electronic – included in Final version only)
Appendix H. Radiological Scan Data Sheets

ACRONYMS AND ABBREVIATIONS

˚F	degrees Fahrenheit
ac	acre
ADM	Archer-Daniels Midland Company
AOC	area of concern
bgs	below ground surface
Bi	bismuth
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chain of custody
cpm	counts per minute
DOE	U.S. Department of Energy
DTS	Dolan Transportation Services Inc.
FOM	Field Operations Manager
ft	foot/feet
FUSRAP	Formerly Utilized Sites Remedial Action Program
GEO	GEO Consultants, LLC
GIS	Geographic Information System
GPS	Global Positioning System
IDW	investigation derived waste
K	potassium
MARSAME	Multi-Agency Radiation Survey and Assessment of Materials and Equipment Manual
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCL	Maximum Contaminant Level
MDC	Minimal Detectable Concentration
MED	Manhattan Engineering District
MS	matrix spike
MSD	matrix spike duplicate
mya	million years ago
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NYSDEC	New York State Department of Environmental Conservation
ORNL	Oak Ridge National Laboratory
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PRG	Preliminary Remediation Goal
PVC	polyvinyl chloride
PWP	Project Work Plan
QAPP	Quality Assurance Project Plan
QC	Quality Control
QCSR	Quality Control Summary Report
Ra	radium
RCRA	Resource Conservation and Recovery Act
SI	Site Inspection
SIW	former Staten Island Warehouse
SVOC	semi-volatile organic compound
Th	thorium
U	uranium
UPL	Upper Prediction Limit
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

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EXECUTIVE SUMMARY

The former Staten Island Warehouse (SIW) is located in Staten Island, New York (Figure 1-1). This report documents a Site Inspection (SI) during which soil and groundwater samples were collected to identify the level of radioactive substances and determine if hazardous radioactive substances have impacted specific targets. The SI consists of a review of existing data from previous investigations and a comparison of the new and existing data against background values and risk-based screening criteria. The SI was performed by GEO Consultants, LLC (GEO) for the U.S. Army Corps of Engineers (USACE) under the Formerly Utilized Sites Remedial Action Program (FUSRAP), in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). In addition, the evaluation follows the guidance and policy outlined in *Environmental Quality-Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs (USACE Engineer Regulation, ER 200-1-4, 30 August 2003) (USACE 2003)* and *Guidance for Performing Site Inspections Under CERCLA (USEPA 1992).*

The SIW was used to store high-grade Belgian Congo uranium ore from 1939 to 1942. Previous investigations conducted at the former Archer-Daniels Midland Company property have determined the presence of residual radiological contamination in soil. The primary objective of this SI is to provide sufficient information to determine the need for a full Remedial Investigation, or other actions in accordance with CERCLA, based on data collected during the SI and previous investigations. The SI activities are outlined in the Revised Scope of Work, dated 21 December 2010 (USACE 2010), and the Project Work Plan [PWP (USACE 2011a)].

Four previous investigations have been performed at the property. A surface gamma survey of the parcel formerly occupied by the warehouse which housed the uranium ore was conducted by Oak Ridge National Laboratory (ORNL) in 1980. This survey yielded background gamma levels and a 20 meter by 40 meter area of elevated gamma radiation in the northwest corner of the property. Also, three soil samples were collected and analyzed for selected radionuclides. Elevated levels of Uranium-238 (U-238) and Radium-226 (Ra-226) were found in a sample collected from a location in the northwest corner. A radiological investigation of the property was conducted in 1992 by the New York State Department of Environmental Conservation (NYSDEC). The area identified previously as yielding elevated gamma radiation was confirmed in this study. Six soil cores were collected from this area from the surface to 18 inches below ground surface (bgs). The cores were sampled and analyzed for radionuclides. Another investigation performed by NYSDEC in 2003 included a preliminary radiological survey on the parcel of land currently occupied by Federal Express, across Richmond Terrace from the SIW Site. A rock pile was the only area found to contain elevated rate counts which were approximately three times the background. In 2008, the U.S. Environmental Protection Agency [USEPA (in cooperation with NYSDEC and the New York City Department of Health)] conducted a surface gamma survey on the vehicle-accessible area of the property. Six surface soil samples were also collected from the previously-identified area of elevated gamma radiation and analyzed for selected radionuclides.

Field work conducted during this SI in July 2011 included setting up work zones and temporary work stations and restroom facilities, removing brush and debris, performing a surface gamma survey, sampling surface and subsurface soil for radionuclides, sampling groundwater for radionuclides, excavating test pits, and sampling subsurface soil for waste characterization (metals, volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, pesticides, herbicides). Downhole gamma logging was performed in each borehole [up to 8 feet (ft) bgs].

Surface and subsurface soil analytical results were compared against screening levels provided in the Quality Assurance Project Plan [QAPP (USACE 2011c)]. The screening levels for each given

radionuclide were set to the maximum of the USEPA Residential Preliminary Remediation Goals (PRGs) for radionuclides or background activities determined in previous investigations. Groundwater analytical results were compared against USEPA Tap Water PRGs and Maximum Contaminant Levels (MCLs) for Radionuclides.

The SI confirmed the presence of elevated radionuclide activities in the 20 meter by 40 meter area identified in previous investigations. Results from the SI showed that the majority of radiological soil contamination is contained within the upper 5 ft bgs. It was determined that the majority of the soil contamination was found within the elevated gamma radiation area. All of the isotope-specific activity data in unfiltered and filtered groundwater samples are below the USEPA MCLs, which were established as the screening level criteria.

It cannot be determined from a technical perspective, whether residual contamination at the Site is attributable to the Nation's early atomic energy program. No evidence could be found indicating federal responsibility for the contamination; therefore it is recommended that no further action be taken at the Site under the FUSRAP program. However, if an appropriate responsible party or cleanup program is identified in the future, a more detailed analysis such as a Remedial Investigation is recommended to determine the bounds of contamination by further investigating the following.

Although the lateral extent of soils that exceed screening levels for radionuclides has been adequately defined, there remains some uncertainty regarding the vertical extent of radionuclide contamination. Due to recovery problems experienced during direct push soil borings, further vertical investigation may be required as the SIW Site moves through the CERCLA process. There were some operational difficulties associated with coring so that the depth of contamination is not clearly resolved. Although these operational difficulties prevented the team from identifying the exact depth of contamination, the investigation results show that contamination does not exist beyond 5 ft deep.

Beach erosion has occurred along the northern edge of the SIW, suggesting that some radionuclide-contaminated soil may be gradually transported from the Site into the near-shore environment of the Kill Van Kull. It is recommended that sediment samples off-shore of the most contaminated part of the SIW Site be collected and analyzed for the same radionuclides addressed in this investigation to determine if any significant risk exists.

1. INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

This report documents a Site Inspection (SI) that was conducted at the former Staten Island Warehouse (SIW), located in Staten Island, New York (Figure 1-1). The SI was performed by GEO Consultants, LLC (GEO) for the U.S. Army Corps of Engineers (USACE) under the Formerly Utilized Sites Remedial Action Program (FUSRAP) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). In addition, the evaluation follows the guidance and policy outlined in *Environmental Quality-Formerly Utilized Sites Remedial Action Program (FUSRAP) - Site Designation, Remediation Scope, and Recovering Costs* (USACE Engineer Regulation, ER 200-1-4, 30 August 2003) (USACE 2003).

The SIW Site was a commercial site owned by Archer-Daniels Midland Company (ADM) that was used to store high-grade Belgian Congo uranium ore from 1939 to 1942. The former ADM warehouse property includes areas both north and south of Richmond Terrace. Work done by the USACE under FUSRAP addresses what is referred to as the SIW Site, which is an area of approximately 1.25 acres on the north side of Richmond Terrace, directly below the Bayonne Bridge (Figure 1-1). This 1.25 acre area was identified as the Site through the eligibility determination from DOE, stating that the northwest quadrant of the entire property was eligible for the FUSRAP.

Previous investigations conducted at the property have determined the presence of residual contamination in some areas. The primary objective of this SI is to provide sufficient information to determine the need for a full Remedial Investigation or other actions in accordance with CERCLA, based on data collected during the SI and previous investigations. The SI activities are outlined in the Revised Scope of Work, dated 21 December 2010 (USACE 2010) and the Project Work Plan [PWP (USACE 2011a)].

1.2 REPORT ORGANIZATION

The contents and organization of this report are in accordance with U.S. Environmental Protection Agency (USEPA) *Guidance for Conducting Site Inspections Under CERCLA* (USEPA 1992). The format of this report is in general accordance the USEPA guidance.

- Section 1 presents an introduction to the SI, including project purpose and objectives and the organization of this SI report.
- Section 2 describes the geographical location and current features of the SIW Site. The operational and site history, including previous owners and property uses, are also discussed.
- Section 3 focuses on the physical setting of the SIW Site based on the relevant literature and information from the current and previous investigations. The topography, geology, hydrogeology, climate, and demographics of the SIW Site are described.
- Section 4 provides an overview of previous investigations conducted at the property. A brief overview of each investigation, including work performed, results, conclusions, and recommendations, are presented in this section.
- Section 5 presents general information on the project field activities conducted during the SI and the methods used in the current study for data acquisition.

- Section 6 presents the results of the SI. This section discusses soil and groundwater data resulting from the current investigation and the data sets previously developed for the property by others. These data identify the contaminants detected in the media at the property. A discussion of the distribution of these contaminants is also provided and a summary of the investigation and risk screening is presented.
- Section 7 presents a summary and conclusions from the results found during the SI.
- Section 8 is a list of the references used in preparing the SI Report.
- Figures and Tables are located immediately following the text.
- Appendix A contains quality forms completed in the field including field logs, sampling forms, daily quality control reports, summary reports, and chain of custody forms.
- Appendix B contains all boring logs recorded during subsurface soil sampling.
- Appendix C contains the Quality Control Summary Report for Radiological Samples and the Quality Control Summary Report for Characterization Samples.
- Appendix D contains photograph logs of the SIW Site and field work.
- Appendix E provides the laboratory data packages [electronic copy only, found on compact disk (CD) located at the front of document].
- Appendix F is the Electronic Data Deliverables (electronic copy only, found on CD located at the front of document).
- Appendix G is the Geographic Information System (GIS) data (electronic copy only, found on CD located at the front of document).
- Appendix H includes the Radiological Scan Data Sheets

2. FORMER STATEN ISLAND WAREHOUSE DESCRIPTION AND HISTORY

2.1 SITE LOCATION AND FEATURES

The SIW Site is located at 2351 Richmond Terrace, Staten Island, Richmond County, New York, 10302 (Figure 1-1). The SI work area consists of approximately 1.25 acres (ac) bounded by the Kill Van Kull tidal strait to the north and west. The SIW Site is located within the vicinity of coordinates 40˚38'25'N and 74˚08'31"W.

The SIW Site is a manmade structure that was constructed in approximately 1836 and is described as a solid-fill pier retained by timber bulk heads (USACE 1996). It was expanded in about 1890 with similar, or timber, sheet pile bulkheads. The SIW Site is entirely fenced, except along the Kill Van Kull shoreline, and is situated in a commercial and industrial area. The Bayonne Bridge crosses immediately overhead of the SIW Site to the west. The SIW Site is relatively flat and portions are paved.

A photographic analysis of the property for USEPA Region 2 (USEPA 2009a) presents an assessment of a series of aerial photographs taken from 1940 to 2003. It is especially clear in Figures 2-1a through 2-1d that from 1940 to 1978 the northern property boundary was sharp and well-defined, presumably by the back-filled area behind bulkheads or by wharves built on piers over the Kill Van Kull. In fact, the 1947 photograph (and other photographs taken in 1940, 1953, and 1961) illustrates that barges and other types of vessels were docking immediately adjacent to the shore on the northern and western sides of the peninsula. Later photographs (first clearly observed in the 1988 photograph) indicate that the northern shoreline of the constructed peninsula, extending into the Kill van Kull, is no longer as sharply defined as in earlier photographs and appears to be somewhat modified. This is consistent with the apparent elimination of industrial activities at the property that USEPA (2009a) indicates began prior to the 1970 photograph. Deterioration or removal of the bulkheads that established the docking facilities for the property may be associated with changes in the shoreline. The change could also be attributed to the demolition of buildings, piers, wharves, or other structures. However, over the period of several investigations, beach erosion has been observed to be a contributing factor in the modified shoreline.

2.2 SITE OPERATION AND HISTORY

The SIW Site was owned by ADM and used by African Metals Corporation to store high-grade Belgian Congo uranium ore from 1939 to 1942. The uranium ore was later purchased free alongside ship by the Manhattan Engineering District (MED) in support of World War II activities. Ores were handled on the portion of the now privately-owned property north of Richmond Terrace. Other portions of the property south of Richmond Terrace and west of the SIW Site were divided and are not a part of the current investigation. The SIW Site has since been owned by multiple non-governmental entities including International Engineering Chemical Company (~1951-1953) and Puritan Petroleum Company (for fuel oil distribution, ~1965, unknown duration) (USACE 2011b). The former structures at the SIW Site, including the warehouse, have been demolished.

The original property owned by ADM was divided into three parcels which have changed ownership numerous times [Oak Ridge National Laboratory (ORNL) 1980]. One parcel is currently owned by the New York Port Authority, another is owned by Federal Express, and the last is owned by Dolan Transportation Services Inc. (DTS). The parcel owned by DTS includes the 20 meter by 40 meter area where radiological contamination was identified by the ORNL in 1980 (USEPA 2008) (Figure 4-1). At the time of the ORNL investigation, the parcel was owned by R.H.S. Realty Corporation (New York, New York). The U.S. Department of Energy (DOE) conducted an eligibility review in 1986 and

determined the Site was not eligible for FUSRAP based on contract language that indicated the government did not take possession of the ore until it was removed from the property.

In 1992, the New York State Department of Environmental Conservation (NYSDEC 1992) also performed surveys on the northwest portion of the property and confirmed the presence of radiological soil contamination in the same area as the ORNL investigation (Figure 4-1; data from this study are presented in Section 4). The area of confirmed contamination is currently fenced off from access from the Richmond Terrace Road. However, no fence is on the water side of the area of contamination. The general area of known contamination is overgrown and is sparsely littered with assorted forms of debris. Another investigation was performed by NYSDEC (2003) on the parcel of land south of Richmond Terrace from the project Site. This parcel, which was once a part of the property but is now occupied by Federal Express, was surveyed for radiological contamination (see Section 4.3).

In February 2008, the USEPA conducted a radiological survey of the property. This survey confirmed results of previous surveys identifying an area of low-level surface radioactive contamination (USEPA 2008) (data presented in Section 4). USEPA requested that DOE review the 1986 eligibility finding. The findings of the USEPA survey and additional contract language reviews indicating the Government took possession of the material free alongside ship (while on the property, prior to being loaded), led DOE to declare the SIW Site eligible for inclusion in the FUSRAP in October 2009. The SIW Site was then referred to USACE for appropriate action.

2.3 CURRENT LAND USE

The SIW Site and adjacent properties on the east and south are zoned for commercial use. The property to the west is owned by the Port Authority as part of the Bayonne Bridge area. The properties located along the east side of John Street are a mix of commercial and residential use. A rocky beach on the Kill Van Kull (Figure 2-2) bounds the northern portion of the property. The portion of the property that contains the SIW Site is currently vacant. A portion of the property to the east of the SIW Site is leased to a privately owned paving contractor company.

3. SETTING

3.1 TOPOGRAPHY

The topography of Staten Island ranges from steep hills to flat terrain (Soren 1988). The elevation of the SIW Site ranges from 3 to 9 ft above mean sea level to sea level at the shore. The maximum land-surface altitude in the northeastern part of Staten Island is about 405 ft (Soren 1988). The surface water runoff flows toward the northeast of the Site into the Kill Van Kull. According to Federal Emergency Management Agency (FEMA 2007), most of the SIW Site is in Zone AE [(EL 8) floodway area] while the southern and eastern portions of the SIW Site are in Zone X (other flood areas, that have average flood depths of less than 1 ft or drainage areas less than 1 square mile).

3.2 REGIONAL GEOLOGY

The soil underlying the SIW Site is the Laguardia-Ebbets complex with 0 to 8 percent slopes (USDA 2006). The average Laguardia is anthropogenic fill, which is generally 10 to 35 percent construction debris. The average thickness is 43 centimeters (16.93 inches), consisting of very dark grayish brown coarse sandy loam, brown sandy loam, and dark grayish brown very gravelly sandy loam (Hernandez undated). Beneath the fill is a layer of glaciated materials (Beimoff and Ohan 2003). The layering of these materials creates a thickness of 10 to 20 ft.

During the Paleozoic Era [approximately 540 to 250 million years ago (mya)], an altered remnant of oceanic crust broke from the North American plate; this remnant became the bedrock unit of Staten Island. This bedrock unit is made up of pale green, low-grade metamorphic serpentinite. This serpentinite unit is lens shaped and underlies an area of 22 square miles in the north central portion of Staten Island.

During the Mesozoic Era (approximately 250 to 65 mya), the Newark Basin formed as a result of divergent tectonic stresses. Three sedimentary units deposited within the basin: the Stockton Formation (sandstones and arkoses), the Lockatong Formation (siltstones and shales), and the Passaic Formation (shales, sandstones, conglomerates, and siltstones). During the Jurassic Period, the Palisades Sill, an igneous diabase of feldspar labradorite and pyroxene augite, intruded the layers of sedimentary rocks of the Newark Basin. The Raritan and Magothy Formations were deposited as coastal plain sediments from eroded highland material during the late Mesozoic Era.

During the Cenozoic Era (approximately 65 mya to present), the Wisconsin glacier retreated, leaving a layer of loose, unconsolidated, well-graded glacial till and outwash plain sediment consisting of very dark grayish brown coarse sandy loam, brown sandy loam, and dark grayish brown very gravelly sandy loam (Hernandez undated).

3.3 SITE-SPECIFIC GEOLOGY

Soil borings indicated the SIW Site was covered throughout with fill material comprised of a clay, sand, silt, gravel mix with scattered debris. The fill appeared to extend vertically the entire 8 ft below ground surface (bgs) in most borings and often contained debris such as brick and creosote treated wood chunks in the area where a pier/loading dock previously existed (See Figures 2-1a through 2-1d). Other debris recovered included rubber from tires, asphalt, and burn material.

3.4 HYDROGEOLOGY

Surficial materials at the SIW Site consist of a combination of artificial fill and native glacial till. This artificial fill was encountered to a depth of at least 5 ft in most soil borings (see boring logs located

in Appendix B). Although either type of material could be coarse enough to make an aquifer, the total thickness is expected to be on the order of only 10 to 20 ft, and the near-shore location of the SIW Site indicates that groundwater extracted from the surficial materials would be non-potable. Flow-direction in these surficial materials is expected to be generally northward (Soren 1988); however, tidal influence is high in this setting, and therefore, flow-direction varies somewhat with the tides.

These unconsolidated surficial materials are underlain by the Palisades Sill. The Jurassic Palisades Sill is a westerly dipping igneous body that intruded between Triassic-age sedimentary units, and is composed of diabase, a dark-colored, coarse-grained intrusive rock with negligible primary permeability. Secondary permeability created by joints and fractures may be present in the unit; however, a vertical hydraulic gradient in this near-shore setting would be expected to be upward in general, although tidal influence may periodically reverse the gradient.

Water levels measured in the field confirm the tidal influence experienced in the groundwater table at the Site. For example, water levels measured over several days and at various times in one of the boreholes (SIW-005 , see Figure 5-4, borehole location map presented in Section 5) show a variation in water level from approximately 3.9 ft bgs to 6.2 ft bgs. Other water levels observed in soil cores indicate a water table depth of approximately 3 to 5 ft bgs (see Appendix B).

3.5 CLIMATE

According to the Koppen Climate Classification, Staten Island has a humid subtropical climate similar to other areas within the region. The climate is influenced greatly by its close proximity to the Atlantic Ocean. The average annual temperature ranges from a low of 44.6 degrees Fahrenheit (ºF) to a high of 62.6 ºF. The lowest monthly average temperature occurs in January (23.1 ºF), and the highest monthly average temperature occurs in July (85.1 ºF). The average annual precipitation is 46.3 inches, with July being the highest month of precipitation (an average of 4.8 inches of rain). The annual snowfall for Staten Island is 29.4 inches, which mostly occurs in the months of January and February (Weatherbase 2011).

4. PREVIOUS INVESTIGATIONS

There have been several prior radiological investigations at the property that included surface gamma surveys, as well as a limited number of surface and subsurface soil samples that were analyzed for specific radionuclides. Results from these analyses are detailed in Table 4-1. These previous investigations are briefly summarized below.

4.1 OAK RIDGE NATIONAL LABORATORY (1980)

In 1980, ORNL performed a surface gamma survey of the property. Most of this area yielded background gamma levels. However, a relatively small area in the northwest corner of the property had elevated levels of gamma radiation, as illustrated in Figure 4-1. This region has been described as the 20 meter by 40 meter area of contamination at the property. In addition, three soil samples were collected and analyzed for selected radionuclides. The sample collected from the northwest corner (ST-1, Table 4-1) had elevated levels of Uranium-238 (U-238) and Radium-226 (Ra-226). The results of these analyses are presented in Table 4-1.

4.2 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (1992)

In 1992, the NYSDEC conducted further radiologic investigations at the property. A surface gamma survey of a limited part of the property was performed. The survey identified the presence of area of contamination that were at least three times higher than background, including an area that was over 167 times higher than background within the 20 meter by 40 meter region identified by ORNL (1980). A sketch map that identifies the background and elevated regions of the property is presented in Figure 4-2. In addition to the gamma survey, NYSDEC also collected six soil cores from within the 20 meter by 40 meter area covering a depth range from the surface to approximately 18 inches bgs. The cores were subsampled and a variety of radionuclides were analyzed in each sample. The results of these analyses are presented in Table 4-1.

Three samples from this investigation (072219, 072220, and 072221) showed poor precision. This was due to inadequate sample sizes for proper analysis. The material for these three samples was primarily organic (wood) material rather than soil. Therefore, the quantity of sample for analysis after drying was very small and was not sufficient to completely fill a standard gamma counting geometry.

4.3 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (2003)

In 2003, NYSDEC conducted a preliminary radiological survey on the parcel of land currently occupied by Federal Express, across Richmond Terrace from the SIW Site. The purpose of the survey was to assess the potential for radiological contamination. In all areas radiologically surveyed, only one area was found to be above background. This area was described as a rock pile and had count rates approximately three times the background. Based on the fact that the radiation readings were barely three-times background, this was not high-grade uranium ore (NYSDEC 2003).

4.4 U.S. ENVIRONMENTAL PROTECTION AGENCY (2008)

In 2008, USEPA, in cooperation with the NYSDEC and New York City Department of Health, conducted a surface gamma survey of the vehicle-accessible area of the property in the paved and unpaved parking areas. Additional gamma surveying took place along part of a fence line in the area, but the details regarding the location of this survey area are unclear. In addition to the gamma survey, six surface soil samples (0 to 6 inches bgs) were collected from the 20 meter by 40 meter area and were analyzed for selected radionuclides (Table 4-1).

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5. SITE INSPECTION FIELD ACTIVITIES

5.1 INTRODUCTION

Field activities associated with SI work occurred in July 2011 at the SIW and included the following:

- SIW Site preparation
- Surface gamma survey
- Surface soil sample collection
- Subsurface soil sample collection
- Groundwater sample collection
- Test pit excavation
- Collection of Quality Control (QC) samples [field duplicates and matrix spike (MS)/ matrix spike duplicate (MSD) pairs]
- Waste characterization sampling

Prior to beginning field work, the SIW Site was prepared by setting up support zones, exclusion zones, work areas, and temporary facilities, including job trailers and restrooms. The support zone and staging areas were used for vehicle and equipment parking, temporary storage of debris and chipped brush, and for equipment decontamination and waste storage. Additionally, all radiological scanning, water quality parameter, and air monitoring equipment was prepared and calibrated, and initial QC checks were performed on the equipment systems. The SIW Site was then cleared of weeds, limbs, brush, and trash. Following brush and debris removal, the SIW Site was scanned with ground penetrating radar to ensure no electric, gas, sewer, fiber optic, or other utilities were in danger of being hit or severed during drilling and excavating. Buried debris/rubble was not detected by the ground penetrating radar, which was designed primarily for the identification of pipes, cables, and metal.

Following the initial setup and preparation, a gamma walkover survey was performed to identify areas of elevated radiological readings. The surface gamma survey took place within an approximate 1.03 ac survey boundary, as shown in Figure 5-1. This boundary varied from the 1.25 ac boundary specified in the PWP (USACE 2011a), which is also illustrated in Figure 5-1. Differences in the two boundaries were a result of obstacles, including trash, debris, and ditches on the surface, which prevented survey equipment access to those particular areas. Results from the gamma survey indicated an area with elevated radiation levels [>10,000 counts per minute (cpm)] in the northwest corner, as shown on Figure 5-2. These results are consistent with the results of previous studies conducted by ORNL (1980) and NYSDEC (1992).

The subsurface and surface soil and groundwater sample locations are displayed in Figures 5-3, 5-4, and 5-5, respectively. The majority of the test pit excavation activities and soil and groundwater sampling, took place within the preliminary sampling area boundary, shown in Figure 5-1, and were originally detailed in the PWP (USACE 2011a). Some sample locations were shifted outside the preliminary boundary following real-time assessments of on-site conditions and discussions among the project team identified in the PWP (USACE 2011a). A total of 45 primary subsurface soil samples (plus five duplicate and three MS/MSD pair samples) were collected from 26 locations (Figure 5-3). A total of 45 primary surface soil samples (plus five duplicate and three MS/MSD pair samples) were collected from 45 locations (Figure 6-4), including 26 locations that were co-located with subsurface soil sample locations. Another four primary surface soil samples were collected for non-radiological characterization, along

with one duplicate and one MS/MSD sample pair. A total of six filtered and six unfiltered primary groundwater samples (plus one duplicate and one MS/MSD pair sample each) were collected from six locations (Figure 5-5, also co-located with subsurface sample locations). Four test pits were dug in the project area to a depth of 6 ft (Figure 5-3).

5.2 SITE PREPARATION

Upon arrival at the SIW Site a large portion of the area of concern (AOC), excluding the beach and paved areas, was covered with overgrown brush and weeds. Additionally, the SIW Site was littered with trash and debris such as limbs, used tires, chairs, cans, and bottles. Prior to performing any utilities clearing or project work related to radiological gamma surveys, drilling, or sample collection, the SIW Site was cleared of brush and weeds with the use of grass whips and string trimmers modified with metal blades. All trash and debris encountered in the AOC were placed in piles or moved to locations which would not impede planned project activities. Trash and debris located in inaccessible areas were left in place.

Additional project setup tasks included establishing delineation of work zones, support zones, and staging areas; setup and calibration of equipment; and calibration and initial QC checks of instrumentation and instrument systems. Initial project setup also included installation of temporary facilities including trailers, mobile restrooms, utilities, consumable materials, and other support equipment, including provisions for security and communications.

5.3 SURFACE GAMMA SURVEYS

Following clearing of brush and debris, the gamma walkover survey was performed consistent with Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM 2000) protocols. These surveys were performed using a Ludlum Measurements Model 44-10 (i.e., 2 inch by 2 inch) thallium-activated sodium iodide [NaI(Tl)] gamma scintillation detector interconnected to a Ludlum Model 2221 Scaler/Ratemeter and Trimble Global Positioning System (GPS). The survey was performed by walking relatively straight parallel lines in approximately 1 meter spacings over an area while moving the detector in a serpentine motion, 2 to 4 inches above the ground surface. Count rate data from the ratemeter/scaler and position information from the GPS were collected once per second. Count rate and position information was downloaded periodically to a computer for evaluation, which included plotting the data onto a project site map and statistical assessment. Statistical assessment included color coding of count rate information to facilitate identification of those portions of the SIW Site exhibiting count rates that were radiologically elevated relative to the SIW Site background count rates (see Figure 5-2). A count rate for background reporting levels of 10,000 cpm was determined by using the gamma walkover scan data from the east and south of the known elevated radiological area. The mean count rate of these two areas (6,800 cpm) plus the recommended MARSSIM control limits of three standard deviations (2,400 cpm) was used and rounded up to nearest 1000 cpm, based on professional judgment. This approach provided a significantly reduced false positive rate which facilitated the efficient use of limited samples. The color coding facilitated the investigation of areas with elevated count rates. After completion of data processing, the contoured results of the survey were returned to the Field Operations Manager (FOM) and USACE Technical Manager for evaluation. Surface and subsurface soil sample locations were subsequently selected by the Project Team, based in part on the results of the gamma walkover survey.

5.4 RADIOLOGICAL CHARACTERIZATION SAMPLING

Surface and subsurface soil characterization samples were collected according to the methods presented in the PWP (USACE 2011a) and are discussed in the subsections below. Sampling consisted of the following:

- Surface samples were obtained from within the top 2 ft of soils.
- Subsurface soil samples were collected with a direct-push drilling rig using a macro-sampler to a target depth of 8 ft.
- Biased surface and subsurface samples were obtained from locations identified by the gamma survey or placed at locations where the surface gamma walkover survey could not be performed due to obstructions or heavy vegetation.
- Biased samples were collected from the first 2 ft lift of each test pit, identified by elevated count rates observed during gamma logging of the soil pile.
- In addition to the biased samples, systematic samples from surface and subsurface locations were distributed throughout the sampling area, including areas where background surface gamma activities were measured (compare Figures 5-3 and 5-4 to Figure 5-2).
- Soil samples were located using GPS referenced to North American Datum (NAD) 1983, State Plane New York Long Island Zone 3104, U.S. feet.
- Samples were collected, labeled, logged, and shipped to TestAmerica, St. Louis for analysis. All soil samples were analyzed for U-234/U-235/U-238, Ra-226, Thorium-232 (Th-232), and Potassium-40 (K-40), using gamma and alpha spectroscopy. Waste characterization samples were analyzed for Resource Conservation and Recovery Act (RCRA) metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, and polychlorinated biphenyls (PCBs).
- Filtered and unfiltered groundwater samples were collected with a peristaltic pump and clean, dedicated tubing. These samples were analyzed for gross alpha, gross beta, Ra-226, Ra-228, and U isotopes using drinking water methods.
- QC blind duplicate samples were collected at one sample for every ten primary samples collected or portion thereof and MS/MSD pair samples collected at one pair for every 20 primary samples collected or portion thereof.
- Samples were packaged in laboratory supplied containers and maintained under strict chain of custody (COC) until delivery to the laboratory.

5.4.1 Subsurface Soil Sample Collection

Subsurface soil characterization borings were collected by a direct-push method using a Geoprobe® 6610DT series track-mounted drilling rig owned and operated by Enviroprobe Services, Inc, a subcontractor to GEO. Of the 45 primary subsurface soil samples collected from 26 locations, 19 were collected from ten predetermined, systematic locations (SB-001 through SB-010), as shown in Figure 5-3. Of the ten predetermined borehole locations, four of these were moved due to inaccessibility on beach areas and expected high water tables near the shoreline. Sample locations SB-006 and SB-007 shifted south from the original beach locations to the parking lot area (Figures 5-3 and 5-4). Sample location SB-008 shifted east and sample location SB-010 shifted south from the beach to areas near elevated gamma survey readings. The other 26 subsurface samples, also shown in Figure 5-3, were collected from 16 biased sample locations that were chosen based on gamma survey results, gaps in data, and discussions among the project team.

Subsurface soil samples were collected by advancing a 2 inch steel macro-sampler core barrel to a depth of 8 ft, refusal, or interface with groundwater (based on sample moisture content and stiffness). It was the responsibility of the FOM to determine when to terminate coring. The standard target depth of 8 ft was based on the collection of two cores, a 5 ft and a 3 ft interval [originally specified as two 4 ft intervals in the PWP (USACE 2011a)]. Some initial samples were drilled to a depth of 10 ft bgs prior to

the driller being reminded to only drill to 8 ft bgs. The macro-sampler was advanced in two intervals, with intermediate soil samples contained inside 5 ft clear acetate liners that had been inserted into the core barrel prior to boring.

The liners were removed from the core barrel at the sampling locations. The acetate sleeves were sliced open using a core cutter to expose the soils for classification and radiological screening. The sample cores were then described, and any significant conditions, including the presence of groundwater, were noted. Boring logs associated with each of the 26 subsurface boring locations are located in Appendix B. Once the cores were scanned and logged, samples were collected from the cores and excess soil was returned to the hole from which it was extracted. Any surface void space was filled with bentonite chips and hydrated. Excess soil was spread evenly around the borehole location. Samples were then clearly labeled in accordance with the Sample ID Numbering Scheme in Section 5.10.1 and Table A-1 of the PWP (USACE 2011a). The exterior of the liner was scanned and decontaminated (if necessary) with deionized water prior to disposal. All decontamination fluids were poured back in the holes from which the equipment was contaminated. Samples were then shipped to the off-site laboratory to be analyzed for Ra-226; Th-232; K-40, using gamma spectroscopy; and isotopic uranium, using alpha spectroscopy. Results of these analyses are discussed in Section 6 and are located in Table 5-1.

Soil samples were collected from each soil core at depth intervals based on the results of the scan of the core at elevated logged points. In the case of poor recoveries, the majority of the core was collected for sampling. Samples collected from the 0-5 ft intervals of a poorly recovered core were taken from the bottom of the core, working up, so as not to duplicate the material collected for a surface soil sample at that same location. This was also the method used for the collection of samples from cores with poor recovery in the 5-8 ft interval since slough from the upper interval was contained in the top portion of the lower interval cores. The location on each core where the sample was collected is detailed on the boring logs in Appendix B.

Although surface samples for this project were defined as being collected in the 0 to 2 ft depth range, any sample collected from a direct push boring was considered to be a subsurface sample, regardless of depth. Due to the compression of soil during drilling and subsequent poor recoveries, there was uncertainty in the actual depth below ground surface from which samples were obtained. Soil recovered from the 5 to 8 ft sample interval is likely from a shallower depth. Therefore, any radiological contamination found in the second intervals is possibly from a depth shallower than 5 ft. Operational difficulties prevented the team from identifying the exact depth of contamination, however, the investigation results show that contamination does not extend beyond 5 ft deep.

In the event that groundwater was encountered, and the borehole appeared to produce water sufficient for sample collection, the option was exercised at the team's discretion to collect a groundwater sample. A more detailed discussion of groundwater sampling is discussed in Section 5.4.4.

A strong diesel fuel odor was observed in some soil cores collected from the parking lot area and the northwestern tip of the beach. Specifically, the odors were observed in samples SB-003, SB-006, SB-007, SB-010, SB-019, and SB-021 (see Figure 5-3). Portions of these samples appeared to be saturated in free petroleum product (presumably the diesel fuel) at depths ranging from approximately 2.4 ft in SB-021, to approximately 6.4 ft in SB-003. Further detail of the encountered diesel fuel can be found in the boring logs located in Appendix B.

5.4.2 Downhole Gamma Logging

Downhole gamma logging was performed in each borehole to 8 ft bgs, point of refusal, or prior to encountering groundwater. It was specified in the PWP (USACE 2011a) that to reduce the potential for borehole collapse, a section of 2 inch diameter polyvinyl chloride (PVC) casing, capped at one end,

would be inserted into the borehole to allow for downhole scanning. However, it was observed in the field that borehole collapse occurred as the core barrel was being removed from the hole and adding PVC could not prevent this initial collapse. Additionally, the NaI detector would not fit inside the PVC unless the borehole diameter was increased and larger diameter PVC was used for hole stabilization.

Gamma ratemeter counts were collected from each borehole starting at the bottom and working upwards. A 0.5 inch by 1 inch [NaI(Tl)] scintillation detector suspended from a makeshift handle was used to obtain these measurements by advancing the detector up the hole at approximately 0.5 inches per second. In addition, static counts were collected at fixed points within the borehole. Gamma count rates were logged for each borehole and are discussed in Section 6.1.1 and shown in Table 5-2. Downhole gamma scan results were not taken into consideration when determining the location for sample collection for each core. This was due to poor recovery of the sample cores and uncertainty of the actual depths of elevated downhole gamma scan results on the cores. A discussion of the comparison between downhole gamma scans and a scan of the associated soil core is included in Section 6.1.1.

5.4.3 Surface Soil Sample Collection

A total of 45 surface soil locations were sampled for radiological analysis (U-234/U-235/U-238, Ra-226, Th-232, K-40). Surface samples were collected from the top 2 ft of soil using a 3.25 inch stainless steel hand held auger and/or stainless steel trowel. A total of 26 primary surface samples were taken from locations that were co-located with the subsurface sample locations. Another four primary grab surface samples were collected from the test pits; one sample collected from the first 2 ft excavation lift from each of the test pits. Further discussion of test pit excavation is described in Section 5.5. The remaining primary surface samples were collected from 15 biased sample locations that were chosen based on gamma survey results, gaps in data, and discussions among the project team. Surface soil sample locations are shown in Figure 5-4. Results of the laboratory analyses for the surface samples are discussed in Section 6.1.1 and are located in Table 5-3.

For sampling locations on beach areas where a dense layer of cobbles and other stony debris existed, these materials were first removed from the sample location to expose the underlying soil/sediment. For all surface soil sampling locations, visually identifiable non-soil components such as stones, twigs, and foreign objects were manually separated in the field and excluded from the laboratory samples to avoid biasing results low.

Radiological soil samples were not preserved in the field, as there are no preservation requirements for the radiological analyses. Augers and trowels used in sample collection were decontaminated between samples to avoid cross-contamination. Decontamination was performed by following the procedures outlined in Section 5.16 of the PWP (USACE 2011a). All decontamination fluids were poured back in the holes from which the equipment was contaminated.

5.4.4 Groundwater Sample Collection

Through discussions with the project team, contractual options were approved to collect groundwater samples in subsurface borehole locations that produced sufficient amounts of water. Filtered and unfiltered samples were collected from six borehole locations in accordance with GEO's groundwater sampling procedure contained in the PWP (USACE 2011a).

Once borings were advanced to their final depth (maximum 8 ft bgs), 1 inch outside diameter PVC casing coupled to a 5 ft long machined screen were temporarily installed to prevent borehole collapse and facilitate sample collection. The borehole was purged using low flow techniques via a peristaltic pump and clean, dedicated tubing. Field parameters of temperature, specific conductance, dissolved oxygen, pH, salinity, oxidation reduction potential and turbidity were collected and are provided in Table 5-4. Purging

continued until the field parameters stabilized or one full well volume had been evacuated. The samples were analyzed by the off-site laboratory for gross alpha, gross beta, Ra-226, and Ra-228 using drinking water methods. Alpha spectroscopy analysis was used to determine the isotopic concentrations of all three uranium isotopes present in natural uranium. Results of these analyses are discussed in Section 6.2.2 and are located in Table 5-5.

5.5 TEST PIT EXCAVATION

Four test pits were excavated during this SI, two of which were contractual options approved to be exercised. Test pit locations are presented on Figure 5-4 and the results of the gamma scans for each location is presented in Table 5-6. Each test pit was excavated to a maximum depth of 6 ft bgs and up to 10 ft in length, with a nominal width of one to two widths of the excavator bucket. Soils were removed from each test pit in 2 ft lifts. Each lift of excavated soil was spread uniformly on polyethylene sheeting to prevent potential contamination of underlying surface soils. The soil was then scanned and inspected for the presence of contamination (ore). Walls and floors of test pits were also scanned for contamination using the same methods as the gamma survey walkover, discussed in Section 5.3. A photograph log of subsurface conditions was maintained and is included in Appendix D. Upon completion of the test pit characterization, the excavation spoils were placed back in the test trench and compacted using the bucket of the excavator. Groundwater was never encountered in any of the four test pits. This is likely attributed to the fact that excavations were performed around tidal changes, either in receding or low tides (see Table 5-7).

5.6 QUALITY CONTROL SAMPLES

Blind field duplicate samples were collected for surface, subsurface, and groundwater matrices. The duplicates were collected simultaneously, or in immediate succession, with the primary samples collected at that location. The duplicates were recovered from the same sample and in the same manner as the original, split between the appropriate containers, and treated in the same manner during storage, transportation, and analysis. QC blind duplicate samples were collected at one sample for every ten primary samples collected or portion thereof and MS/MSD pair samples collected at one pair for every 20 primary samples collected or portion thereof. Duplicate samples were numbered, logged, and transferred, under GEO COC procedures, to the off-site laboratory for analyses. Comparability of the QC samples with the original primary samples is discussed in detail in the Quality Control Summary Reports (Appendix C).

5.7 WASTE CHARACTERIZATION

Four primary surface soil samples were collected and analyzed for waste characterization and health and safety purposes. These samples were collected at surface sample locations that had also been sampled for radiological contamination. Sample locations for waste characterization were chosen by the project team at locations to provide coverage of the SIW Site. One sample was collected in the area with elevated gamma survey readings, one was collected north of this area on the beach, and the other two were collected east and south of the elevated gamma survey area. These locations are detailed in Figure 5-6.

The waste characterization samples were submitted for RCRA metals, SVOCs, VOCs, pesticides, PCBs, and herbicides. Results of these analyses are located in Tables 5-8 through 5-13, respectively. Additional waste generated included scanned personal protective equipment, used acetate sleeves, and decontamination water. Soils and liquids removed from the ground were returned to the location where they were excavated, and thus did not generate waste. All protective clothing and acetate sleeves used during sample collection were scanned to ensure they were not contaminated, and then disposed of in trash receptacles.

Since the contamination known on the SIW Site is suspected of being uranium ore, the chemicals found in that ore may also be present on-site. The uranium ore purchased by the MED had the average non-radiological composition listed below (percentages are rounded) (MED 1942). The percentage for SiO_2 was inadvertently reported in USACE (2011b) as 20.4%.

10.4% SiO_2	6.3% PbO
0.7% FeO	0.2% CuO
2.1% Al_2O_3	0.2% P_2O_5
1.7% CaO	0.1% Co+Ni
2.9% MgO	1.1% Na_2O_3 [printed as "*No_2O_3 (?)*" in MED 1942]*

**Note: The reference is likely a typographical error, further emphasized by the "(?)" contained in the original document.*

Lead is the only potential RCRA metal found in the ore. It should be noted that although some local disassociation may occur due to environmental factors, it is expected that these chemicals would be co-located with the radioactive contamination. From the analysis discussed in Section 6.1.2, it was observed that highest concentrations of lead were found in the area of elevated radiological activity, as determined by the gamma walkover survey. While the non-radiological chemical results were not screened against remediation or disposal concentration levels, any chemical concentrations, other than lead, considered to be contamination on-site are not likely related to the uranium ore, and therefore, are not considered FUSRAP waste.

5.8 INVESTIGATION DERIVED WASTE AND EQUIPMENT SCANS

Minimal investigation derived waste (IDW) was generated during this investigation and mainly comprised of spent personal protective equipment (PPE) including tyveks and nitrile gloves. Soil or liquid IDW was not generated, since excavated test pit soil, as well as discarded soil boring cores, was placed back into their place of origin as backfill. PPE was double bagged and a release survey, allowing for the release of the PPE, was conducted on each bag. The release survey for the bagged PPE was conducted in a similar manner as the release survey for equipment used on-site by collecting readings from the sides, top and bottom of the bags. The bags were properly disposed in waste receptacles.

All personnel, PPE, and equipment were scanned following work within the designated radiation zones to ensure no contamination was carried outside of the zone. Equipment used within the radiation zones underwent release surveys with a Ludlum Model 2929 Alpha/Beta Scaler and a Ludlum Model 2360 Ratemeter. The results of the surveys, included in Appendix H, confirmed no contamination was present on the equipment.

Additionally, air monitoring was performed during field activities that had the potential to generate respirable, contaminated, airborne particulates. These activities included brush clearing, direct-push drilling, surface sample collection, and test pit excavation. Two types of air monitoring surveys were performed which measured gross alpha exposure; they were general area (non-occupational) and breathing zone (occupational) surveys. General area surveys were performed to determine exposure in specified work areas, while breathing zone surveys were performed to determine worker exposure by inhalation. The results of these surveys, included in Appendix H, confirmed no occupational or non-occupational exposure by contaminated airborne particulates.

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6. SITE CONTAMINATION, EXPOSURE PATHWAYS, AND TARGETS

The objective of this section is to assess the impact of residual radioactivity associated with the storage of high-grade uranium ore from the former Belgian Congo that was stored in steel drums at the SIW from 1939 to 1942.

6.1 SOIL EXPOSURE PATHWAY

6.1.1 Targets

As noted above, the area of the SIW Site known exhibiting elevated radiological contamination is overgrown with thick vegetation and currently is not used by the property owner. Because the SIW Site is secured by a chain link fence and access to the contaminated area is further limited by an additional fence, the most plausible exposure targets include outside SIW Site workers and SIW Site intruders. Furthermore, there is no barrier to prevent local fisherman and intruders from entering the contaminated area by water from the Kill Van Kull strait. The most likely soil exposure routes include external gamma radiation, inhalation of respirable, contaminated, airborne particulates and inadvertent ingestion of contaminated soil.

Bank erosion adjacent to the contaminated region of the SIW Site due to tidal activity, wave action associated with passing ocean-going vessels, storm surges related to meteorologic events such as Hurricane Irene (August 2011) (Figure 6-1), and periodic heavy rainfall events has the potential for transporting contaminated soil into the near-shore area of the Kill Van Kull. Potential uptake of contaminated sediment by bottom-feeding fish and/or shellfish may occur and represent another exposure target. The area of impacted sediment appears to be limited and unlikely to have a significant impact on fish and shellfish populations.

6.1.2 Radiological Contamination Results

For this SI, both surface and subsurface soil samples were collected and analyzed. Surface samples came from a depth interval of 0 to 2 ft bgs. Subsurface soil samples were selected from two depth ranges in soil cores obtained by a direct push rig: 0 to 5 ft bgs and 5 to 8 ft bgs. Some initial samples were drilled to a depth of 10 ft bgs prior to the driller being reminded to only drill to 8 ft bgs. The soil cores were scanned by a gamma detector in an effort to sub-sample the zone within each core interval to obtain soil samples from intervals with the highest levels of gamma radiation. However, due to incomplete core recovery and other difficulties that commonly were encountered with coring, reliable estimates of subsurface soil sample depths frequently were not possible.

Soil samples were analyzed for Ra-226, Th-232, U-234, U-235, and U-238 (and other associated radionuclides), all of which are isotopes that were present in the stored, unprocessed uranium ores. In addition, the activity of K-40, a long-lived, naturally occurring isotope of potassium, was detected in soil samples. Radionuclide activity data for soil samples collected at the SIW Site are presented in Tables 5-1 (subsurface) and 5-3 (surface).

In nature, all members of the same decay series are in secular equilibrium such that they decay with the same apparent activity. For example, Ra-226 is a part of the U-238 decay chain and its activity can be determined indirectly by analysis of its short-lived daughter bismuth-214 (Bi-214). Likewise, Th-232 activity is commonly determined by direct analysis of its daughter Ac-228. The analytical reports in Appendix E include the results for Bi-214 and Ac-228 and the analytical results for these radionuclides are reported as the concentrations for the parent isotopes Ra-226 and Th-232, respectively.

6.1.2.1 Gamma survey

Investigation of the radionuclide content of surface and subsurface soils for the SI began with a comprehensive review of available historical information and gamma radiation walkover surveys to obtain data regarding the relative gamma activity across the SIW Site. The gamma walkover survey specifically provided information each second regarding the gamma count rate in counts per minute and corresponding location data. The data collected was subsequently downloaded and evaluated with the evaluation including color coding to reflect specific ranges of count rates (Figure 5-2). Soil samples were subsequently collected from biased areas that were radiologically elevated, and from systematic or random locations that provided information relative to mean SIW Site conditions.

With regard to the gamma survey results illustrated in Figure 5-2, the blue data points represent background levels of gamma radiation (≤ 10,000 cpm, determined by observation). The white boundary in the figure encloses a region that captures all but a few data points where the measured gamma count rates exceed background levels at the SIW Site (green to red data points), and provides an estimate of the area in which the locations for biased soil samples were focused for the SI. Figures 5-3 and 5-4 show the location of subsurface and surface soil sampling locations, respectively, that are part of the SI investigation. The white boundary defining the zone of elevated gamma radioactivity is included on both figures.

6.1.2.2 Soil screening levels

To evaluate the presence of elevated concentration levels of specific radionuclides in soils, estimates of natural background concentrations of the radioisotopes, from which screening levels can be determined, are required. In the Quality Assurance Project Plan for the SI (USACE 2011c), Worksheet 15 presented soil background information that applies to this investigation. Table 6-1 provides the background data obtained from the ORNL (1980) and NYSDEC (1992) radiological studies at the property, screening levels for the appropriate radionuclides, and the rationale for how the screening levels were determined. The screening levels were set to the higher of either the residential Preliminary Remediation Goal [PRG (USEPA 2010)] or the site-specific background. This screening approach evaluated risks under unrestricted/residential land use, a conservative approach given that the SIW Site is zoned as commercial/industrial.

6.1.2.3 Soils in the area of elevated radioactivity

The screening levels in Table 6-1 were used as threshold values to identify those soil samples where the activity for the radionuclides at the SIW Site are elevated with respect to those values. The results are illustrated in several figures where the surface and subsurface soil samples that exceed the screening levels are arranged in a sequence of images representing sample depths of 0 to 2 ft bgs, 0 to 5 ft bgs, and 5 to 8 ft bgs. Figures 6-2 through 6-6 (a, b and c) present the results for Th-232, Ra-226, U-234, U-235, and U-238, respectively. The exceedances are color coded to distinguish samples with the greatest level of exceedance (>5 times the screening level: red) from others (>1 to <5 times the screening level; yellow). Figures 6-3a and 6-3b also contain an orange color coding which symbolizes Ra-226 exceedances of >2.5 times to <5 times the screening level. White indicates a sample that did not exceed the screening level of the radionuclide. The figures for Th-232 (Figure 6-2) and U-235 (Figure 6-5) only include results for surface soil samples (0 to 2 ft bgs) because there were no exceedances of the respective screening levels for these radionuclides for any subsurface samples. K-40 was not included in the detailed assessment of soil contamination because it is a naturally occurring radionuclide and is not expected to have any close association with the uranium ore stored at the property.

Two relevant observations are revealed in these figures. First, with rare exceptions, all areas of radionuclide activities elevated with respect to screening levels for both surface and subsurface soil

samples are within the footprint of surface soil activity illustrated on the gamma walkover survey as being radiologically elevated (Figure 5-2). Secondly, soil concentrations of radiological constituents of potential concern decrease with depth below ground surface, suggesting that significant vertical mixing of soils at the SIW Site has not taken place. These observations suggest only a limited lateral extent of apparent SIW Site contamination believed to be related to the uranium ore stored at the property in the early 1940s. Furthermore, the observations support the conclusion that most of the contamination is generally 5 ft bgs or less. However, it can be seen from the results presented in Figures 6-2 through 6-6 (a, b and c) that some correlation is present between surface and subsurface contamination. As expected, the highest correlation is between subsurface samples and first (0-5 ft) interval subsurface samples. However, four locations (008, 009, 013, and 015) indicated a link between the presence of radionuclide contaminants at the surface and at the lower interval (5-8 ft) subsurface samples.

Since recoveries were generally poor, it is difficult to assess the exact vertical location and extent of radiologically contaminated soil. The downhole gamma scan results (Table 5-2) suggest fluctuations in radiological activity with depth. However data collected from sample locations within the elevated gamma scan boundary clearly indicate the highest counts (up to 19,000 cpm) occurring within the top 1 ft bgs. Rate counts over 3300 cpm below the first 1 ft bgs were observed in only two locations, 013 and 018 and at depths of approximately 6 ft bgs.

6.1.2.4 Comparison of results from the current and previous investigations

Section 4 presented a review of the previous investigations conducted at SIW by DOE (ORNL 1980), NYSDEC (1992) and Region 2 of USEPA [in cooperation with NYSDEC and the New York City Department of Health (USEPA 2008)]. In each of these investigations, surface soil samples (ranging in depth from the surface to a maximum depth of 18 inches) were collected from the SIW Site and analyzed for a suite of radionuclides. Most of these samples were obtained from the region of the SIW Site where gamma walkover survey results indicated elevated count rates. These results can be compared to surface soil sample data obtained during the SI (0 to 2 ft bgs) from the SIW Site area with elevated radioactivity. The comparisons are made for Ra-226, Th-232, U-235, and U-238.

The relevant data from previous investigations are presented in Table 4-1. The background samples from the NYSDEC investigation have been excluded (NR-2-92-03-072201 to NR-2-03-072205, NR-9-92-003-0720101 and NR-9-92-003-0710401). Likewise, surface soil data for the SI are found in Table 5-3.

Although there is an overlap of the current SI results with those of the earlier investigations for the radionuclides, in general the SI sample activity concentration results for Ra-226, U-235, and U-238 tend to be in the lower part of data ranges. This is particularly apparent for the NYSDEC (1992) data where three samples have unusually high concentrations for the three radionuclides. As noted in Section 4.2, there was poor analysis precision for these samples due to insufficient sample quantities. Therefore, the reliability of these specific results is uncertain. Nevertheless, even excluding these three sample results, the SI results for Ra-226, U-235, and U-238 are in the lower part of the ranges for surface soil samples from the other investigations. It is apparent that the risk assessment presented in USEPA (2008) only includes the data sets from the previous investigations and is affected by the generally higher activity concentrations for these radionuclides, in comparison to what has been found in the SI.

6.1.2.5 Soil background results

Data collected during the SI was used to determine more comprehensive estimates of site-specific radiological background levels. The data used was from areas at the SIW Site where the gamma walkover survey indicated rate counts at or below 10,000 cpm. Data from surface and subsurface soil analyses obtained during the SI for K-40, Ra-226, Th-232, U-234, U-235, and U-238 from areas with background

count rates can potentially provide alternative estimates of background activity for these radionuclides. Revised, site-specific screening levels for the radionuclides based on these results may be used to support any required future SIW Site remediation activities.

Figures 5-3 and 5-4 illustrate all of the locations at the SIW Site where soil samples were collected. The boundary line enclosing the area of elevated gamma count rates from the walkover survey at the SIW Site is included. Locations lying significantly beyond this boundary were selected as lying within the gamma survey background region and are identified in Table 6-2. Data obtained from soil samples collected at these locations are summarized in Table 6-2. These samples represent an alternative set of background sampling locations for the SIW Site that can be used to derive background comparisons. The mean alternative background activities of the radionuclides for the SIW Site (and the ranges of all such values for the radionuclides) closely match the typical average values and ranges for U.S. soils that are included in Table 6-1 (MARSAME, 2009).

The more comprehensive background screening levels for K-40, Ra-226, Th-232, U-234, and U-238, appropriate to SIW Site soils, are computed from background concentrations (assuming a lognormal distribution) using the USEPA ProUCL software (www.epa.gov/esd/tsc/software.htm). This software generates an Upper Prediction Limit (95% UPL) for each radionuclide, as shown in Table 6-2. The 95% UPL can then be used as an alternative background screening level. The data distribution for U-235 includes 29 non-detects out of 30 measurements. Therefore, the alternative background screening level U-235 could not be determined. Table 6-1 also includes soil PRG values for all of the radionuclides.

Surface soil analysis results for U-238 in Figure 6-6a show that samples from two locations on the northern shore of the SIW Site (SS-025 and SS-029) exceed the screening level for the radionuclide. Although these locations lie outside of the region, and have elevated gamma survey results, the magnitude of the exceedances (2.72 pCi/g for SS-025 and 2.14pCi/g for SS-029 compared to 1.96 pCi/g) are not large. However, a reasonable explanation for such exceedances of U-238 at these locations may be associated with the physical transport of contaminated soil from the SIW Site to the beach as a result of erosional processes that could involve tidal wave action, storm surges, or runoff from heavy precipitation events. Erosion along the northwestern boundary of the SIW Site has been documented in USACE (2011b) and is briefly described in Section 6.1.3 of this SI.

Sample SB-007 lies significantly to the east of the region, where most of the soils contaminated with radionuclides are found (Figures 6-3c and 6-6c). However, the deep subsurface sample at this location (5 to 8 ft bgs) contains activity for Ra-226 and U-238, which exceed screening levels.

In summary, the white boundary line shown in Figure 5-2 defines the region of the SIW Site where surface gamma count rates exceed background levels in other parts of the SIW Site. The white line also defines the lateral extent of the area where specific radionuclides commonly associated with uranium ores exceed isotope-specific screening levels. Furthermore, the distribution of elevated activity of radioactivity in subsurface soils also lies within the boundary. Existing contaminant information can be used to assist in the planning of a more detailed analysis such as a CERCLA Remedial Investigation. It is recommended to determine from a technical perspective whether residual contamination at the Site is attributable to the Nation's early atomic energy program.

6.1.3 Non-Radiological Contamination Results

In addition to the sampling program that focuses on defining the distribution of radiological contamination at the SIW Site, surface soil samples from four locations (Figure 5-6) were subjected to chemical characterization for RCRA metals, SVOCs, VOCs, pesticides, PCBs, and herbicides. Three of the samples (SS-041, SS-042, and SS-044) are located along the northern part of the SIW Site, generally in the region adjacent to where ships have docked in the past. It is unknown if any non-radiological

contamination in this region might be associated with shipping activities. In addition, soil samples collected at locations SS-043 and SS-044 come from the area where elevated radiological contamination identified by the gamma survey was found. In general, other than lead, there is no reason to expect any association between non-radiological contamination at the SIW Site and the uranium ore that was stored there during the early 1940s.

The purpose of the non-radiological analyses is to provide preliminary information that might be needed to determine the final disposition of soil if remedial actions will be performed in the future. Most of these chemicals (e.g. organic constituents), if detected, could not have been from use of the SIW Site for uranium ore storage but may be present due to decades of industrial use of the area.

Although the quantity and quality of the chemical characterization data obtained should allow surface soil from the SIW Site to be evaluated against USEPA PRGs for exposure of an outdoor worker or SIW Site intruder, that was not the primary objective of the data. Rather, these chemical data can be compared against Occupational Safety and Health Administration (OSHA) action levels and landfill acceptance criteria for use in planning future remedial action, if required.

The chemical data obtained from surface soils at the four locations are presented in Tables 5-7 through 5-12. The great majority of results for organic constituents (VOCs, SVOCs, PCBs, pesticides, and herbicides) were non-detects and either U or UJ qualified. For example, all herbicides were either U or UJ qualified for all samples; of the pesticides, J qualified results were obtained from soil samples at locations SS-043 and SS-044 for 8 of the 22 analytes. For the PCBs, only Aroclor 1260 was detected in surface soil samples from locations SS-043 and SS-044, whereas all other PCBs for the four locations were either U or UJ qualified. Only detected constituents are shown in Table 5-7 (Refer to Appendix F for complete lab data sets).

Among the VOCs, the benzene, toluene, ethyl benzene, and total xylenes compounds were commonly detected at one or more of the four sampling locations, but only at low concentrations as J qualified analytes. The presence of these constituents is consistent with fuel spills that may have occurred at the industrial site, although a definitive explanation for the presence of such contamination at the SIW Site is unknown. Some other VOC analytes that were detected in some soil samples (e.g. acetone, methylene chloride, and 2-butanone) commonly are found as laboratory contaminants and are not indicative of SIW Site contamination. Most of the remaining VOC analytes were not detected in any sample (UJ qualified).

For the SVOCs, most analytes were not detected in samples from the four locations. However, the 16 polycyclic aromatic hydrocarbons (PAHs) that were included in the soil sample analyses are the most common contaminants that were detected. Every PAH was detected in at least one of the samples and most were found in the entire suite of samples. Detections were a mix of J qualified and valid detections. The PAHs are common compounds found in coal and petroleum-based fuels and are frequently deposited from asphalt pavement and from the atmosphere as products of combustion. Their presence in soils in a heavily industrialized area, and in a highly populated region where diesel and gasoline fuels are burned by vehicles and coal-fired electrical power plants surrounding the New York City region, is understandable. The presence of the asphalt parking lot on the SIW Site, which is approximately 6" thick, may have contributed to their presence. Also, asphalt debris could be a component of the fill material; several subsurface soil cores outside of the parking lot area (009, 022, 023, and 024 – see Appendix B) contained what appeared to be asphalt material. As discussed in Section 5.4.1, the presence of diesel fuel was detected in several subsurface borings. Several SVOC analytes (phthalates) were detected in several soil samples and are considered to be common laboratory contaminants rather than characteristic of SIW Site contamination.

Although there may be many potential sources of metal contamination at the SIW Site, including industrial and other regional activities, the possibility that the uranium ore may have associated non-radiogenic metal constituents cannot be ignored. The uranium ore body in the Belgian Congo was hydrothermal in origin and is known to have a variety of associated metals that were deposited along with the uranium-bearing minerals. For example, an assay of the non-radiogenic constituents in the original ore stored at the property in the early 1940s is provided in Section 5.7. It shows that a significant concentration of lead (6.27% PbO – approximately 58,200 mg/kg of Pb) and lesser amounts of a variety of other metals (e.g. copper, cobalt, and nickel) were present.

All of the metal analytes included in the SI, Arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver were detected in soil samples from at least two of the four locations. Concentration results for barium, cadmium, chromium, and selenium were all valid detections at all locations. Samples from all locations yielded J qualified concentrations for the analytes, silver, lead, and mercury. Silver was not detected in samples from locations SS-041 and SS-042, but had valid detections in the remaining samples. Most of the observed metal concentrations were low, but lead and arsenic were detected at elevated levels. The high estimated concentrations of lead (as high as nearly 3000 milligrams per kilogram) may possibly be related to the ore stored at the property, but also may be attributed to the extensive former use of leaded gasoline in the region and deposition at the SIW Site from the atmosphere.

Furthermore, the Jewett White Lead Company site, located in Port Richmond, is being addressed by the USEPA. While not adjacent to the SIW Site, investigations of properties around the Jewett White site demonstrated that lead contamination was present but from sources other than the Jewett White site (e.g. leaded gasoline, leaded paint, etc.). Chemical contamination not present in the uranium ore or comingled with the ore is not within the scope of FUSRAP (USACE 2011b).

6.2 GROUNDWATER EXPOSURE PATHWAY

The composition of groundwater underlying the SIW Site has not been considered in any of the previous radiological investigations. During the SI, groundwater samples were collected from six locations (Figure 5-5). The boundary line that encloses the region where gamma survey results exceed background levels also includes most of the groundwater sampling locations. A scenario that is considered in this SI is the possibility that infiltration of precipitation at the SIW Site may result in leaching of radionuclides from contaminated soils and transport to shallow groundwater where mixing occurs.

6.2.1 Targets

As a manmade structure, materials at the SIW Site consist of a combination of native glacial till and artificial fill. This artificial fill was encountered to a depth of at least 5 ft in most boreholes (Appendix B). Although either type of material could be coarse enough to make an aquifer, the total thickness is expected to be on the order of only 10 to 20 ft, and the SIW Site extends into the Kill Van Kull which indicates that groundwater extracted from the construction materials would likely be highly influenced if not representative of adjacent surface water. Groundwater flow is expected to be to the north and influenced by the tides (approximately 4 ft to 5.5 ft daily fluctuation).

Groundwater underlying Staten Island is recharged primarily by precipitation with an annual average total of 46.3 inches. The groundwater originates in the central portions of the island and radiates outward. This groundwater flow in the vicinity of the SIW Site is expected to be to the north. Island fresh water is surrounded on all sides by salt water interfaces (Soren 1988). As mentioned in Section 3.2, the SIW Site is underlain by diabase, which has low permeability and is not considered a viable source of groundwater. Staten Island groundwater has not been used for drinking water since 1970 (Soren 1988). Instead, New York City receives its drinking water from upstate resources via aqueducts and piping.

There is no expectation that shallow groundwater at the SIW Site will result in exposure to outside workers or intruders. Furthermore, groundwater flow discharge to the near-shore environment of the Kill Van Kull on the north and west sides of the SIW Site will undergo rapid dilution by mixing with the surface water. Once groundwater underlying the SIW Site discharges into the Kill Van Kull, it transitions from a groundwater to a surface water exposure pathway with associated targets. Discussion of the surface water component of potential exposure is discussed in Section 6.3

6.2.2 Results

The analytical results for the six groundwater sample locations are presented in Table 5-5. The screening levels for the radionuclides are found in Table 6-3. These screening levels are appropriate for drinking water rather than for shallow groundwater at the SIW. Although there is no intention of, or likelihood for, human consumption or exposure in the future, drinking water screening levels were selected for their more conservative values. This groundwater eventually will be discharged into the Kill Van Kull. All of the isotope-specific activity data (unfiltered and filtered samples) in Table 5-5 are below the appropriate screening levels. Furthermore, besides results of gross beta in samples GW-010 and GW-026, there are no significant differences between the unfiltered and filtered results for the isotopes in the samples. This indicates that transport of contaminants adsorbed to particulates is insignificant.

The analytical laboratory reported that the concentration levels of total dissolved solids in the groundwater samples were very high. This is almost certainly caused by the salinity of the adjacent Kill Van Kull and its influence on the near-shore groundwater at the SIW Site. In order to perform analyses for gross alpha and gross beta on the SIW Site groundwater samples, only a very small volume of water could be used for evaporation in preparation for alpha and beta counting. The effect of this factor results in very high values of sample specific detection limits [reported as Minimal Detectable Concentrations (MDCs) in Table 5-5], approximately 50 times higher than what might be normally anticipated. The gross alpha results for both filtered and unfiltered samples are U qualified which means that they were not detected in the sample during analysis. Although some sample detection limits are greater than screening levels, it is expected that gross alpha concentrations are below screening levels. This conclusion is also consistent with the very low concentration levels of specific alpha-emitting radionuclides measured in these samples.

In contrast, the gross beta results for most samples exceed the respective uncertainties and MDCs with magnitudes between approximately 100 and 200 picocuries per liter (pCi/L). This range of concentrations is greater than the 50 pCi/L threshold level for gross beta results that USEPA uses as a trigger for analyzing samples for specific beta emitters. However, this threshold applies to drinking water which has no foreseeable use and is likely significantly mixed with saline water from the Kill Van Kull. Also, due to the amount of solids present in the dried samples, it is reasonable to conclude that a significant portion of gross beta activity is the result of K-40. While the specific activity affected by K-40 cannot be quantified, it is potentially significant in regards to beta counts. In summary, it is reasonable to assume that both the gross alpha and beta results presented in Table 5-5 do not warrant any concern for potential risk to human health and the environment.

6.3 SURFACE WATER EXPOSURE PATHWAY

Surface water does not exist on the SIW Site; however it is bordered along its northern boundary by the Kill Van Kull strait. It is noted in USACE (2011b) that significant erosion occurs along the northwest portion of the SIW Site. This is evident in aerial photographs and was confirmed during USACE site visits. Photos from previous investigations show the known area of contamination to extend to the areas impacted by erosion and/or tidal influences. Wind, river inflow, and tidal influences commonly cause the water current and sediment flows in the Kill Van Kull to switch directions (Chant 2001).

6.3.1 Targets

The Kill Van Kull is an interstate water body and is classified by the NYSDEC as Class SD (NYCDEP 2011). The usage of Class SD saline surface waters is fishing so SD waters should be suitable for fish survival. It is also classified by the state of New Jersey as impaired (contamination exceeds New Jersey water quality standards for dioxin, pesticides, PAH, and PCBs) and SE3 [Surface Water Quality Standards N.J.A.C. 7:9B (New Jersey 2011)]. The designated uses of SE3 saline waters of estuaries are: secondary contact recreation; maintenance and migration of fish populations; migration of diadromous fish; maintenance of wildlife; and any other reasonable uses. Many studies of the Kill Van Kull report chemical contamination and a long history of petroleum spills and contamination. The Kill Van Kull is not a source of public drinking water.

6.3.2 Results

In Section 6.2.2, the results of analyses of six groundwater samples obtained during the SI are described. Available compositional evidence indicates that groundwater at these locations has not been impacted by leaching of radionuclides associated with soil contamination at the SIW Site, followed by transport to the water table. This observation also supports the conclusion that there is no evidence that discharge of potentially radionuclide contaminated groundwater to the Kill Van Kull strait occurs.

Based on the data presented in Section 6.1.2, there is evidence of a potential release or threat of release (erosion) into the surface water of radioactive materials. However, it cannot be determined at this time, based on available evidence, if the slightly elevated concentrations of several radionuclides in surface soils on the beach exposed at low tide are indicative of a broader release issue.

6.4 DATA ASSESSMENT

The analytical data collected during the SI (located in Appendix F) were evaluated for quality, accuracy, precision, comparability, sensitivity, representativeness, and completeness. Field QC samples analyzed include field duplicates (FDs) and MS/MSD sample pairs. Laboratory QC samples include laboratory control samples (LCSs), laboratory control sample duplicates (LCSDs), and method blanks (MB). Results of the field and laboratory QC sample analysis are provided in the project Quality Control Summary Reports (QCSRs) (Appendix C).

A summary of the QC results for the soil and groundwater samples that were collected as part of the SI field activities can be found in the project QCSRs (Appendix C). The results of the laboratory and field QC sample analyses presented in the QCSRs indicate that, overall, the laboratory conducted the field analyses with acceptable accuracy, precision, comparability, sensitivity, representativeness, and completeness for the radionuclides and chemicals of concern.

Validation of all of the analytical data was self-performed; the data validation report can be found in Appendix C. There were no major issues identified by the validation.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

The results of the July 2011 SI investigation that are discussed in Section 6 provide information about radioactive and non-radioactive constituents in surface and subsurface soils at the SIW Site. In addition, groundwater samples from the SIW Site were analyzed for a range of radioactive species. In general, the results of the investigation yielded the following observations:

- Gamma walkover survey: This survey identified a region within the northwestern quadrant of the SIW Site where surface gamma count rates exceeded background levels. This was identified as a region where biased sampling of soil took place in the SI. Additional, non-biased soil sampling also took place in areas where background levels of gamma count rates were observed.
- Soils: Surface and subsurface soil samples were collected at the SIW Site and subjected to analyses of a suite of radionuclides. Comparison of the analytical results to site-specific screening levels identified samples exceeding these levels. They were located almost exclusively in the region where gamma survey results also exceeded background levels. Furthermore, the frequency of soil sample exceedances decreased with increasing depth within this region of the SIW Site.
- Groundwater: Shallow groundwater samples obtained from six locations at the SIW Site were subjected to analysis for a suite of radioactive species. None of these samples exceeded any of the screening levels applicable for the species. Therefore, shallow groundwater underlying the SIW Site is not a concern to human health and the environment.

7.1.1 Evaluation of Uranium Present within the Staten Island Warehouse Site.

It is apparent that no MED related materials other than uranium ore (i.e. natural uranium) were stored at the property. In terms of radioactivity contribution, natural uranium is composed of 48.6, 2.2 and 49.2 percent U-238, U-235 and U-234, respectively. (Minteer et al 2007) As such, the U-238 to U-234 radioactivity ratio for natural uranium of 0.98 (i.e., 48.6 divided by 49.6) is expected. Given that both U-235 and U-234 are extracted from natural uranium during the enrichment process, the residual concentrations of these isotopes present in depleted uranium result in activity ratios of U-238 to U-234 and U-238 to U-235 of 10.7 and 62.2, respectively. Comparing these activity ratios from natural uranium and depleted uranium, the ratio of U-238 to U-234 would change by a factor of about 10.9 (from 0.98 to 10.7) while the ratio of U-238 to U-235 would change by a factor of about 2.9 (from 21.7 for natural uranium to about 62.2 for depleted uranium). Although depleted uranium concentrations are subject to some variability, activity concentrations of U-234, U-235, and U-238 are typically on the order of 8.4, 1.45, and 90.14 percent, respectively.

As noted above, concentrations of U-234 and U-238 in natural uranium are similar and are present at over 20 times the U-235 concentration. As such, U-234 and U-238 concentrations are commonly used when evaluating isotopic ratios based on activity concentrations from radiological analysis (e.g., alpha spectrometry) to determine whether individual samples contain natural, depleted or enriched uranium. Additionally, it is notable that, as with SIW soil data, activity concentrations of U-235 are commonly present at levels below applicable lower limits of detection such that the data does not lend itself to detailed statistical analysis.

Calculation of U-238 to U-234 ratios for Staten Island Warehouse surface soil samples collected during July 2011, reflect ratios ranging from 0.73 ± 0.19 to 1.17 ± 0.36 with a mean of 0.99 and a mean value for total propagated uncertainty of 0.20. (See Table 7-1, *Evaluation of Surface Soil Samples from the Staten Island Site*.) Similarly, for subsurface soils U-238 to U-234 ratios ranged from 0.71 ± 0.20 to 1.18 ± 0.33 with a mean of 0.98 and a mean value of the uncertainty of 0.21. (See Table 7-2, *Evaluation of Subsurface Soil Samples from the Staten Island Site*.) Based on this data, it is reasonable to conclude that uranium present at the SIW Site is within the range expected for natural uranium.

7.1.2 Evaluation of Radium Present within the Staten Island Warehouse Site.

Given the absence of significant contaminant migration as a result of differences in solubility, Ra-226, being a member of the naturally occurring U-238 decay series, decays with the same apparent activity concentration as the uranium parent. Comparison of U-238 and Ra-226 activity concentrations in surface soils reflects U-238 to Ra-226 ratios ranging from 0.26 ± 0.04 to 2.99 ± 0.72 with a mean value of 0.85 and a mean value of uncertainty of 0.19. Similarly, the U-238 to Ra-226 activity concentrations in subsurface soils ranged from 0.47 ± 0.14 to 7.2 ± 2.11 with a mean value of 1.13 and a mean value of uncertainty of 0.28. (Given that the upper bound ratio of 7.2 may be representative of an outlier, it is notable that the next higher ratio for subsurface soils is 2.55 ± 0.75.) Ra-226 activity concentrations commonly are more variable than those of U-238 based on lack of homogeneity resulting from specific activity differences and from significant differences in solubility. The mean ratios of U-238 to Ra-226 are 0.85 and 1.13 in surface and subsurface soils, respectively, thus the overall ratio is within the range that would be expected for uranium ore. Nonetheless, given the range of ratios encountered, one cannot conclude with certainty that the activity present on the SIW Site is solely the result of MED ore materials stored on the property.

7.2 RECOMMENDATIONS

It cannot be determined from a technical perspective, whether residual contamination at the Site is attributable to the Nation's early atomic energy program. No evidence could be found indicating federal responsibility for the contamination; therefore it is recommended that no further action be taken at the Site under the FUSRAP program. However, if an appropriate responsible party or cleanup program is identified in the future, a more detailed analysis such as a Remedial Investigation is recommended to determine the bounds of contamination by further investigating the following.

First, although the lateral extent of soils that exceed screening levels for radionuclides has been adequately defined, there remains some uncertainty regarding the vertical extent of radionuclide contamination. Due to recovery problems experienced during direct push soil borings, further vertical investigation may be required as the SIW Site moves through the CERCLA process. There were some operational difficulties associated with coring, so that the depth of contamination was not clearly resolved. Although these operational difficulties prevented the team from identifying the exact depth of contamination, the investigation results show that contamination does not extend beyond 5 ft deep.

Secondly, beach erosion has occurred along the northern edge of the SIW Site, suggesting that some radionuclide-contaminated soil may be gradually transported from the SIW Site into the near-shore environment of the Kill Van Kull. It is recommended that sediment samples off-shore of the most contaminated part of the SIW Site be collected and analyzed for the same radionuclides addressed in this investigation to determine if any significant risk exists.

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USACE (U.S. Army Corps of Engineers) 2011a. *Project Work Plan, Site Inspection Staten Island Warehouse FUSRAP Site, Staten, Island, Port Richmond, New York.* March 2011.

USACE (U.S. Army Corps of Engineers) 2011b. *Preliminary Assessment Staten Island Warehouse Formerly Utilized Sites Remedial Action Program (FUSRAP) Site*. Richmond Terrace, New York. Sept. 2011. Prepared by US Army Engineer District, NY and US Army Engineer District, KC.

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http://www.weatherbase.com/weather/weather.php3?s=128503&refer=&cityname=Staten-Island-New-York-United-States-of-America

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FIGURES

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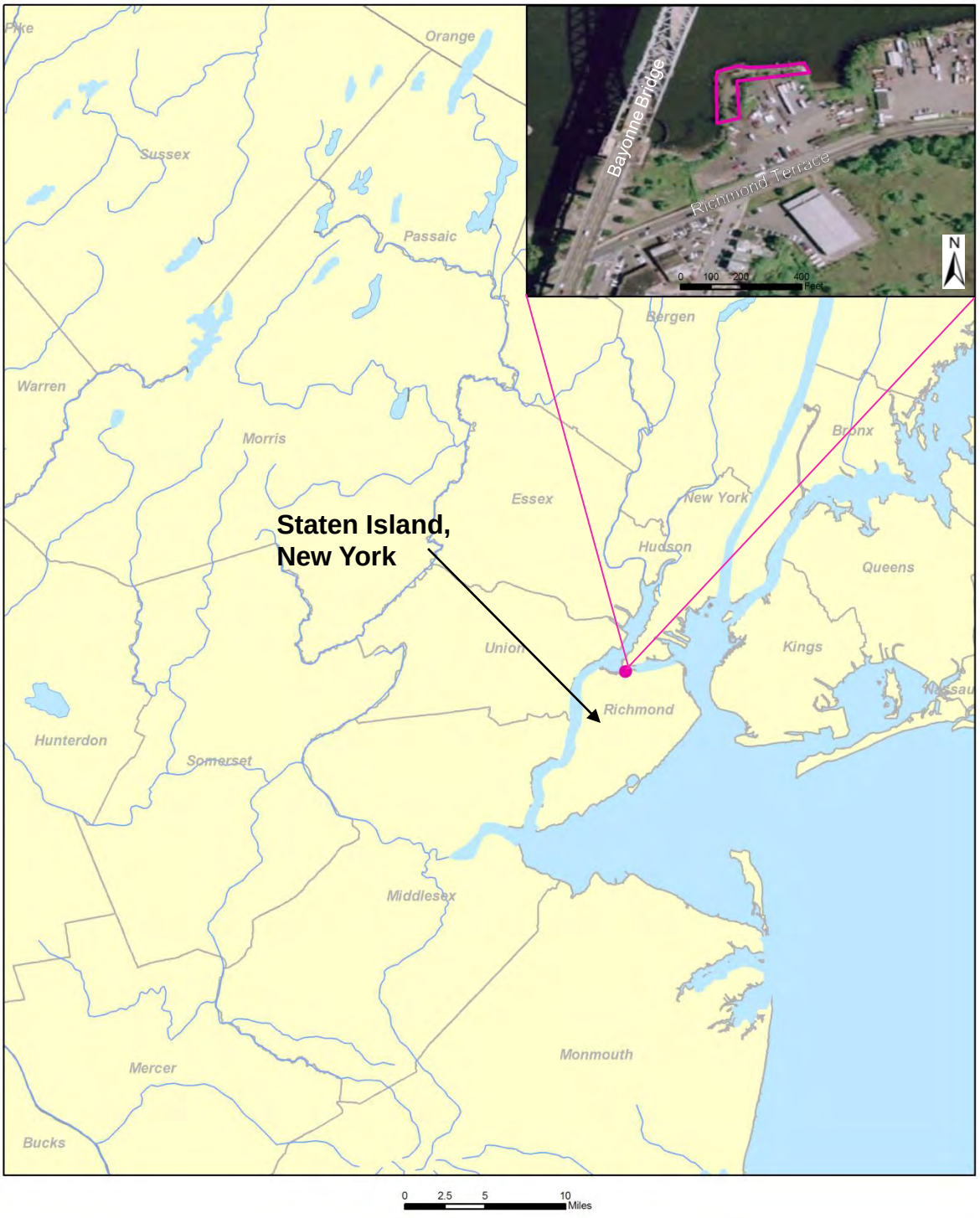


Image Source: ESRI World Imagery

Figure 1-1. Staten Island Warehouse FUSRAP Site Location Map

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse FUSRAP Site Staten Island, NY

Image Source: USEPA 2009a

Figure 2-1a. Staten Island Warehouse FUSRAP Site Aerial April 28, 1940	**U.S. Army Corps of Engineers** **GEO Consultants, LLC** *A Geological Engineering and Environmental Services Company* Kevil, Kentucky	**Staten Island Warehouse FUSRAP Site Staten Island, NY**

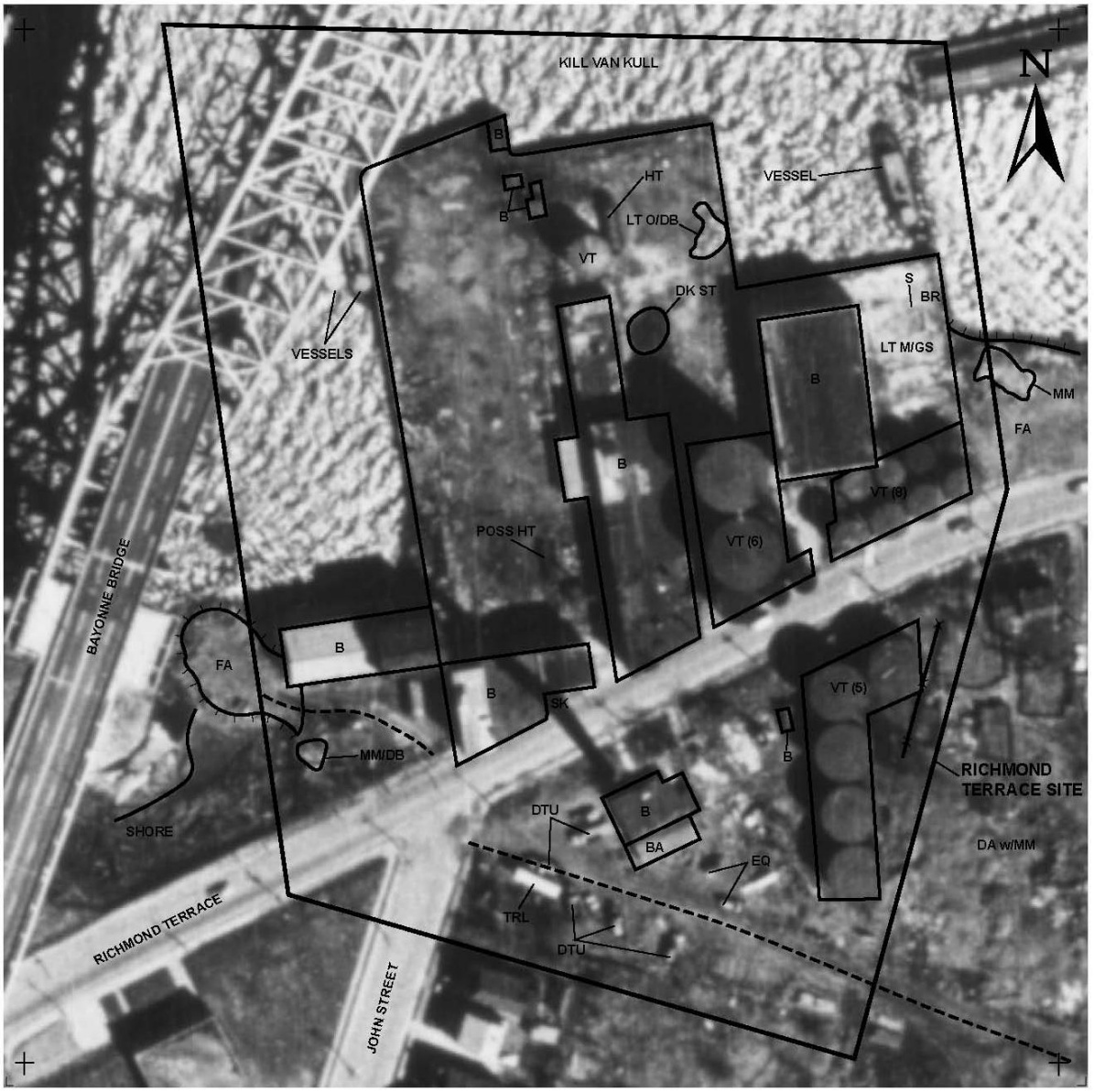


Image Source: USEPA 2009a

Figure 2-1b. Staten Island Warehouse FUSRAP Site Aerial April 23, 1961

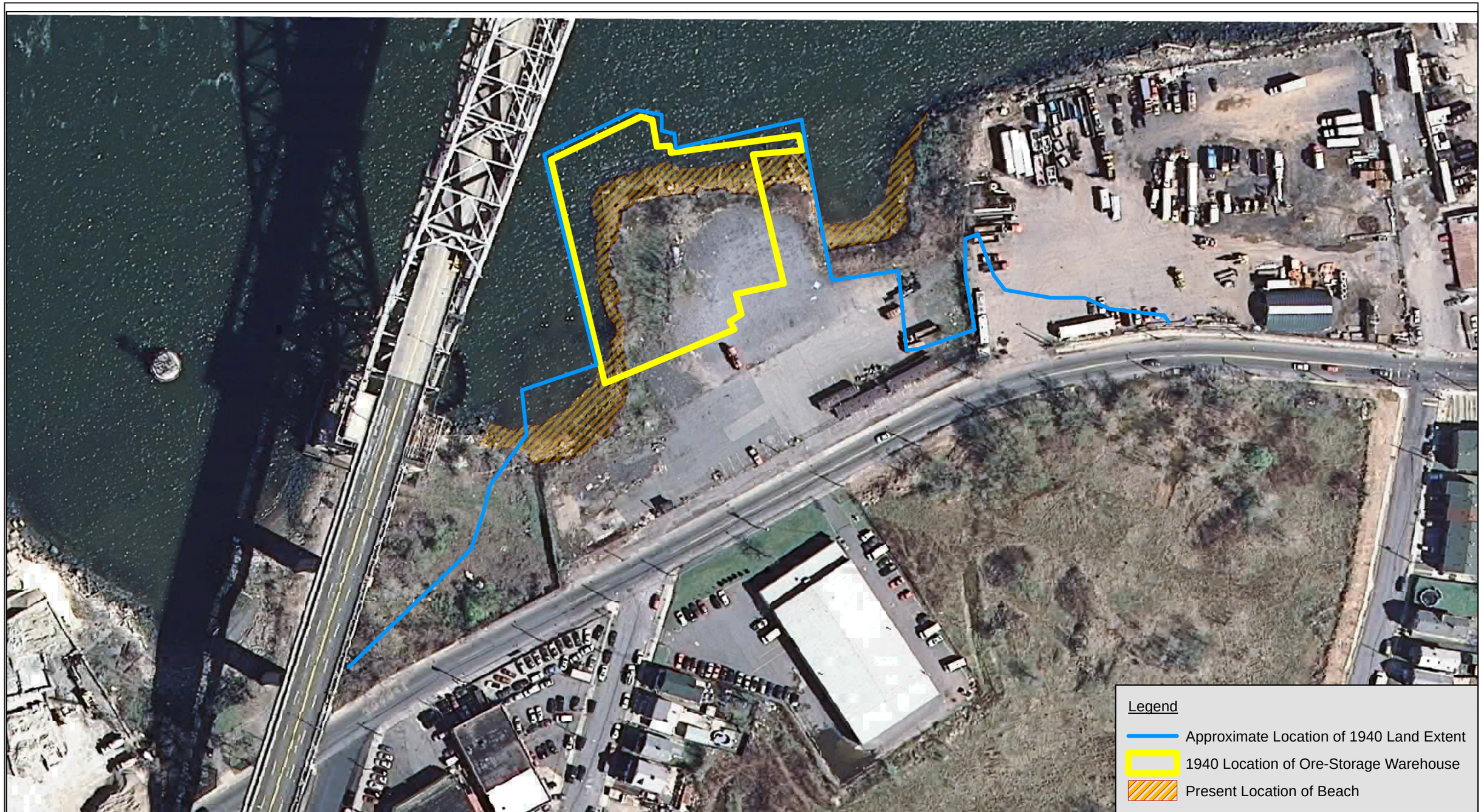
U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse FUSRAP Site
Staten Island, NY

Image Source: USEPA 2009a

Figure 2-1c. Staten Island Warehouse FUSRAP Site Aerial March, 1988	**U.S. Army Corps of Engineers** **GEO Consultants, LLC** *A Geological Engineering and Environmental Services Company* Kevil, Kentucky	**Staten Island Warehouse FUSRAP Site Staten Island, NY**



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 70 140 280 Feet

N

Figure 2-1d. Site Boundary Changes Over Time Due to Wave Erosion

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 75 150 300 Feet

N

Figure 2-2. Beach Location

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

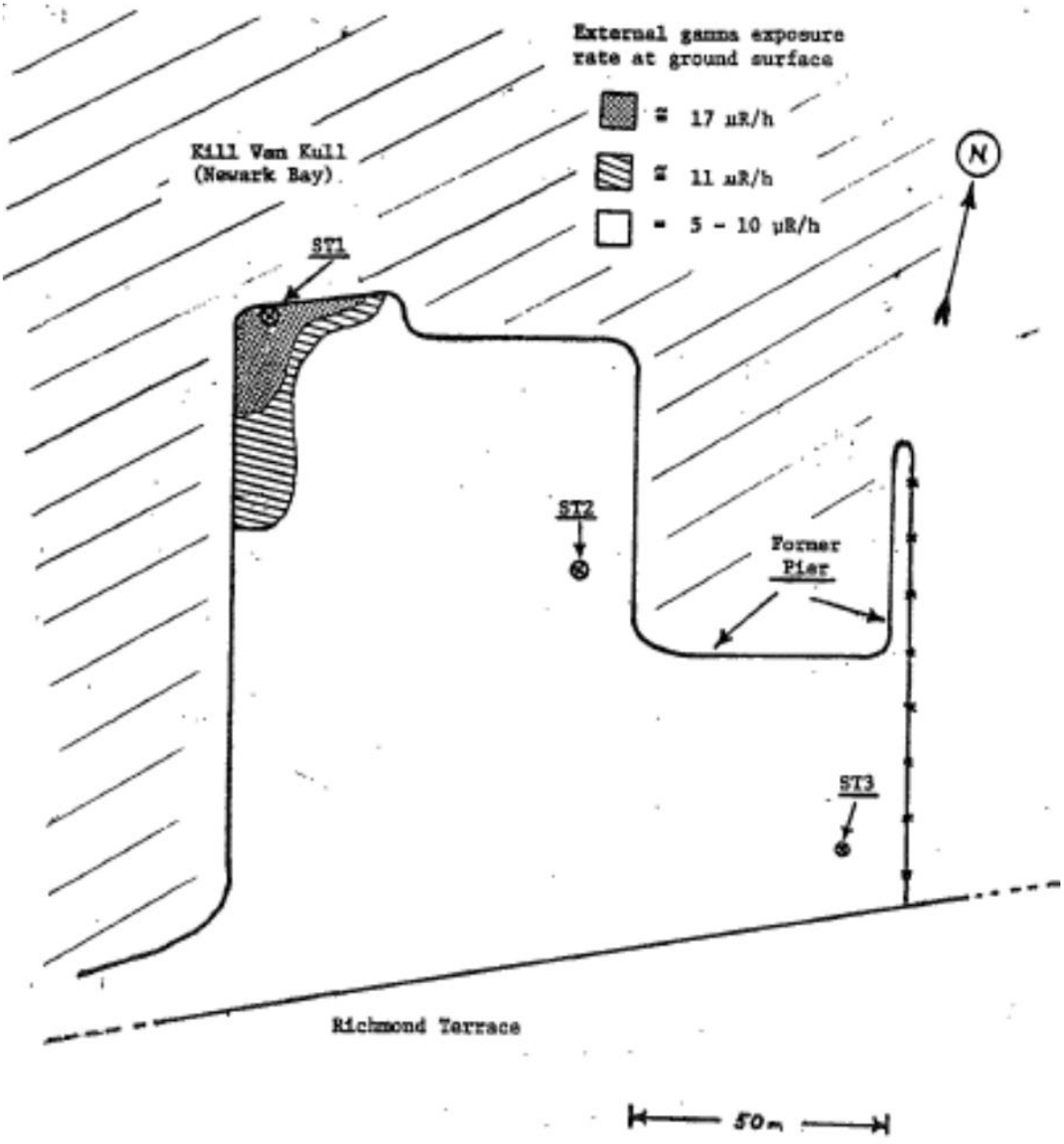


Image Source: ORNL 1980

Figure 4-1. 1980 ORNL Gamma Survey Results and Soil Sample Locations	**U.S. Army Corps of Engineers** **GEO Consultants, LLC** *A Geological Engineering and Environmental Services Company* Kevil, Kentucky	**Staten Island Warehouse FUSRAP Site Staten Island, NY**

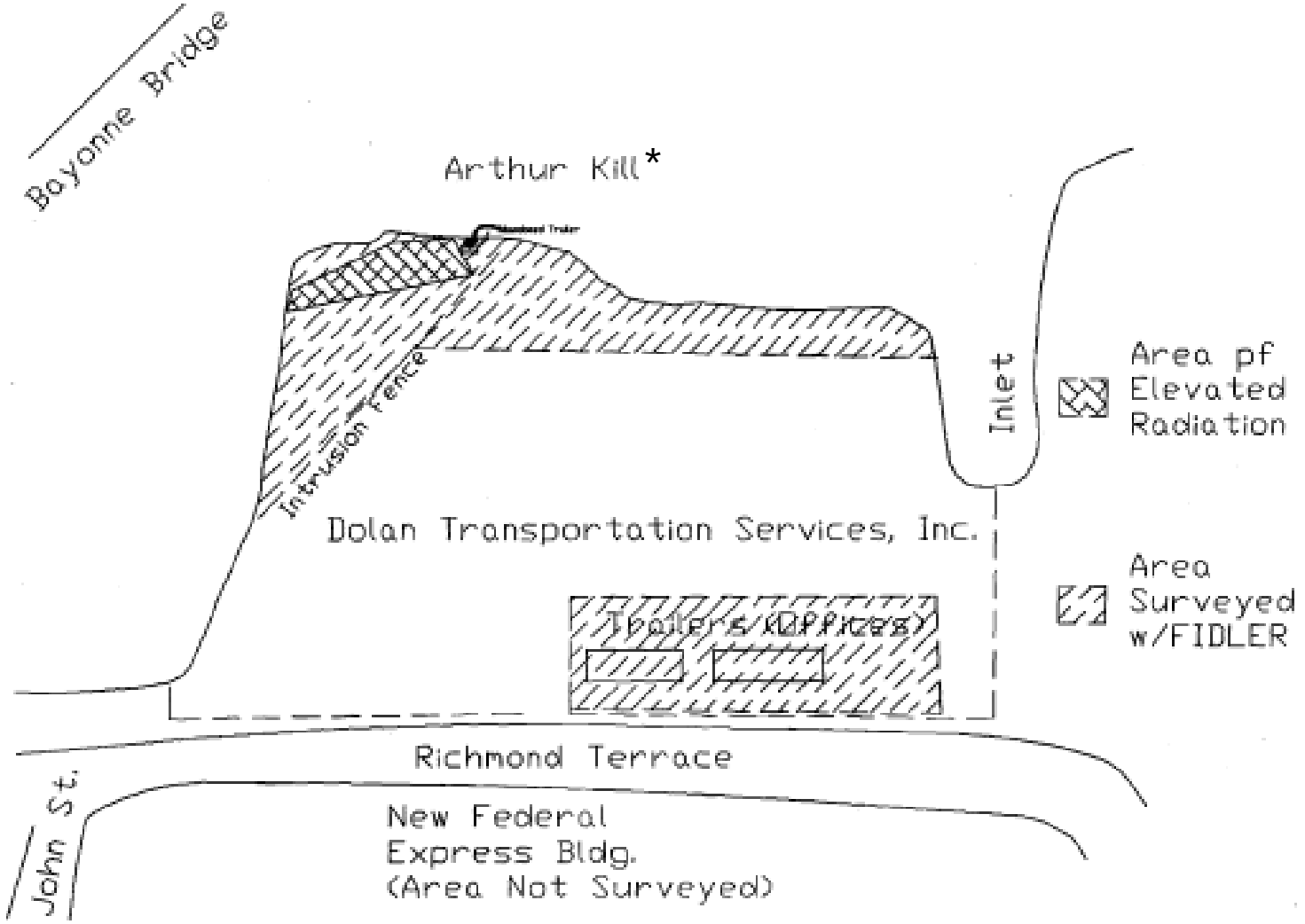


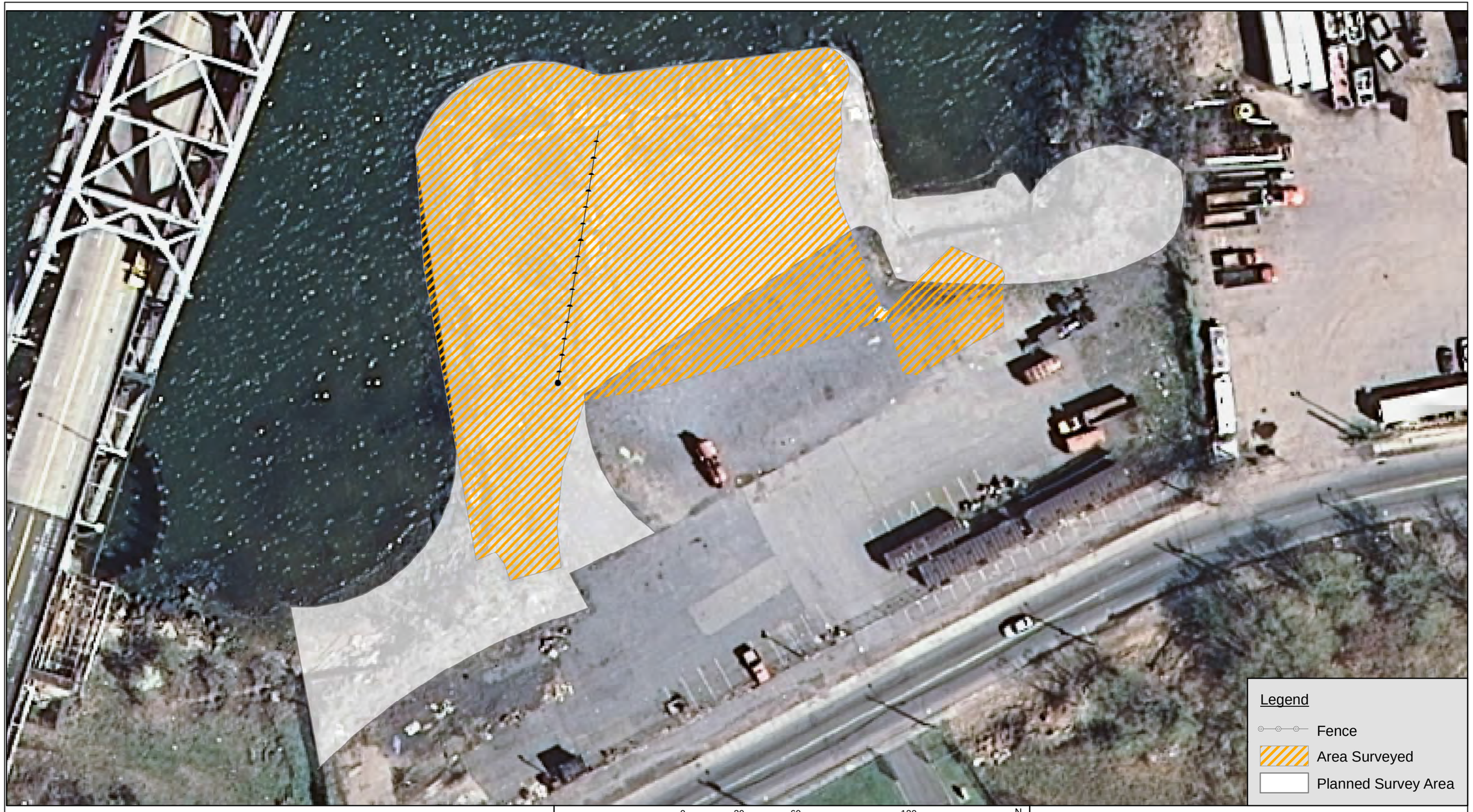
Image Source: NYSDEC 1992
*Note: The Kill Van Kull has been mislabeled as the Arthur Kill

Figure 4-2. 1992 NYSDEC Staten Island Warehouse Gamma Survey Results

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse FUSRAP Site
Staten Island, NY



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 30 60 120 Feet

N

Figure 5-1. Proposed and Executed Gamma Survey Boudaries

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Legend

Gamma Walkover

CPM

- 0 - 10000
- 10001 - 12000
- 12001 - 14000
- 14001 - 16000
- 16000 - 600000
- Elevated Rad Boundary

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 5-2. Gamma Walkover Survey Results

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, Port Richmond, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 5.3. Subsurface Soil Sample Locations

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 5-4. Surface Soil Sample and Test Pit Locations

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 5-5. Groundwater Sample Locations

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 5-6. Non-Radiological Waste Characterization Sample Locations

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

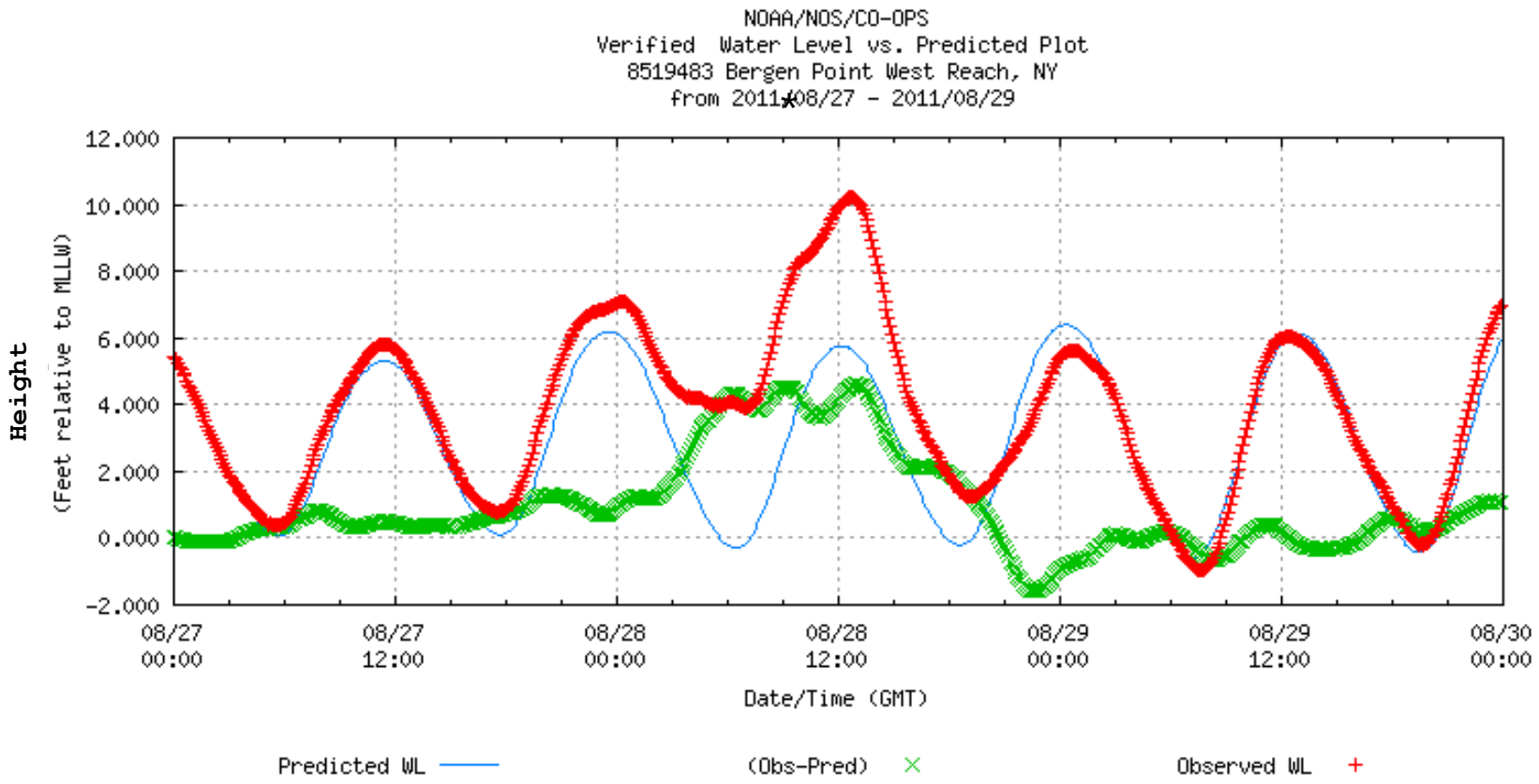


Image Source: http://tidesandcurrents.noaa.gov

Figure 6-1. Hurricane Irene Storm Surge	**U.S. Army Corps of Engineers** **GEO Consultants, LLC** *A Geological Engineering and Environmental Services Company* Kevil, Kentucky	**Staten Island Warehouse FUSRAP Site** **Staten Island, NY**

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

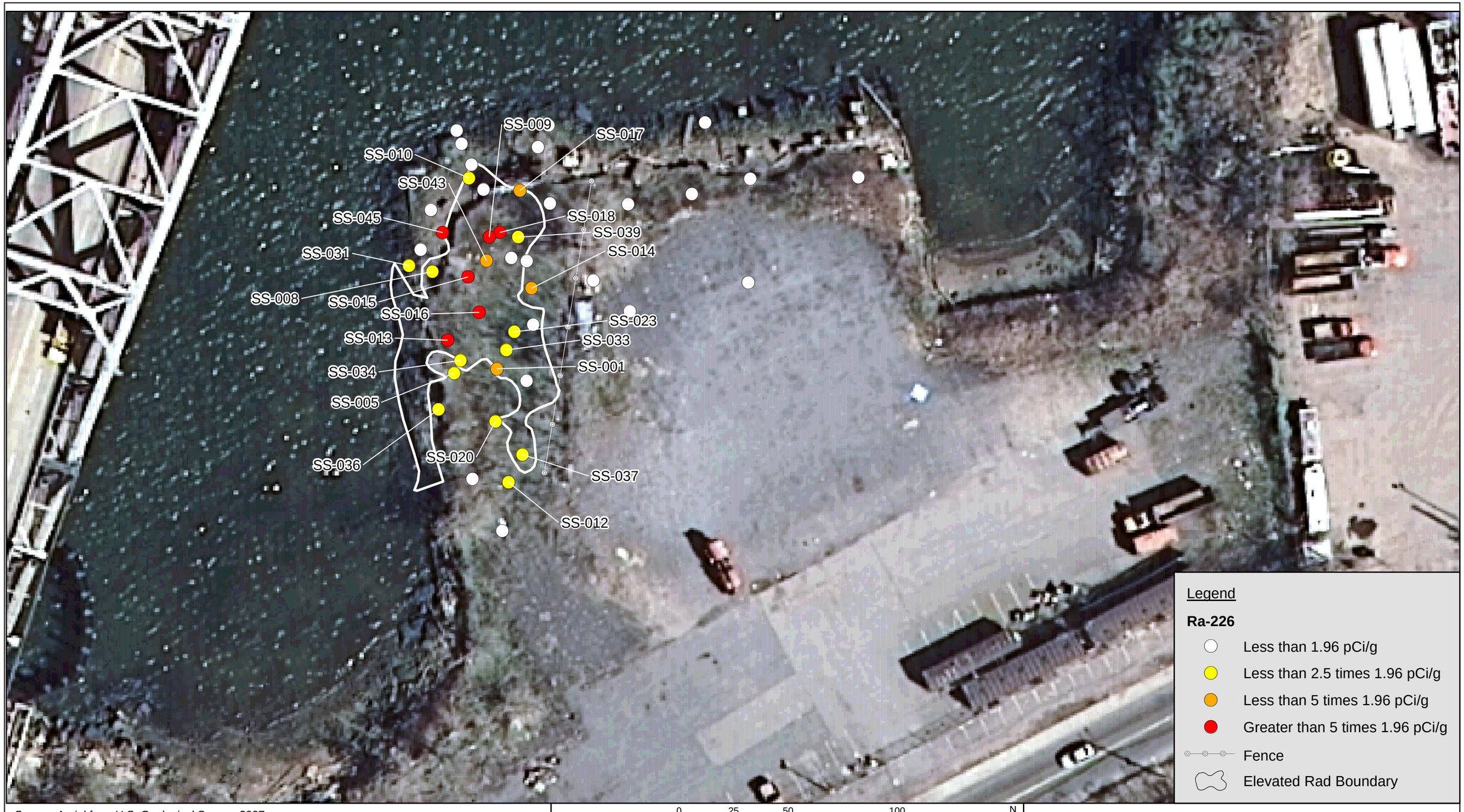
N

Figure 6-2. Surface Soil Exceedances (Th-232)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

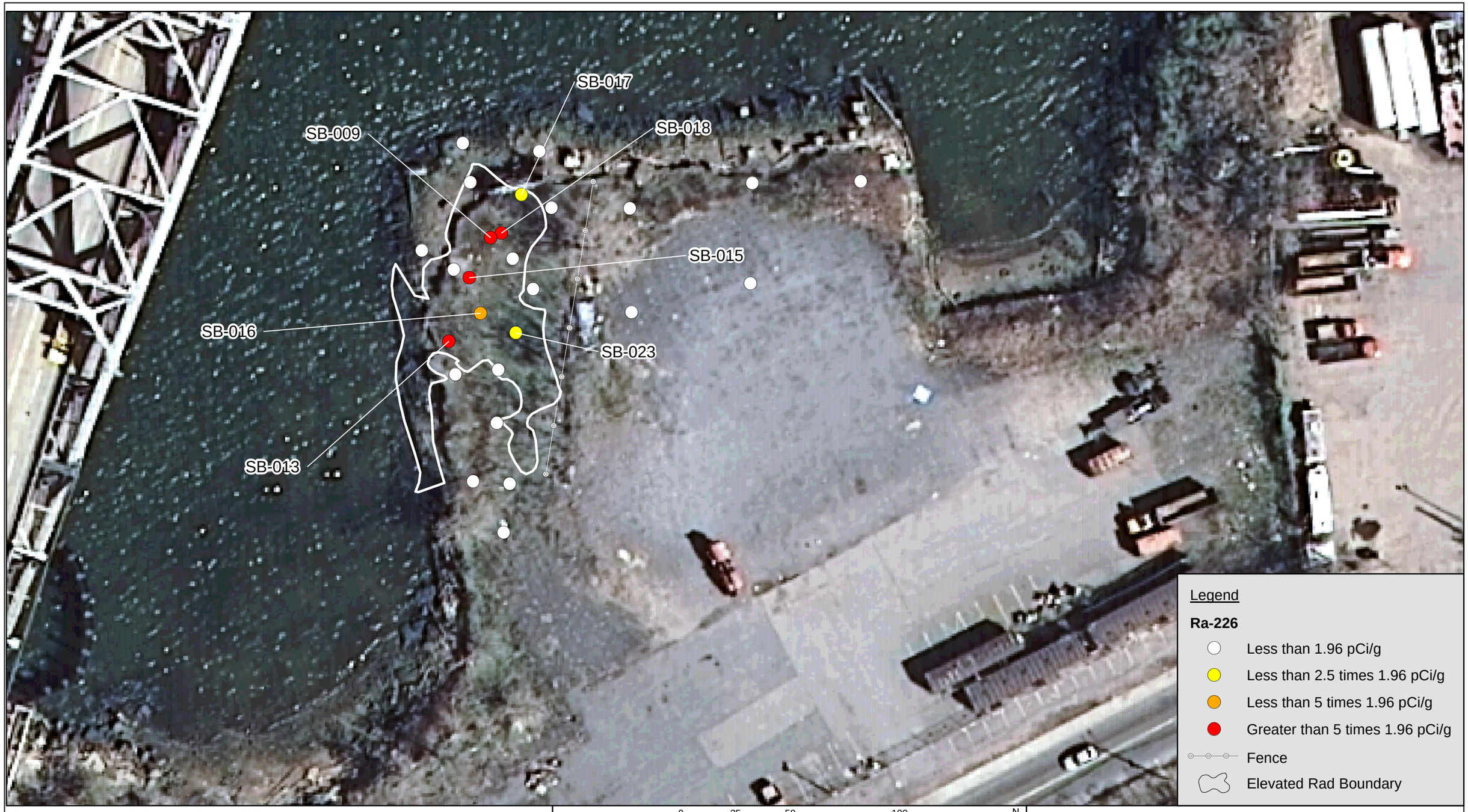
N

Figure 6-3a. Surface Soil Exceedances (Ra-226)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-3b. 0-5 ft Interval Soil Exceedances (Ra-226)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-3c. 5-8 ft Interval Soil Exceedances (Ra-226)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-4a. Surface Soil Exceedances (U-234)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-4b. 0-5 ft Interval Soil Exceedances (U-234)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-4c. 5-8 ft Interval Soil Exceedances (U-234)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

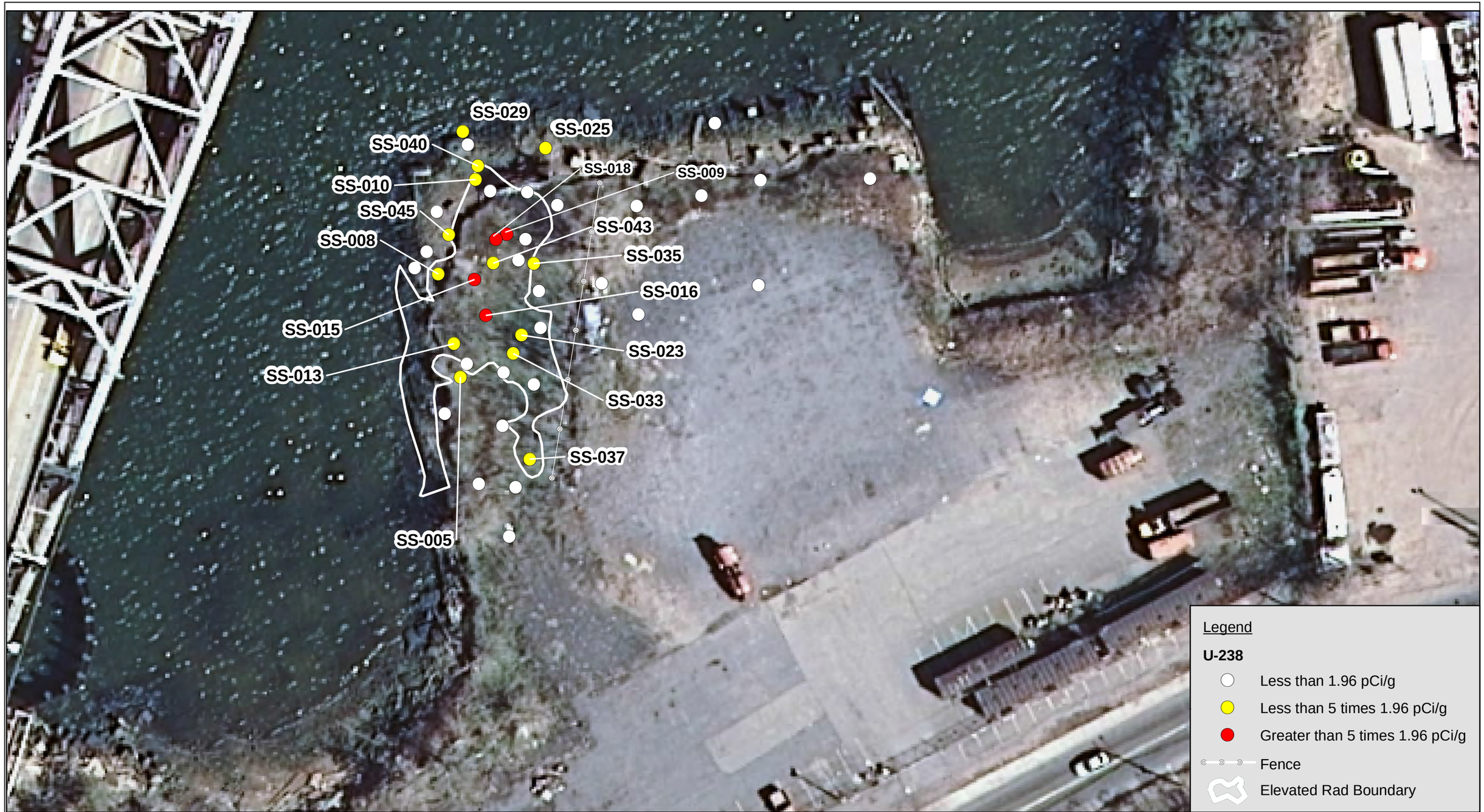
N

Figure 6-5. 0-5 ft Interval Soil Exceedances (U-235)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

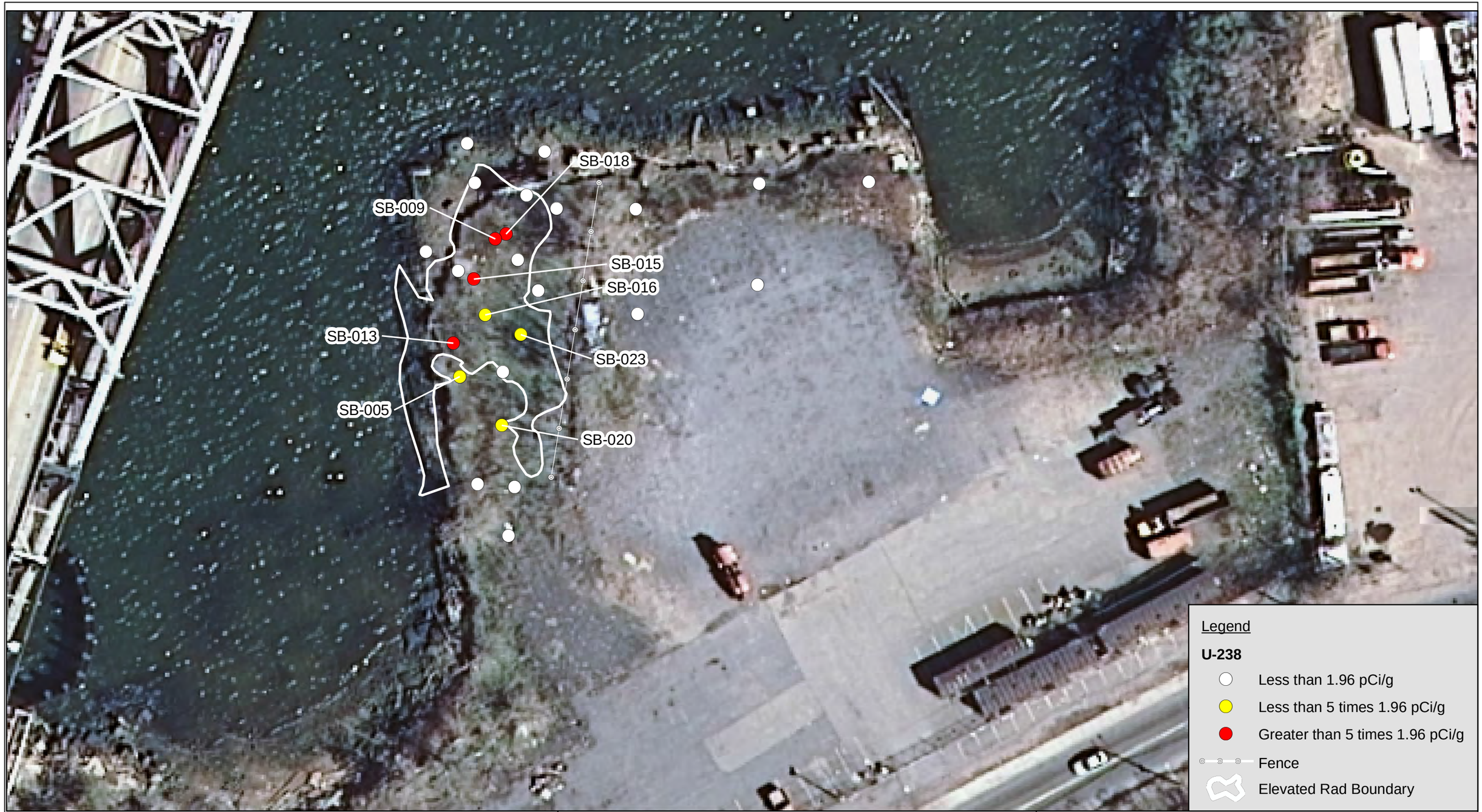
N

Figure 6-6a. Surface Soil Exceedances (U-238)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY



Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-6b. 0-5 ft Interval Surface Soil Exceedances (U-238)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

Source: Aerial from U.S. Geological Survey. 2007.
Coordinate System: State Plane New York Long Island Zone 3104. Meters. NAD83

0 25 50 100 Feet

N

Figure 6-6c. 5-8 ft Interval Surface Soil Exceedances (U-238)

U.S. Army Corps of Engineers

GEO Consultants, LLC
A Geological Engineering and Environmental Services Company
Kevil, Kentucky

Staten Island Warehouse
FUSRAP Site
Staten Island, NY

TABLES

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Table 4-1. Previous sampling results.

		Parameter CAS# Units	Co-60 10198-40-0 pCi/g	Cs-137 10045-97-3 pCi/g	K-40 13966-00-2 pCi/g	Pb-212 15092-94-1 pCi/g	Pb-214 15067-28-4 pCi/g	Ra-226 13982-63-3 pCi/g
Sample ID	**Sample Depth (inches bgs)**	**Sample Date**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Oak Ridge National Laboratory Samples								
ST1	13-16	7/10/1980	NA	NA	NA	NA	NA	590 ± 1.2
NYSDEC Samples								
NR-2-92-003-072201	0-3	7/14/1992	< 0.1	< 0.2	6.2 ± 1.2	0.29 ± 0.16	0.81 ± 0.27	0.53 ± 0.21
NR-2-92-003-072202	3-6	7/14/1992	< 0.11	< 0.24	9.9 ± 2.6	0.7 ± 0.19	0.87 ± 0.23	0.9 ± 0.36
NR-2-92-003-072203	6-10.5	7/14/1992	< 0.1	< 0.18	9 ± 2.1	1.05 ± 0.15	0.98 ± 0.19	0.87 ± 0.24
NR-2-92-003-072204	10.5-14	7/14/1992	< 0.22	< 0.34	6.8 ± 3.7	1.05 ± 0.31	1.48 ± 0.38	1.06 ± 0.47
NR-2-92-003-072205	14-18-E	7/14/1992	< 0.18	< 0.26	9.9 ± 3.3	2.58 ± 0.27	2.51 ± 0.33	1.95 ± 0.4
NR-2-92-003-072206	0-2	7/14/1992	< 0.49	< 0.56	9.7 ± 6.3	1.7 ± 0.58	114.6 ± 2.2	95.3 ± 2.2
NR-2-92-003-072207	2-4	7/14/1992	< 0.34	< 0.54	7.5 ± 6.2	2.6 ± 0.51	18.7 ± 1	16 ± 1.2
NR-2-92-003-072208	4-6	7/14/1992	< 0.87	< 1.8	< 26	2 ± 1.1	18.7 ± 1.9	16.3 ± 2.5
NR-2-92-003-072209	6-10	7/14/1992	< 0.22	< 0.39	7.9 ± 4.6	1.32 ± 0.29	2.03 ± 0.47	2.07 ± 0.52
NR-2-92-003-072210	10-14	7/14/1992	< 0.12	< 0.22	10.7 ± 2.7	1.17 ± 0.19	1.2 ± 0.21	0.99 ± 0.24
NR-2-92-003-072211	14-16.5	7/14/1992	< 0.14	< 0.25	9.5 ± 3.1	1.61 ± 0.23	1.24 ± 0.38	1.53 ± 0.35
NR-2-92-003-072212	0-3	7/14/1992	< 0.28	< 0.65	5.6 ± 5.2	1.89 ± 0.47	53.6 ± 1.2	44.4 ± 1.2
NR-2-92-003-072213	2-4	7/14/1992	< 1.1	< 0.94	< 14	6.9 ± 1.5	453.1 ± 4.8	383.1 ± 4.8
NR-2-92-003-072214	4-6	7/14/1992	< 0.43	< 0.43	10.2 ± 7.7	1.88 ± 0.59	62.8 ± 1.8	51.7 ± 1.7
NR-2-92-003-072215	6-11	7/14/1992	< 0.11	< 0.12	14.5 ± 2	1.27 ± 0.15	1.38 ± 0.19	1.06 ± 0.21
NR-2-92-003-072216	11-14	7/14/1992	< 0.11	< 0.13	10.1 ± 2.2	1.48 ± 0.17	1.4 ± 0.25	1.01 ± 0.31
NR-2-92-003-072217	14-17	7/14/1992	< 0.16	< 0.18	8.4 ± 3.1	1.21 ± 0.29	1.48 ± 0.29	1.15 ± 0.31
NR-2-92-003-072218	0-2	7/14/1992	< 0.83	< 0.68	17 ± 11	< 1.7	534.4 ± 3.8	455.9 ± 3.9
NR-2-92-003-072219	2-4	7/14/1992	< 37	< 29	< 406	< 70	48350 ± 167	38840 ± 160
NR-2-92-003-072220	4-6	7/14/1992	< 18	< 19	< 349	< 22	2629 ± 76	2212 ± 77
NR-2-92-003-072221	6-8	7/14/1992	< 22	< 22	< 349	< 27	5308 ± 102	4109 ± 101
NR-2-92-003-072222	8-12	7/14/1992	< 0.19	< 0.2	8.2 ± 3.6	1.59 ± 0.27	31.6 ± 0.74	26.69 ± 0.79
NR-2-92-003-072223	12-17.5	7/14/1992	< 0.13	< 0.15	10.4 ± 2.2	2.41 ± 0.2	3.34 ± 0.31	2.89 ± 0.39
NR-2-92-003-072224	0-6	7/14/1992	< 0.62	< 0.53	15.3 ± 9.3	2.98 ± 0.76	280.8 ± 2.9	237.8 ± 3
NR-2-92-003-072225	6-12	7/14/1992	< 0.14	< 0.14	7.9 ± 2.6	1.84 ± 0.19	5.2 ± 0.35	4.36 ± 0.4
NR-2-92-003-072226	12-16.5	7/14/1992	< 0.13	< 0.14	8.4 ± 2.5	2.14 ± 0.19	3.05 ± 0.28	2.41 ± 0.39
NR-2-92-003-072227	0-4	7/14/1992	< 0.26	< 0.22	14.6 ± 4.1	1.6 ± 0.4	291.1 ± 1.5	254.9 ± 1.5
NR-9-92-003-072101	2	7/14/1992	< 0.054	0.2 ± 0.078	22.1 ± 1.3	1.237 ± 0.09	1.06 ± 0.11	1.02 ± 0.12
NR-9-92-003-071401	2	7/14/1992	< 0.043	0.33 ± 0.077	9.8 ± 1.1	1.178 ± 0.088	1.06 ± 0.13	0.93 ± 0.11
USEPA, NYSDEC, and NYDOH Samples								
885056	0-6	2/20/2008	NA	NA	NA	NA	NA	15.46 ± 0.5
885057	0-6	2/20/2008	NA	NA	NA	NA	NA	3.84 ± 0.2
885058	0-6	2/20/2008	NA	NA	NA	NA	NA	17.26 ± 0.6
885059	0-6	2/20/2008	NA	NA	NA	NA	NA	90.27 ± 2.8
885060	0-6	2/20/2008	NA	NA	NA	NA	NA	1102 ± 33
885061	0-6	2/20/2008	NA	NA	NA	NA	NA	6.088 ± 0.3
885062	0-6	2/20/2008	NA	NA	NA	NA	NA	1.333 ± 0.1

bgs: below ground surface; Co: cobalt; Cs: cesium; ID: identification, K: potassium; NA: not applicable, NYSDEC: New York State Department of Environmental Conservation; NYDOH: New York Department of Health; pCi/g: picocuries per gram; Pb: lead; Ra: radium; USEPA: U.S. Environmental Protection Agency

Table 4-1. Previous sampling results (continued).

		Parameter CAS# Units	Th-228 14274-82-9 pCi/g	Th-232 7440-29-1 pCi/g	Tl-208 14913-50-9 pCi/g	U-238 7440-61-1 pCi/g	U-235 15117-96-1 pCi/g	Sn-113 13966-06-8 pCi/g
Sample ID	**Sample Depth (inches bgs)**	**Sample Date**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Oak Ridge National Laboratory Samples								
ST1	13-16	7/10/1980	NA	NA	NA	660 ± 19.8	NA	NA
NYSDEC Samples								
NR-2-92-003-072201	0-3	7/14/1992	< 0.56	< 0.4	< 0.52	< 1.7	NA	NA
NR-2-92-003-072202	3-6	7/14/1992	0.74 ± 0.49	0.65 ± 0.57	0.68 ± 0.46	< 1.9	NA	NA
NR-2-92-003-072203	6-10.5	7/14/1992	1.2 ± 0.41	0.73 ± 0.5	1.11 ± 0.38	< 1.6	NA	NA
NR-2-92-003-072204	10.5-14	7/14/1992	1.58 ± 0.67	1.23 ± 0.99	1.46 ± 0.62	< 2.8	NA	NA
NR-2-92-003-072205	14-18-E	7/14/1992	2.6 ± 0.56	2.13 ± 0.85	2.41 ± 0.52	3 ± 2.6	NA	NA
NR-2-92-003-072206	0-2	7/14/1992	2 ± 1.3	1.8 ± 1.7	1.8 ± 1.2	121 ± 13	9.65 ± 0.72	NA
NR-2-92-003-072207	2-4	7/14/1992	1.9 ± 1.3	3.8 ± 2.1	1.7 ± 1.2	31.6 ± 7.8	1.96 ± 0.41	NA
NR-2-92-003-072208	4-6	7/14/1992	< 4.5	< 4	< 4.2	32 ± 16	2.3 ± 1	NA
NR-2-92-003-072209	6-10	7/14/1992	1.08 ± 0.75	< 0.98	1 ± 0.7	17.7 ± 3.5	NA	NA
NR-2-92-003-072210	10-14	7/14/1992	1.72 ± 0.48	1.33 ± 0.56	1.6 ± 0.44	4.4 ± 2.4	NA	NA
NR-2-92-003-072211	14-16.5	7/14/1992	1.56 ± 0.69	1.72 ± 0.8	1.45 ± 0.64	4.7 ± 2.7	NA	NA
NR-2-92-003-072212	0-3	7/14/1992	< 1.4	3.1 ± 1.2	< 1.3	28.5 ± 5.6	3.09 ± 0.37	NA
NR-2-92-003-072213	2-4	7/14/1992	4.7 ± 2.7	< 4.1	4.3 ± 2.5	191.4 ± 2.8	19.3 ± 1.6	NA
NR-2-92-003-072214	4-6	7/14/1992	1.5 ± 1.1	< 39	1.4 ± 1	34.5 ± 7.9	3.54 ± 0.59	NA
NR-2-92-003-072215	6-11	7/14/1992	1.52 ± 0.39	1.32 ± 0.51	1.41 ± 0.36	15.6 ± 2.5	NA	NA
NR-2-92-003-072216	11-14	7/14/1992	1.42 ± 0.41	1.46 ± 0.52	1.31 ± 0.38	7.1 ± 2.2	NA	NA
NR-2-92-003-072217	14-17	7/14/1992	1.63 ± 0.51	1.49 ± 0.73	1.51 ± 0.47	8.6 ± 3.1	NA	NA
NR-2-92-003-072218	0-2	7/14/1992	< 1.9	< 3.1	< 1.7	412 ± 23	25.5 ± 1.2	5 ± 1.3
NR-2-92-003-072219	2-4	7/14/1992	< 76	< 131	< 70	49190 ± 973	2983 ± 53	NA
NR-2-92-003-072220	4-6	7/14/1992	< 45	< 76	< 42	9984 ± 563	616 ± 32	NA
NR-2-92-003-072221	6-8	7/14/1992	< 56	< 86	< 52	27860 ± 1021	1342 ± 45	NA
NR-2-92-003-072222	8-12	7/14/1992	1.05 ± 0.56	1.67 ± 0.78	0.97 ± 0.52	83.4 ± 5.8	5.05 ± 0.31	NA
NR-2-92-003-072223	12-17.5	7/14/1992	2.43 ± 0.43	2.41 ± 0.78	2.25 ± 0.4	21.2 ± 3.2	1.17 ± 0.15	NA
NR-2-92-003-072224	0-6	7/14/1992	< 1.5	< 2.4	< 1.4	345 ± 17	22.64 ± 0.97	NA
NR-2-92-003-072225	6-12	7/14/1992	1.76 ± 0.47	2.22 ± 0.66	1.63 ± 0.44	20.9 ± 2.8	1.49 ± 0.17	NA
NR-2-92-003-072226	12-16.5	7/14/1992	2.16 ± 0.57	2.3 ± 0.57	2 ± 0.52	7.7 ± 2.7	NA	NA
NR-2-92-003-072227	0-4	7/14/1992	1.88 ± 0.72	2.4 ± 1	1.74 ± 0.67	182 ± 11	12.66 ± 0.53	NA
NR-9-92-003-072101	2	7/14/1992	1.16 ± 0.19	1.51 ± 0.33	1.07 ± 0.18	< 1.2	NA	NA
NR-9-92-003-071401	2	7/14/1992	1.1 ± 0.21	1.12 ± 0.25	1.02 ± 0.2	< 1.1	NA	NA
USEPA, NYSDEC, and NYDOH Samples								
885056	0-6	2/20/2008	NA	0.77 ± 0.1	NA	14.04 ± 2.9	1.37 ± 0.34	NA
885057	0-6	2/20/2008	NA	0.39 ± 0.1	NA	2.63 ± 1.48	0.33 ± 0.16	NA
885058	0-6	2/20/2008	NA	0.65 ± 0.1	NA	8.37 ± 2.83	0.92 ± 0.35	NA
885059	0-6	2/20/2008	NA	0.83 ± 0.2	NA	116.4 ± 8.91	9.45 ± 0.89	NA
885060	0-6	2/20/2008	NA	< 0.7	NA	1187 ± 45.1	89.17 ± 3.92	NA
885061	0-6	2/20/2008	NA	1 ± 0.1	NA	3.4 ± 1.97	0.6 ± 0.21	NA
885062	0-6	2/20/2008	NA	0.73 ± 0.1	NA	< 1.03	< 0.12	NA

bgs: below ground surface; ID: identification, NYSDEC: New York State Department of Environmental Conservation; NYDOH: New York Department of Health; pCi/g: picocuries per gram; Sn: tin; Th: thallium; Tl: thallium; U: uranium; USEPA: U.S. Environmental Protection Agency

Table 5-1. Results of radiation subsurface soil samples (alpha and gamma spectroscopy) for the Staten Island Warehouse Site.

Analyte		K-40			Ra-226			Th-232			U-234			U-235			U- 238		
CAS#		13966-00-2			13982-63-3			7440-29-1			13966-29-5			15117-96-1			7440-61-1		
Units		pCi/g			pCi/g			pCi/g			pCi/g			pCi/g			pCi/g		
Screening Level		None			1.96			3.07			4.02			3.95			1.96		
Source of Screening Level		None			USEPA 2008 Background			Residential PRG			Residential PRG			Residential PRG			USEPA 2008 Background		
Sample ID	**Sample Date**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**
SIW-SB-001P-0.0-5.0	7/12/2011	6.8		2	1.9	1.76		0.31	0.14	1.71		0.38	0.21	1.73		0.23	0.02	0.079		0.043	0.015	1.6		0.22	0.01
SIW-SB-001P-5.0-10.0	7/12/2011	9.8		1.6	0.5	0.74		0.19	0.16	1.09		0.31	0.2	1.7		0.26	0.02	0.079		0.052	0.037	1.89		0.27	0.02
SIW-SB-002P-0.0-5.0	7/12/2011	7.4		1.4	1	0.86		0.21	0.18	0.91		0.23	0.14	0.66		0.12	0.02	0.033		0.025	0.013	0.66		0.11	0.01
SIW-SB-003P-0.0-5.0	7/12/2011	14.9		2.1	1	1.07		0.22	0.17	1.3		0.28	0.18	0.65		0.12	0.03	0.027	U	0.027	0.035	0.66		0.12	0.04
SIW-SB-003P-5.0-8.0	7/12/2011	9.2		2.2	1.6	0.97		0.21	0.11	1.07		0.25	0.26	0.64		0.12	0.02	0.019	U	0.02	0.023	0.456		0.094	0.024
SIW-SB-004P-0.0-5.0	7/12/2011	10.4		1.6	0.5	1.22		0.21	0.16	0.65		0.22	0.25	0.71		0.12	0.03	0.026		0.023	0.014	0.64		0.12	0.02
SIW-SB-DUP-001*	7/12/2011	7.7		1.7	0.9	1.06		0.25	0.18	0.54		0.29	0.4	0.78		0.13	0.01	0.046		0.03	0.022	0.79		0.13	0.01
SIW-SB-004P-5.0-10.0	7/12/2011	11.2		1.7	0.9	0.93		0.18	0.14	1.24		0.24	0.24	0.55		0.1	0.01	0.02		0.02	0.013	0.64		0.11	0.02
SIW-SB-005P-0.0-5.0	7/13/2011	12.5		1.8	0.9	1.8		0.27	0.16	1.58		0.3	0.24	2.73		0.32	0.02	0.166		0.064	0.016	**2.67**		0.32	0.01
SIW-SB-005P-5.0-8.0	7/13/2011	15.4		2.8	1.2	1.58		0.3	0.14	1.78		0.36	0.55	1.42		0.27	0.03	0.123		0.078	0.033	1.42		0.27	0.03
SIW-SB-DUP-002*	7/13/2011	17.4		2.5	1.3	1.7		0.29	0.21	1.68		0.41	0.45	1.38		0.19	0.02	0.074		0.04	0.014	1.26		0.18	0.01
SIW-SB-006P-0.0-5.0	7/13/2011	10.8		1.7	0.5	0.72		0.16	0.13	0.54		0.19	0.27	0.67		0.12	0.02	0.028		0.024	0.022	0.65		0.12	0.01
SIW-SB-006P-5.0-8.0	7/13/2011	11.1		1.6	0.8	0.7		0.16	0.14	0.74		0.2	0.09	0.48		0.094	0.022	0.022		0.021	0.021	0.431		0.088	0.02
SIW-SB-007P-0.0-5.0	7/13/2011	10.3		1.7	0.9	0.96		0.17	0.11	0.65		0.23	0.35	0.82		0.13	0.02	0.063		0.036	0.022	0.87		0.14	0.02
SIW-SB-007P-5.0-8.0	7/13/2011	11		1.8	1.1	**2.8**		0.36	0.2	1.17		0.33	0.29	3.93		0.42	0.01	0.152		0.058	0.014	**3.59**		0.39	0.01
SIW-SB-008P-0.0-5.0	7/14/2011	12		2.1	1.1	1.57		0.29	0.2	1.47		0.32	0.3	1.24		0.19	0.02	0.053		0.035	0.016	0.92		0.15	0.01
SIW-SB-008P-5.0-8.0	7/14/2011	12.3		2	0.7	**2.04**		0.31	0.19	2.81		0.41	0.14	2.06		0.25	0.02	0.124		0.052	0.014	1.82		0.23	0.02
SIW-SB-009P-0.0-5.0	7/14/2011	15.3		3.6	2.8	**47.6**		3.1	0.5	2.82		0.72	1.1	**40.7**		4.3	0.3	**4.5**		1.6	1.9	**40.9**		4.3	0.2
SIW-SB-009P-5.0-8.0	7/14/2011	14.6		2.4	1.2	**2.13**		0.34	0.23	1.26		0.29	0.26	**4.08**		0.45	0.01	0.7		0.5	0.63	**3.99**		0.45	0.01
SIW-SB-010P-0.0-5.0	7/15/2011	11.5		2.7	2	1.77		0.42	0.32	1.03		0.41	0.45	1.53		0.2	0.02	0.083		0.042	0.014	1.28		0.18	0.01
SIW-SB-DUP-005*	7/15/2011	11.5		2.6	1.8	1.72		0.35	0.22	1.27		0.39	0.23	1.75		0.22	0.03	0.076		0.04	0.014	1.84		0.23	0.02
SIW-SB-010P-5.0-8.0	7/15/2011	11.6		1.9	1	0.6		0.17	0.17	1.19		0.21	0.12	0.73		0.13	0.01	0.056		0.036	0.015	0.66		0.12	0.02
SIW-SB-011P-0.0-5.0	7/13/2011	15.8		2.9	1.2	1.79		0.34	0.19	1.72		0.4	0.47	0.9		0.14	0.01	0.019	U	0.021	0.023	1		0.15	0.02
SIW-SB-011P-5.0-8.0	7/13/2011	17.8		2.6	1.3	1.29		0.27	0.22	1.73		0.32	0.3	0.75		0.13	0.02	0.037		0.028	0.014	0.65		0.12	0.01
SIW-SB-012P-0.0-5.0	7/13/2011	15		2.2	1.1	1.22		0.24	0.19	1.44		0.34	0.26	0.75		0.13	0.03	0.064		0.037	0.014	0.86		0.14	0.01
SIW-SB-012P-5.0-8.0	7/13/2011	17.3		2.4	0.6	0.97		0.2	0.17	1.57		0.33	0.12	0.83		0.15	0.01	0.037		0.031	0.017	0.82		0.14	0.01
SIW-SB-013P-0.0-5.0	7/14/2011	4.5	U	3	4.8	**95.8**		5.9	0.7	1.2	U	0.88	1.6	**37.3**		3.4	0.05	**4.6**		2.3	2.8	**36.6**		3.3	0.03
SIW-SB-013P-5.0-8.0	7/14/2011	15.7		2.3	1.1	**3.7**		0.44	0.24	2.91		0.42	0.42	**6.77**		0.68	0.03	0.35		0.1	0.04	**6.15**		0.63	0.03
SIW-SB-014P-0.0-5.0	7/13/2011	1.57		0.28	0.11	0.102		0.024	0.017	0.068		0.028	0.06	0.74		0.13	0.02	0.067		0.037	0.014	0.73		0.13	0.03
SIW-SB-014P-5.0-8.0	7/13/2011	23.3		3	1.2	1.02		0.24	0.2	1.22		0.27	0.43	1.91		0.25	0.04	0.131		0.059	0.036	1.88		0.25	0.03
SIW-SB-015P-0.0-5.0	7/14/2011	15		3.5	2.7	**54.4**		3.5	0.6	1.55		0.63	1.1	**65.4**		6.4	0.2	**4.2**		1.3	1.9	**63**		6.2	0.3
SIW-SB-016P-0.0-5.0	7/14/2011	13.9		2.2	1.2	**8.29**		0.73	0.26	2.11		0.46	0.31	**9.68**		0.93	0.02	0.48		0.12	0.04	**9.63**		0.92	0.03
SIW-SB-016P-5.0-8.0	7/14/2011	11		2.3	1.1	1.27		0.31	0.22	1.27		0.36	0.19	2.2		0.26	0.03	0.131		0.053	0.026	**2.12**		0.26	0.03
SIW-SB-017P-0.0-5.0	7/14/2011	13.7		2.1	1.2	**3.84**		0.44	0.22	1.29		0.28	0.23	1.83		0.23	0.03	0.078		0.04	0.013	1.9		0.24	0.01
SIW-SB-018P-0.0-5.0	7/14/2011	16.2		2.6	1.6	**26.1**		1.8	0.5	2.6		0.66	0.57	**34.5**		3.1	0.05	2.9		1.4	1.6	**34.2**		3.1	0.06
SIW-SB-DUP-003*	7/14/2011	15.5		2.2	1.2	**20.5**		1.5	0.4	2.91		0.64	0.54	**24.6**		2.2	0.06	1.32		0.76	1.3	**24**		2.2	0.07
SIW-SB-019P-0.0-5.0	7/13/2011	6.7		1.6	1.3	0.46		0.15	0.14	0.13	U	0.14	0.34	0.447		0.09	0.028	0.013	U	0.016	0.021	0.473		0.094	0.032
SIW-SB-019P-5.0-8.0	7/13/2011	8		1.4	0.6	0.26		0.12	0.15	0.49		0.16	0.1	0.246		0.061	0.022	0.0031	U	0.0084	0.019	0.273		0.064	0.009
SIW-SB-020P-0.0-5.0	7/14/2011	14.1		2	1	1.41		0.24	0.17	1.52		0.29	0.11	1.98		0.26	0.03	0.101		0.05	0.027	**2.01**		0.26	0.02
SIW-SB-020P-5.0-8.0	7/14/2011	13		1.9	0.5	1.08		0.18	0.11	0.97		0.23	0.26	1.06		0.17	0.03	0.029		0.028	0.028	1		0.16	0.02
SIW-SB-021P-0.0-5.0	7/15/2011	14.9		2.2	1.1	1.5		0.28	0.2	1.47		0.27	0.19	1.15		0.17	0.02	0.069		0.039	0.014	1.15		0.17	0.01
SIW-SB-021P-5.0-8.0	7/15/2011	9.8		1.8	1.3	0.71		0.18	0.16	0.61		0.25	0.41	0.92		0.14	0.02	0.031		0.025	0.021	0.96		0.14	0.02
SIW-SB-022P-0.0-5.0	7/14/2011	16.4		2.4	0.7	1.15		0.25	0.21	1.63		0.34	0.14	0.78		0.16	0.03	0.034	U	0.036	0.041	0.92		0.18	0.02
SIW-SB-022P-5.0-8.0	7/14/2011	19.6		2.5	1.1	1.25		0.26	0.2	1.5		0.35	0.29	0.67		0.14	0.03	0.012	U	0.02	0.032	0.73		0.14	0.03
SIW-SB-023P-0.0-5.0	7/15/2011	12.1		2.2	1.3	**2.48**		0.36	0.23	2.67		0.41	0.29	2.54		0.3	0.02	0.134		0.056	0.015	**2.62**		0.31	0.02
SIW-SB-023P-5.0-8.0	7/15/2011	9		1.9	0.9	0.78		0.18	0.11	0.59		0.22	0.33	1.28		0.18	0.02	0.048		0.031	0.022	1.19		0.17	0.02
SIW-SB-024P-0.0-5.0	7/15/2011	11.4		2	1.3	1.63		0.28	0.2	1.9		0.32	0.13	1.61		0.21	0.01	0.069		0.036	0.012	1.69		0.21	0.01
SIW-SB-DUP-004*	7/15/2011	12.2		2	1	1.63		0.28	0.2	1.68		0.37	0.26	1.85		0.24	0.02	0.062		0.037	0.024	1.89		0.24	0.02
SIW-SB-025P-0.0-5.0	7/15/2011	10.6		2	1.5	1.09		0.23	0.18	1.51		0.32	0.14	1.08		0.16	0.01	0.038		0.027	0.013	1.03		0.15	0.01
SIW-SB-026P-0.0-5.0	7/15/2011	14.5		2.3	1.2	1.87		0.37	0.29	2.36		0.5	0.44	1.9		0.24	0.02	0.077		0.042	0.015	1.77		0.23	0.02

VALUE Value exceeds the Screening Level as outlined in the QAPP (USACE 2011b)

2σ: total uncertainty; CAS: Chemical Abstract Service; ID: identification, MDC: Minimum Detectable Concentration; pCi/g: picocuries per gram; PRG: Preliminary Remediation Goal, Qual: Data Qualifer; UPL: Upper Prediction Limit; USEPA: U.S. Environmental Protection Agency; U: not detected at the assocated level; *The DUP is a field duplicate of the preceding sample

Table 5-2. Downhole gamma scan results (cpm).

Depth (ft bgs)	001	002	003*	004	005**	006	007*	008	009	010**	011*	012	013*	014	015	016	017	018	019*	020	021**	022*	023*	024	025**	026**
1	2000	1400	-	1000	1158	491	-	2700	6100	-	1231	2168	10000	1530	7000	2700	1900	19000	800	1700	-	1600	2500	2800	-	-
2	3000	1700	-	1200	2586	943	-	1700	3300	-	2123	2431	2600	1600	1500	1700	1800	5000	950 (1.5 ft)	1500	-	3000	3300	1900	-	-
3	2000	500	-	1100	1718	1136	-	1400	1300	-	2716	1930	2000	1169	1300	2300	820	2000	-	1900	-	3500	1500	1400	-	-
4	2000	500	-	1200	2100	1744	-	1629	1100	-	2522	1560	2700	750	900	1100	550	1300	-	1500	-	1500	754	900	-	-
5	-	600	-	1300	-	1112	-	2500	2600	-	-	1460	4200	1250	1500	800	-	2000	-	1700	-	-	500	1100 (4.5 ft)	-	-
6	-	-	-	1400	-	1021	-	2000	800	-	-	-	5600	850	-	-	-	4500 (5.5 ft)	-	-	-	-	-	-	-	-
7	-	-	-	1600	-	904 (6.5 ft)	-	2100	1500	-	-	-	-	900	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Hole collapsed; **Encountered groundwater; --: no data; cpm: counts per minute; ft bgs: foot/feet below ground surface

Table 5-3. Results of radiation surface soil samples (alpha and gamma spectroscopy) for the Staten Island Warehouse Site.

Analyte		K-40				Ra-226				Th-232				U-234				U-235				U- 238			
CAS#		13966-00-2				13982-63-3				7440-29-1				13966-29-5				15117-96-1				7440-61-1			
Units		pCi/g				pCi/g				pCi/g				pCi/g				pCi/g				pCi/g			
Screening Level		None				1.96				3.07				4.02				3.95				1.96			
Source of Screening Level		None				USEPA 2008 Background				Residential PRG				Residential PRG				Residential PRG				USEPA 2008 Background			
Sample ID	**Sample Date**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**
SIW-SS-001P-0.0-2.0	7/16/2011	12.3		2.1	0.7	**5.72**		0.61	0.3	1.94		0.42	0.15	1.78		0.22	0.02	0.111		0.045	0.012	1.94		0.23	0.009
SIW-SS-002P-0.0-2.0	7/16/2011	14.5		2.1	1.1	1.74		0.33	0.25	1.77		0.35	0.12	1.23		0.17	0.02	0.062		0.036	0.026	1.37		0.19	0.02
SIW-SS-003P-0.0-2.0	7/15/2011	10.2		1.5	0.7	0.38		0.1	0.1	0.69		0.17	0.15	0.287		0.072	0.018	0.005	U	0.01	0.014	0.283		0.073	0.032
SIW-SS-004P-0.0-2.0	7/15/2011	9.5		2	1	0.72		0.19	0.14	0.56		0.2	0.35	0.65		0.11	0.03	0.024	U	0.023	0.027	0.475		0.094	0.024
SIW-SS-005P-0.0-2.0	7/16/2011	6.9		1.5	0.7	**2.81**		0.38	0.22	1.26		0.32	0.13	3.16		0.35	0.02	0.133		0.053	0.014	**2.88**		0.33	0.02
SIW-SS-006P-0.0-2.0	7/15/2011	6.9		1.2	0.8	0.23		0.11	0.12	0.45		0.14	0.13	0.233		0.062	0.017	0.005	U	0.014	0.029	0.233		0.063	0.024
SIW-SS-007P-0.0-2.0	7/15/2011	9.2		1.4	0.7	0.38		0.12	0.12	0.49		0.14	0.08	0.361		0.085	0.031	0.008	U	0.015	0.028	0.314		0.078	0.029
SIW-SS-008P-0.0-2.0	7/16/2011	5.5		1.1	0.8	**2.96**		0.37	0.21	**3.32**		0.38	0.22	1.77		0.24	0.04	0.092		0.047	0.016	**2.04**		0.26	0.01
SIW-SS-009P-0.0-2.0	7/16/2011	17.1		4.4	3.2	**36.3**		2.6	0.6	2.01		0.8	1.2	**33.9**		3	0.05	2.9		1.2	1.7	**33.4**		3	0.06
SIW-SS-010P-0.0-2.0	7/15/2011	9		1.5	0.5	**2.88**		0.36	0.21	1.38		0.34	0.32	2.68		0.3	0.03	0.162		0.058	0.022	**2.8**		0.31	0.03
SIW-SS-011P-0.0-2.0	7/16/2011	10.4		1.7	1.1	1.27		0.25	0.19	0.64		0.22	0.3	1.13		0.16	0.03	0.093		0.043	0.021	0.96		0.15	0.01
SIW-SS-012P-0.0-2.0	7/16/2011	12.5		2.5	1.2	**3.29**		0.48	0.26	2.13		0.44	0.2	1.91		0.24	0.03	0.152		0.056	0.022	1.88		0.23	0.02
SIW-SS-013P-0.0-2.0	7/16/2011	11.5		2.7	1.9	**19.1**		1.4	0.4	1.82		0.52	0.53	**9.11**		0.87	0.02	0.54		0.12	0.03	**9.48**		0.9	0.02
SIW-SS-014P-0.0-2.0	7/16/2011	11.4		2	1.3	**5.28**		0.52	0.24	1.66		0.39	0.37	1.75		0.22	0.03	0.068		0.039	0.027	1.58		0.21	0.02
SIW-SS-015P-0.0-2.0	7/16/2011	15.8		2.9	1.2	**19.5**		1.6	0.4	2.36		0.7	0.79	**10.3**		0.97	0.02	0.53		0.12	0.03	**10.1**		0.96	0.02
SIW-SS-016P-0.0-2.0	7/16/2011	13.5		3.7	2.9	**42**		2.8	0.5	2.82		0.82	0.77	**11.9**		1.1	0.03	0.69		0.15	0.02	**11.5**		1.1	0.01
SIW-SS-DUP-002*	7/16/2011	11.4		2.5	2.1	**33.2**		2.2	0.5	2.82		0.68	0.64	**11.8**		1.1	0.04	0.56		0.13	0.03	**11.8**		1.1	0.04
SIW-SS-017P-0.0-2.0	7/16/2011	12.2		1.9	1.1	**6.97**		0.66	0.29	1.49		0.34	0.33	1.78		0.23	0.02	0.054		0.034	0.023	1.82		0.23	0.01
SIW-SS-018P-0.0-2.0	7/16/2011	13.7		3.2	2.5	**35.2**		2.3	0.5	2.29		0.84	0.78	**58.4**		5.8	0.2	3		1.3	1.6	**56.6**		5.6	0.2
SIW-SS-DUP-004*	7/16/2011	17.7		3.7	2.6	**36.5**		2.5	0.6	**3.37**		0.73	0.8	**38**		3.4	0.05	2.7		1.3	1.7	**31.2**		7.2	8.1
SIW-SS-019P-0.0-2.0	7/15/2011	4.3		1.3	1.1	0.47		0.13	0.09	0.19	U	0.19	0.33	0.277		0.069	0.017	0.014		0.016	0.013	0.291		0.071	0.017
SIW-SS-020P-0.0-2.0	7/16/2011	6.9		1.6	1.4	**2.46**		0.34	0.19	1.19		0.3	0.19	1.65		0.21	0.02	0.06		0.035	0.022	1.72		0.22	0.02
SIW-SS-021P-0.0-2.0	7/15/2011	12.1		2	1.2	1.49		0.3	0.24	2.01		0.37	0.22	1.73		0.24	0.04	0.082		0.048	0.04	1.7		0.23	0.04
SIW-SS-DUP-001*	7/15/2011	11		1.9	0.7	1.82		0.29	0.17	1.46		0.32	0.13	1.85		0.26	0.03	0.078		0.05	0.045	1.9		0.26	0.04
SIW-SS-022P-0.0-2.0	7/16/2011	10.1		1.5	0.7	0.49		0.12	0.11	0.4		0.15	0.31	0.328		0.075	0.021	0.0034		0.0093	0.021	0.331		0.075	0.021
SIW-SS-023P-0.0-2.0	7/16/2011	11.8		2.3	1.1	**3.77**		0.5	0.23	2.2		0.48	0.4	2.19		0.27	0.03	0.097		0.046	0.015	**2.21**		0.27	0.02
SIW-SS-024P-0.0-2.0	7/16/2011	12.6		1.8	0.9	1.75		0.26	0.16	1.18		0.24	0.24	1.87		0.24	0.01	0.088		0.043	0.014	1.79		0.23	0.02
SIW-SS-DUP-003*	7/16/2011	13.1		2.3	1	1.49		0.27	0.15	1.02		0.29	0.26	1.69		0.22	0.03	0.058		0.035	0.014	1.72		0.22	0.01
SIW-SS-025P-0.0-2.0	7/16/2011	7		1.3	1	0.91		0.19	0.19	0.76		0.21	0.22	2.85		0.33	0.02	0.42		0.34	0.41	**2.72**		0.32	0.01
SIW-SS-026P-0.0-2.0	7/15/2011	10.5		1.9	1.1	1.86		0.33	0.24	2.26		0.37	0.4	1.72		0.22	0.02	0.089		0.043	0.013	1.58		0.21	0.01
SIW-SS-027P-0.0-2.0	7/15/2011	18.4		2.2	0.5	1.03		0.2	0.15	1.79		0.29	0.16	0.84		0.14	0.03	0.046		0.035	0.037	0.85		0.14	0.04
SIW-SS-028P-0.0-2.0	7/15/2011	9.4		1.6	1	1.52		0.24	0.16	1.37		0.24	0.17	1.78		0.22	0.02	0.09		0.043	0.022	1.64		0.21	0.02
SIW-SS-029P-0.0-2.0	7/16/2011	7.5		1.3	0.8	1.37		0.22	0.16	0.87		0.22	0.21	2.19		0.27	0.03	0.103		0.048	0.015	**2.14**		0.26	0.02
SIW-SS-030P-0.0-2.0	7/16/2011	12.9		1.9	0.6	1.64		0.28	0.19	1.53		0.35	0.18	1.64		0.22	0.01	0.11		0.051	0.016	1.6		0.22	0.02
SIW-SS-031P-0.0-2.0	7/16/2011	14.7		2.3	1.3	**2.19**		0.35	0.24	1.71		0.33	0.23	0.81		0.14	0.02	0.037		0.028	0.014	0.75		0.13	0.01
SIW-SS-032P-0.0-2.0 (TP-04)	7/16/2011	10.6		1.6	0.7	0.57		0.13	0.11	0.73		0.17	0.15	0.5		0.1	0.01	0.021		0.021	0.014	0.412		0.091	0.011
SIW-SS-033P-0.0-2.0 (TP-03)	7/16/2011	13.6		2.5	1.1	**2.2**		0.37	0.2	1.97		0.41	0.38	1.94		0.25	0.03	0.104		0.05	0.016	**2.25**		0.28	0.01
SIW-SS-034P-0.0-2.0 (TP-02)	7/16/2011	8.5		1.7	1.1	**2.32**		0.33	0.19	1.82		0.3	0.19	1.9		0.24	0.01	0.075		0.039	0.013	1.72		0.22	0.02
SIW-SS-035P-0.0-2.0 (TP-01)	7/16/2011	7.2		1.5	1.1	1.93		0.3	0.19	0.69		0.22	0.12	2.09		0.26	0.01	0.084		0.045	0.026	**2.12**		0.27	0.02
SIW-SS-036P-0.0-2.0	7/17/2011	9.9		1.9	1.2	**2.21**		0.32	0.2	2.41		0.38	0.27	1.71		0.23	0.02	0.092		0.047	0.016	1.67		0.23	0.01
SIW-SS-037P-0.0-2.0	7/17/2011	12.3		2	1	**2.66**		0.39	0.27	**3.12**		0.52	0.3	3.22		0.36	0.03	0.148		0.059	0.025	**3.38**		0.37	0.01
SIW-SS-038P-0.0-2.0	7/17/2011	14.3		2.7	1.2	1.89		0.35	0.19	1.66		0.38	0.21	0.94		0.15	0.03	0.038		0.028	0.023	1.04		0.16	0.02
SIW-SS-039P-0.0-2.0	7/17/2011	11.3		1.9	0.6	**2.59**		0.35	0.21	1		0.28	0.38	1.45		0.19	0.02	0.08		0.04	0.022	1.37		0.19	0.02
SIW-SS-040P-0.0-2.0	7/17/2011	12.3		2	1.1	1.65		0.32	0.26	1.53		0.27	0.21	1.91		0.24	0.03	0.105		0.049	0.029	**1.98**		0.25	0.02
SIW-SS-DUP-005*	7/17/2011	11.3		1.8	1.1	1.49		0.26	0.19	1.37		0.29	0.22	1.66		0.22	0.03	0.094		0.046	0.024	1.44		0.2	0.04
SIW-SS-041P-0.0-2.0	7/17/2011	16.1		2.8	1.1	1.39		0.29	0.18	1.37		0.3	0.19	0.77		0.17	0.04	0.007	U	0.02	0.045	0.9		0.19	0.04
SIW-SS-042P-0.0-2.0	7/17/2011	6.1		1.1	0.4	0.33		0.12	0.13	0.28		0.14	0.17	0.254		0.07	0.025	0.016		0.019	0.014	0.278		0.073	0.012
SIW-SS-043P-0.0-2.0	7/17/2011	11.7		1.9	1.1	**6.18**		0.6	0.25	1.45		0.29	0.12	**7.19**		0.71	0.02	0.93		0.6	0.78	**7.17**		0.71	0.01
SIW-SS-044P-0.0-2.0	7/17/2011	5.5		1.2	0.8	1.77		0.27	0.17	0.22	U	0.12	0.36	1.26		0.18	0.03	0.078		0.042	0.024	1.28		0.18	0.02
SIW-SS-045P-0.0-2.0	7/17/2011	6.8		2.2	2.4	**15.8**		1.3	0.3	2.08		0.76	0.63	**8.13**		0.78	0.02	1.13		0.79	1.1	**7.78**		0.75	0.02

VALUE Value exceeds the Screening Level as outlined in the QAPP (USACE 2011b)

2σ: total uncertainty; CAS: Chemical Abstract Service; ID: identification, MDC: Minimum Detectable Concentration; pCi/g: picocuries per gram; PRG: Preliminary Remediation Goal, Qual: Data Qualifer; UPL: Upper Prediction Limit; USEPA: U.S. Environmental Protection Agency, U: not detected at the assocated level; *The DUP is a field duplicate of the preceding sample

Table 5-4. Water quality parameters for groundwater samples collected from the Staten Island Warehouse Site.

Sample ID		Temperature (°C)		Specific Conductance (mS/cm)		Dissolved Oxygen (mg/L)		pH (S.U.)		ORP (mV)		Turbidity (NTU)		Salinity (PSS)	
Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered	Unfiltered	Filtered
SIW-GW-005UFP	SIW-GW-005FP	22.89	21.84	33.3	33.9	3.17	3.59	6.31	6.25	50.1	50.3	56.0	50.0	20.84	21.23
SIW-GW-009UFP	SIW-GW-009FP	24.2	24.36	35.1	32.8	3.36	3.74	6.57	6.56	45.8	45.2	54.7	49.5	22.06	20.45
SIW-GW-010UFP	SIW-GW-010FP	22.84	24.62	34.6	34.4	4.39	3.93	6.18	6.24	48.2	47.4	57.6	55.3	21.66	21.67
SIW-GW-016UFP	SIW-GW-016FP	24.15	24.58	34.6	34.7	3.85	4.36	6.46	6.31	46.4	47.0	68.7	62.7	21.78	21.74
SIW-GW-023UFP	SIW-GW-023FP	22.46	22.42	34.8	35.1	4.71	4.04	6.55	6.66	43.9	46.6	75.8	52.3	21.79	21.99
SIW-GW-026UFP	SIW-GW-026FP	24.52	24.18	35.6	35.2	6.06	5.73	7.31	7.32	49.1	48.6	54.5	50.8	22.41	20.66

mg/L: milligrams/liter; ms/cm: milliSiemens per centimeter; mV: millivolts, NTU: Nephlometric Turbidity Unit, PSS: Practical Salinity Scale; S.U.: Standard Unit; °C: degrees Celsius

Table 5-5. Results of radiation groundwater samples for the Staten Island Warehouse Site.

		Analyte	Gross Alpha						Gross Beta						Ra-226						Ra-228					
		CAS#	12587-46-1						12587-47-2						13982-63-3						15262-20-1					
		Units	pCi/L						pCi/L						pCi/L						pCi/L					
		Screening Level	15						50						5						5					
Sample ID			Unfiltered				Filtered				Unfiltered				Filtered				Unfiltered				Filtered			
Unfiltered	Filtered	CollectedDate	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC
SIW-GW-010UFP	SIW-GW-010FP	7/17/2011	-10	U	120	230	-14	U	99.9	200	221		75	93	137		73	110	1.91		0.35	0.22	2.16		0.37	0.19	0.5		0.24	0.34	0.51		0.27	0.39
SIW-GW-016UFP	SIW-GW-016FP	7/17/2011	2	U	100	200	-35	U	52	130	181		81	110	158		59	80	0.73		0.23	0.19	0.91		0.23	0.17	0.31	U	0.33	0.53	0.32	U	0.23	0.36
SIW-GW-023UFP	SIW-GW-023FP	7/17/2011	8	U	69	140	24	U	84	150	109		54	79	140		49	60	0.27		0.14	0.18	0.35		0.16	0.18	0.25	U	0.27	0.43	0.13	U	0.27	0.46
SIW-GW-026UFP	SIW-GW-026FP	7/17/2011	-14	U	71	150	7	U	84	170	161		60	81	52	U	72	120	0.29		0.14	0.16	-0.03	U	0.11	0.21	0.02	U	0.25	0.44	0.16	U	0.25	0.42
SIW-GW-005UFP	SIW-GW-005FP	7/17/2011	29	U	93	170	30	U	100	190	89	U	62	94	66	U	46	71	0.74		0.21	0.17	0.52		0.19	0.2	0.07	U	0.26	0.45	0.46		0.27	0.4
SIW-GW-UFDUP*	SIW-GW-FDUP*	7/17/2011	2	U	62	130	64	U	82	130	171		61	80	114		58	84	0.29		0.16	0.22	0.61		0.2	0.18	0.47		0.3	0.45	0.38	U	0.29	0.45
SIW-GW-009UFP	SIW-GW-009FP	7/17/2011	-17	U	78	160	32	U	88	160	96		47	67	102		47	65	1.25		0.28	0.22	0.85		0.25	0.2	0.31	U	0.22	0.33	0.52		0.29	0.43

VALUE Value exceeds the Screening Level as outlined in the QAPP (USACE 2011b)

2σ: total uncertainty; CAS: Chemical Abstract Service; ID: identification, mrem/yr: millirems per year, MDC: Minimum Detectable Concentration; pCi/L: picocuries per liter; Qual: Data Qualifer; UPL: Upper Prediction Limit; USEPA: U.S. Environmental Protection Agency

J: Estimated value; R: rejected data point; U: not detected at the assocated level; UJ: not detected and associated value is estimated

See http://water-epa.gov/drink/contaminants/index.cfm#Radionuclides for gross alpha and beta MCLs.

Table 5-5. Results of radiation groundwater samples for the Staten Island Warehouse Site (continued).

		Analyte	U-234						U-235/236						U-238					
		CAS#	13966-29-5						15117-96-1						7440-61-1					
		Units	pCi/L						pCi/L						pCi/L					
		Screening Level	187000						64.8						10.1					
Sample ID			Unfiltered				Filtered				Unfiltered				Filtered				Unfiltered				Filtered			
Unfiltered	Filtered	CollectedDate	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC	Result	Qual	2 σ	MDC
SIW-GW-010UFP	SIW-GW-010FP	7/17/2011	0.98		0.2	0.07	0.78		0.2	0.06	0.055	U	0.1	0.065	0.055		0.1	0.037	0.73		0.18	0.05	0.62		0.17	0.03
SIW-GW-016UFP	SIW-GW-016FP	7/17/2011	0.51		0.1	0.05	0.59		0.15	0.02	0.045		0	0.03	0.066		0.1	0.03	0.57		0.15	0.04	0.61		0.16	0.02
SIW-GW-023UFP	SIW-GW-023FP	7/17/2011	0.95		0.2	0.05	0.91		0.21	0.07	0.052		0	0.05	0.013	U	0	0.034	0.67		0.16	0.05	0.85		0.2	0.05
SIW-GW-026UFP	SIW-GW-026FP	7/17/2011	0.84		0.2	0.04	0.76		0.18	0.07	0.01	U	0	0.028	0.012	U	0	0.075	0.65		0.16	0.02	0.75		0.18	0.08
SIW-GW-005UFP	SIW-GW-005FP	7/17/2011	1.5		0.3	0.03	0.96		0.2	0.04	0.05		0.1	0.034	0.053		0	0.029	1.5		0.28	0.05	0.83		0.18	0.02
SIW-GW-UFDUP*	SIW-GW-FDUP*	7/17/2011	1.08		0.2	0.03	1		0.22	0.04	0.045	U	0	0.054	0.037		0	0.033	1.05		0.22	0.03	0.91		0.2	0.03
SIW-GW-009UFP	SIW-GW-009FP	7/17/2011	2.15		0.3	0.05	1.78		0.29	0.02	0.085		0.1	0.029	0.095		0.1	0.029	1.93		0.3	0.05	1.61		0.27	0.02

VALUE Value exceeds the Screening Level as outlined in the QAPP (USACE 2011b)

2σ: total uncertainty; CAS: Chemical Abstract Service; ID: identification, mrem/yr: millirems per year, MDC: Minimum Detectable Concentration; pCi/L: picocuries per liter; Qual: Data Qualifer; UPL: Upper Prediction Limit; USEPA: U.S. Environmental Protection Agency

U: not detected at the assocated level; *The DUP is a field duplicate of the preceding sample

An activity concentration of >50 pCi/L often is used as an indication of when specific beta-emitting isotopes should be analyzed.

See http://water-epa.gov/drink/contaminants/index.cfm#Radionuclides for gross alpha and beta MCLs.

Table 5-6. Test pit gamma scan results.

Note: See Figure 5-3 for test pit location.

Identification Number/Date Scanned	Total Depth (ft bgs)	Analytical Group	Gamma Scan Results	Survey Instrument
TP-01/07-16-2011	6	Gamma Survey	Background: ~10,000	2221 with 44-10
			Pile: 1300	2221 with 44-62
			Pit walls: ~600	2221 with 44-62
TP-02/07-16-2011	6	Gamma Survey	Background: ~10,000	2221 with 44-10
			Surface: 8000-9000 cpm [1]	2221 with 44-10
			Pile: 23,000 (~2ft)	2221 with 44-10
			Pit walls: ~600	2221 with 44-62
TP-03/07-16-2011	6	Gamma Survey	Background: ~10,000	2221 with 44-10
			Pile: ~10,000	2221 with 44-10
			Pit walls: ~600	2221 with 44-62
TP-04/07-16-2011	6	Gamma Survey	Background: ~10,000	2221 with 44-10
			Pile: ~10,000	2221 with 44-10
			Pit walls: <600	2221 with 44-62

bgs: below ground surface; cpm: counts per minute; ft: feet/foot

[1] Surface scan results were collected as additional data for TP-02

Table 5-7. Tidal Chart for the Staten Island Warehouse Site.

Date	High/Low	Tide Time	Height (ft)
07/11/11	High	5:11 AM	4.8
	Low	11:50 AM	0.2
	High	5:51 PM	6.0
07/12/11	Low	12:41 AM	0.1
	High	6:18 AM	4.9
	Low	12:46 PM	0.1
	High	6:51 PM	6.1
07/13/11	Low	1:36 AM	-0.1
	High	7:19 AM	5.0
	Low	1:40 PM	0.1
	High	7:45 PM	6.2
07/14/11	Low	2:28 AM	-0.2
	High	8:12 AM	5.2
	Low	2:33 PM	0.1
	High	8:33 PM	6.2
07/15/11	Low	3:18 AM	-0.3
	High	9:01 AM	5.3
	Low	3:24 PM	0.2
	High	9:18 PM	6.2
07/16/11	Low	4:03 AM	-0.3
	High	9:48 AM	5.3
	Low	4:10 PM	0.2
	High	10:02 PM	6.0
07/17/11	Low	4:44 AM	-0.2
	High	10:34 AM	5.2
	Low	4:53 PM	0.4
	High	10:45 PM	5.7

http://www.saltwatertides.com/cgi-local/newyork.cgi

Table 5-8. Results of metal characterization samples (Methods 6020A and 7471A) for the Staten Island Warehouse Site.

	Analyte	Arsenic			Barium			Cadmium			Chromium			Lead			Mercury			Selenium			Silver		
	CAS#	7440-38-2			7440-39-3			7440-43-9			7440-47-3			7439-92-1			7439-97-6			7782-49-2			7440-22-4		
	Units	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Location ID	Collected Date	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL	Result	Qual	MDL
SIW-SS-041PC-0.0-2.0	7/17/2011	5	J	0.23	48	=	0.065	0.058	=	0.018	19	=	0.51	202	J	0.11	0.036	J	0.013	1.8	=	0.18	0.043	U	0.016
SIW-SS-042PC-0.0-2.0	7/17/2011	2.9	J	0.21	39.3	=	0.059	0.16	=	0.017	21.6	=	0.46	30.4	J	0.1	0.048	J	0.012	0.95	=	0.16	0.076	U	0.014
SIW-SS-043PC-0.0-2.0	7/17/2011	29	J	0.22	963	=	0.062	4.4	=	0.017	76.4	=	0.49	2960	J	0.55	3.1	J	0.12	2.1	=	0.17	0.72	=	0.015
SIW-SS-044PC-0.0-2.0	7/17/2011	31.7	J	0.22	400	=	0.062	3.3	=	0.017	137	=	0.49	2590	J	0.54	0.28	J	0.012	0.83	=	0.17	0.58	=	0.015
SIW-SS-CDUP-001*	7/17/2011	27.1	J	0.22	601	=	0.062	2.8	=	0.017	119	=	0.49	2140	J	0.54	0.29	J	0.012	0.9	=	0.17	0.53	=	0.015

CAS: Chemical Abstract Service; ID: identification, MDL: Method Detection Limit, mg/kg: milligrams per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; *The DUP is a field duplicate of the preceding sample

Table 5-9. Results of SVOC characterization samples (Method 8270C) for the Staten Island Warehouse Site.

	Analyte	2-Methylnaphthalene		Acenaphthene		Acenaphthylene		Anthracene		Benzo(a)anthracene		Benzo(a)pyrene	
	CAS#	91-57-6		83-32-9		208-96-8		120-12-7		56-55-3		50-32-8	
	Units	µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Location ID	Collected Date	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	380 U	380	380 U	380	150 J	380	160 J	380	260 J	380	400 =	380
SIW-SS-042PC-0.0-2.0	7/17/2011	110 J	340	130 J	340	350 =	340	830 =	340	1800 =	340	1200 =	340
SIW-SS-043PC-0.0-2.0	7/17/2011	51 J	360	360 U	360	650 =	360	610 =	360	1000 =	360	1300 =	360
SIW-SS-044PC-0.0-2.0	7/17/2011	170 J	360	360 U	360	1800 =	360	7700 J	1800	3000 =	360	4300 =	360
SIW-SS-CDUP-001*	7/17/2011	130 J	360	360 U	360	1300 =	360	36000 J	3600	1900 =	360	3000 =	360

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, SVOC: semi-volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 5-9. Results of SVOC characterization samples (Method 8270C) for the Staten Island Warehouse Site (continued).

	Analyte	Benzo(b)fluoranthene		Benzo(g,h,i)perylene		Benzo(k)fluoranthene		bis(2-Ethylhexyl) phthalate		Butyl benzyl phthalate		Carbazole	
	CAS#	205-99-2		191-24-2		207-08-9		117-81-7		85-68-7		86-74-8	
	Units	µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Location ID	Collected Date	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	540 J	380	230 J	380	180 J	380	380 U	380	380 U	380	380 U	380
SIW-SS-042PC-0.0-2.0	7/17/2011	1900 J	340	690 J	340	720 =	340	340 U	340	340 U	340	330 J	340
SIW-SS-043PC-0.0-2.0	7/17/2011	2000 J	360	1400 J	360	720 =	360	390 =	360	66 J	360	160 J	360
SIW-SS-044PC-0.0-2.0	7/17/2011	6100 J	360	7200 J	360	2100 =	360	130 J	360	360 U	360	3800 =	360
SIW-SS-CDUP-001*	7/17/2011	4000 J	360	4600 J	360	1400 =	360	94 J	360	360 U	360	13000 J	3600

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, SVOC: semi-volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 5-9. Results of SVOC characterization samples (Method 8270C) for the Staten Island Warehouse Site (continued).

	Analyte	Chrysene		Dibenz(a,h)anthracene		Dibenzofuran		Di-n-octyl phthalate		Fluoranthene		Fluorene	
	CAS#	218-01-9		53-70-3		132-64-9		117-84-0		206-44-0		86-73-7	
	Units	µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Location ID	Collected Date	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	310 J	380	380 U	380	380 U	380	380 U	380	300 J	380	380 U	380
SIW-SS-042PC-0.0-2.0	7/17/2011	1800 =	340	230 J	340	290 J	340	340 U	340	4600 J	340	490 =	340
SIW-SS-043PC-0.0-2.0	7/17/2011	1200 =	360	270 J	360	360 U	360	130 J	360	1600 J	360	69 J	360
SIW-SS-044PC-0.0-2.0	7/17/2011	4900 =	360	360 U	360	360 =	360	360 U	360	6200 J	360	480 =	360
SIW-SS-CDUP-001*	7/17/2011	4600 =	360	920 =	360	290 J	360	360 U	360	2800 J	360	540 =	360

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, SVOC: semi-volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 5-9. Results of SVOC characterization samples (Method 8270C) for the Staten Island Warehouse Site (continued).

	Analyte	Hexachlorocyclopentadiene		Indeno(1,2,3-cd)pyrene		Naphthalene		Phenanthrene		Pyrene	
	CAS#	77-47-4		193-39-5		91-20-3		85-01-8		129-00-0	
	Units	µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Location ID	Collected Date	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ	Result Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	1800 UJ	1800	250 J	380	380 U	380	97 J	380	200 J	380
SIW-SS-042PC-0.0-2.0	7/17/2011	1700 UJ	1700	790 =	340	99 J	340	3600 =	340	3200 =	340
SIW-SS-043PC-0.0-2.0	7/17/2011	1700 UJ	1700	1100 =	360	56 J	360	580 =	360	1300 =	360
SIW-SS-044PC-0.0-2.0	7/17/2011	1700 U	1700	5300 =	360	230 J	360	4100 =	360	4500 =	360
SIW-SS-CDUP-001*	7/17/2011	1700 UJ	1700	3200 =	360	210 J	360	2600 =	360	2700 =	360

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, SVOC: semi-volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 5-10. Results of VOC characterization samples (Method 8260B) for the Staten Island Warehouse Site.

	Analyte	1,3-Dichlorobenzene			1,4-Dichlorobenzene			2-Butanone			Acetone			Benzene			Ethylbenzene		
	CAS#	541-73-1			106-46-7			78-93-3			67-64-1			71-43-2			100-41-4		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	5.7	UJ	5.7	5.7	UJ	5.7	10	J	23	27	J	23	5.7	UJ	5.7	5.7	UJ	5.7
SIW-SS-042PC-0.0-2.0	7/17/2011	5.2	UJ	5.2	5.2	UJ	5.2	21	UJ	21	21	UJ	21	5.2	UJ	5.2	0.61	J	5.2
SIW-SS-043PC-0.0-2.0	7/17/2011	0.95	J	5.5	0.94	J	5.5	22	UJ	22	14	J	22	5.5	UJ	5.5	5.5	UJ	5.5
SIW-SS-044PC-0.0-2.0	7/17/2011	5.4	UJ	5.4	5.4	UJ	5.4	22	UJ	22	7.3	J	22	0.39	J	5.4	0.48	J	5.4
SIW-SS-CDUP-001*	7/17/2011	5.4	UJ	5.4	5.4	UJ	5.4	22	UJ	22	22	UJ	22	5.4	UJ	5.4	5.4	UJ	5.4

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, VOC: volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated;

*The DUP is a field duplicate of the preceding sample

Table 5-10. Results of VOC characterization samples (Method 8260B) for the Staten Island Warehouse Site (continued).

	Analyte	Methylene chloride			Styrene			Tetrachloroethene			Toluene			Xylenes (total)		
	CAS#	75-09-2			100-42-5			127-18-4			108-88-3			1330-20-7		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	5.7	UJ	5.7	5.7	UJ	5.7	5.7	UJ	5.7	5.7	UJ	5.7	11	UJ	11
SIW-SS-042PC-0.0-2.0	7/17/2011	1.5	J	5.2	5.2	UJ	5.2	5.2	UJ	5.2	0.86	J	5.2	2.3	J	10
SIW-SS-043PC-0.0-2.0	7/17/2011	1.1	J	5.5	5.5	UJ	5.5	0.58	J	5.5	5.5	UJ	5.5	1.2	J	11
SIW-SS-044PC-0.0-2.0	7/17/2011	0.92	J	5.4	0.58	J	5.4	1.5	J	5.4	1.3	J	5.4	0.99	J	11
SIW-SS-CDUP-001*	7/17/2011	5.4	UJ	5.4	5.4	UJ	5.4	0.94	J	5.4	5.4	UJ	5.4	1.1	J	11

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, VOC: volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated;

*The DUP is a field duplicate of the preceding sample

Table 5-11. Results of pesticide characterization samples (Method 8081A) for the Staten Island Warehouse Site.

	Analyte	4,4'-DDD			4,4'-DDE			4,4'-DDT			Aldrin			alpha-BHC			alpha-Chlordane			beta-BHC			Chlordane (technical)		
	CAS#	72-54-8			72-55-9			50-29-3			309-00-2			319-84-6			5103-71-9			319-85-7			57-74-9		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	16	UJ	16
SIW-SS-042PC-0.0-2.0	7/17/2011	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	8.8	UJ	8.8
SIW-SS-043PC-0.0-2.0	7/17/2011	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	5	J	1.9	0.91	UJ	0.91	110	J	19
SIW-SS-044PC-0.0-2.0	7/17/2011	0.9	UJ	0.9	0.9	UJ	0.9	6.3	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	9.2	UJ	9.2
SIW-SS-CDUP-001*	7/17/2011	0.9	UJ	0.9	0.9	UJ	0.9	4.7	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	9.2	UJ	9.2

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, VOC: volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated;

*The DUP is a field duplicate of the preceding sample

Table 5-11. Results of pesticide characterization samples (Method 8081A) for the Staten Island Warehouse Site (continued).

	Analyte	delta-BHC			Dieldrin			Endosulfan I			Endosulfan II			Endosulfan sulfate			Endrin			Endrin aldehyde			Endrin ketone		
	CAS#	319-86-8			60-57-1			959-98-8			33213-65-9			1031-07-8			72-20-8			7421-93-4			53494-70-5		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6
SIW-SS-042PC-0.0-2.0	7/17/2011	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86	0.86	UJ	0.86
SIW-SS-043PC-0.0-2.0	7/17/2011	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	3.6	J	1.9	0.91	UJ	0.91
SIW-SS-044PC-0.0-2.0	7/17/2011	0.9	UJ	0.9	0.9	UJ	0.9	0.74	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	9.8	J	1.8	0.9	UJ	0.9
SIW-SS-CDUP-001*	7/17/2011	0.9	UJ	0.9	2.5	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	0.9	UJ	0.9	14	J	1.8	0.9	UJ	0.9

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, VOC: volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated;

*The DUP is a field duplicate of the preceding sample

Table 5-11. Results of pesticide characterization samples (Method 8081A) for the Staten Island Warehouse Site (continued).

	Analyte	gamma-BHC (Lindane)			gamma-Chlordane			Heptachlor			Heptachlor epoxide			Methoxychlor			Toxaphene		
	CAS#	58-89-9			5103-74-2			76-44-8			1024-57-3			72-43-5			8001-35-2		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	1.6	UJ	1.6	62	UJ	62
SIW-SS-042PC-0.0-2.0	7/17/2011	0.86	UJ	0.86	0.86	UJ	0.86	1.8	UJ	1.8	0.86	UJ	0.86	0.86	UJ	0.86	35	UJ	35
SIW-SS-043PC-0.0-2.0	7/17/2011	0.91	UJ	0.91	6.2	J	1.9	0.91	UJ	0.91	0.91	UJ	0.91	0.91	UJ	0.91	37	UJ	37
SIW-SS-044PC-0.0-2.0	7/17/2011	0.9	UJ	0.9	0.9	UJ	0.9	4.6	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	36	UJ	36
SIW-SS-CDUP-001*	7/17/2011	0.9	UJ	0.9	0.9	UJ	0.9	4	J	1.8	0.9	UJ	0.9	0.9	UJ	0.9	36	UJ	36

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, VOC: volatile organic compound, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated;

*The DUP is a field duplicate of the preceding sample

Table 5-12. Results of PCB characterization samples (Method 8082) for the Staten Island Warehouse Site.

	Analyte	Aroclor 1016			Aroclor 1221			Aroclor 1232			Aroclor 1242			Aroclor 1248			Aroclor 1254			Aroclor 1260		
	CAS#	12674-11-2			11104-28-2			11141-16-5			53469-21-9			12672-29-6			11097-69-1			11096-82-5		
	Units	µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	15	U	15	15	U	15	15	U	15	15	U	15	15	U	15	15	U	15	15	UJ	15
SIW-SS-042PC-0.0-2.0	7/17/2011	8.3	U	8.3	8.3	U	8.3	8.3	U	8.3	8.3	U	8.3	8.3	U	8.3	8.3	U	8.3	8.3	UJ	8.3
SIW-SS-043PC-0.0-2.0	7/17/2011	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	450	J	36
SIW-SS-044PC-0.0-2.0	7/17/2011	11	U	11	11	U	11	11	U	11	11	U	11	11	U	11	11	U	11	69	J	47
SIW-SS-CDUP-001*	7/17/2011	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	8.7	U	8.7	37	J	36

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, PCB: polychlorinated biphenyl, µg/kg: micrograms per kilogram

=: Detection confirmed by validator; J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 5-13. Results of herbicide characterization samples (Method 8051A) for the Staten Island Warehouse Site.

	Analyte	2,4,5-T			2,4,5-TP (Silvex)			2,4-D			2,4-DB		
	CAS#	93-76-5			93-72-1			94-75-7			94-82-6		
	Units	µg/kg			µg/kg			µg/kg			µg/kg		
Location ID	Collected Date	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ	Result	Qual	LOQ
SIW-SS-041PC-0.0-2.0	7/17/2011	7.6	UJ	7.6	7.6	UJ	7.6	76	UJ	76	76	UJ	76
SIW-SS-042PC-0.0-2.0	7/17/2011	4.1	U	4.1	4.1	UJ	4.1	41	UJ	41	41	UJ	41
SIW-SS-043PC-0.0-2.0	7/17/2011	6.8	U	6.8	6.8	UJ	6.8	68	UJ	68	68	UJ	68
SIW-SS-044PC-0.0-2.0	7/17/2011	7.2	U	7.2	7.2	UJ	7.2	72	UJ	72	72	UJ	72
SIW-SS-CDUP-001*	7/17/2011	5.3	U	5.3	5.3	UJ	5.3	53	UJ	53	53	UJ	53

CAS: Chemical Abstract Service; ID: identification, LOQ: Limit of Quantification, µg/kg: micrograms per kilogram

J: Detection confirmed by validator, but estimated value; U: not detected at the assocated level; UJ: not detected and associated value is estimated; *The DUP is a field duplicate of the preceding sample

Table 6-1. Screening levels and background activities for radionuclides of potential concern in soils for the Staten Island Warehouse site.

Radionuclide	Outdoor Worker PRG [1] (pCi/g)	Residential PRG [1] (pCi/g)	U.S. Soil Average Concentration (Ranges) [2] (pCi/g)	Mean Values (Ranges) for Background Soils at Staten Island Site [3] (pCi/g)	Screening Level [4] (pCi/g)
K-40	0.295	0.116	10 (2.7 - 18.9)	10.92 (4.3 - 19.6)	None
Th-232	18.9	3.07	0.95 (0.11 - 3.51)	1 (0.28 - 1.79)	3.07
Ra-226	0.0248	0.0121	1.08 (0.22 - 4.32)	1 (0.23 - 2.8)	1.96
U-234	32.3	4.02	NA	0.947 (0.233 - 3.93)	4.02
U-235	34.3	3.95	NA	0.42 (0.42 - 0.42)	3.95
U-238	1.65	0.696	0.95 (0.11 - 3.78)	0.977 (0.233 - 3.59)	1.96

[1] From U.S. Environmental Protection Agency (USEPA) Preliminary Remediation Goal (PRG) tables found at: http://epa-prgs.ornl.gov/radionuclides/download.html, PRGs that include the influence of daughter products are used in the table.

[2] Typical U.S. soil averages and ranges are from Multi-Agency (2009)

[3] Mean background values were determined from sampling locations from this investigation within the region with background levels of gamma radiation obtained in the walkover survey plus the site background data from USEPA(2008). Mean values were calculated from the datasets using ProUCL 4.1.00.

[4] Screening levels were determined by using the higher of either the Residential PRG or the mean plus two standard deviation Background levels

NA: Not available, pCi/L: picocuries per liter

Table 6-2. Results of radiation soil samples (alpha and gamma spectroscopy) taken outside of the Radiologically Contaminated Area for the Staten Island Warehouse Site.

	Analyte	Potassium 40				Radium (226)				Thorium 232				Uranium 234				Uranium 235				Uranium 238			
	CAS#	13966-00-2				13982-63-3				7440-29-1				13966-29-5				15117-96-1				7440-61-1			
	Units	pCi/g				pCi/g				pCi/g				pCi/g				pCi/g				pCi/g			
Sample ID	**Sample Date**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**
Surface Soil																									
SIW-SS-003P-0.0-2.0	7/15/11 18:nn	10.2		1.5	0.7	0.38		0.1	0.1	0.69		0.17	0.15	0.287		0.072	0.018	0.11 U		0.2	0.31	0.283		0.073	0.032
SIW-SS-004P-0.0-2.0	7/15/11 16:nn	9.5		2	1	0.72		0.19	0.14	0.56		0.2	0.35	0.65		0.11	0.03	0.09 U		0.13	0.51	0.475		0.094	0.024
SIW-SS-006P-0.0-2.0	7/15/11 16:nn	6.9		1.2	0.8	0.23		0.11	0.12	0.45		0.14	0.13	0.233		0.062	0.017	0.17 U		0.17	0.25	0.233		0.063	0.024
SIW-SS-007P-0.0-2.0	7/15/11 18:nn	9.2		1.4	0.7	0.38		0.12	0.12	0.49		0.14	0.08	0.361		0.085	0.031	0.11 U		0.14	0.41	0.314		0.078	0.029
SIW-SS-011P-0.0-2.0	7/16/11 8:nn	10.4		1.7	1.1	1.27		0.25	0.19	0.64		0.22	0.3	1.13		0.16	0.03	0.18 U		0.33	0.59	0.96		0.15	0.01
SIW-SS-019P-0.0-2.0	7/15/11 18:nn	4.3		1.3	1.1	0.47		0.13	0.09	0.19 U		0.19	0.33	0.277		0.069	0.017	-0.02 U		0.47	0.29	0.291		0.071	0.017
SIW-SS-021P-0.0-2.0	7/15/11 16:nn	12.1		2	1.2	1.49		0.3	0.24	2.01		0.37	0.22	1.73		0.24	0.04	0.38 U		0.35	0.63	1.7		0.23	0.04
SIW-SS-DUP-001	7/15/11 0:nn	11		1.9	0.7	1.82		0.29	0.17	1.46		0.32	0.13	1.85		0.26	0.03	0.14 U		0.28	0.52	1.9		0.26	0.04
SIW-SS-022P-0.0-2.0	7/16/11 8:nn	10.1		1.5	0.7	0.49		0.12	0.11	0.4		0.15	0.31	0.328		0.075	0.021	0.05 U		0.19	0.34	0.331		0.075	0.021
SIW-SS-025P-0.0-2.0	7/16/11 16:nn	7		1.3	1	0.91		0.19	0.19	0.76		0.21	0.22	2.85		0.33	0.02	0.42		0.34	0.41	2.72		0.32	0.01
SIW-SS-027P-0.0-2.0	7/15/11 16:nn	18.4		2.2	0.5	1.03		0.2	0.15	1.79		0.29	0.16	0.84		0.14	0.03	0.24 U		0.31	0.58	0.85		0.14	0.04
SIW-SS-028P-0.0-2.0	7/15/11 16:nn	9.4		1.6	1	1.52		0.24	0.16	1.37		0.24	0.17	1.78		0.22	0.02	0.09 U		0.22	0.58	1.64		0.21	0.02
SIW-SS-029P-0.0-2.0	7/16/11 16:nn	7.5		1.3	0.8	1.37		0.22	0.16	0.87		0.22	0.21	2.19		0.27	0.03	0.19 U		0.28	0.48	2.14		0.26	0.02
SIW-SS-042P-0.0-2.0	7/17/11 10:nn	6.1		1.1	0.4	0.33		0.12	0.13	0.28		0.14	0.17	0.254		0.07	0.025	0.04 U		0.12	0.3	0.278		0.073	0.012
Subsurface Soil																									
SIW-SB-003P-0.0-5.0	7/12/2011	14.9		2.1	1	1.07		0.22	0.17	1.3		0.28	0.18	0.65		0.12	0.03	0.43 U		0.36	0.44	0.66		0.12	0.04
SIW-SB-003P-5.0-8.0	7/12/2011	9.2		2.2	1.6	0.97		0.21	0.11	1.07		0.25	0.26	0.64		0.12	0.02	0.11 U		0.28	0.48	0.456		0.094	0.024
SIW-SB-004P-0.0-5.0	7/12/2011	10.4		1.6	0.5	1.22		0.21	0.16	0.65		0.22	0.25	0.71		0.12	0.03	0.16 U		0.23	0.59	0.64		0.12	0.02
SIW-SB-DUP-001	7/12/2011	7.7		1.7	0.9	1.06		0.25	0.18	0.54		0.29	0.4	0.78		0.13	0.01	0.15 U		0.3	0.51	0.79		0.13	0.01
SIW-SB-004P-5.0-10.0	7/12/2011	11.2		1.7	0.9	0.93		0.18	0.14	1.24		0.24	0.24	0.55		0.1	0.01	-0.08 U		1.3	0.5	0.64		0.11	0.02
SIW-SB-006P-0.0-5.0	7/13/2011	10.8		1.7	0.5	0.72		0.16	0.13	0.54		0.19	0.27	0.67		0.12	0.02	0.06 U		0.29	0.5	0.65		0.12	0.01
SIW-SB-006P-5.0-8.0	7/13/2011	11.1		1.6	0.8	0.7		0.16	0.14	0.74		0.2	0.09	0.48		0.094	0.022	0.11 U		0.27	0.47	0.431		0.088	0.02
SIW-SB-007P-0.0-5.0	7/13/2011	10.3		1.7	0.9	0.96		0.17	0.11	0.65		0.23	0.35	0.82		0.13	0.02	0.17 U		0.33	0.52	0.87		0.14	0.02
SIW-SB-007P-5.0-8.0	7/13/2011	11		1.8	1.1	2.8		0.36	0.2	1.17		0.33	0.29	3.93		0.42	0.01	0.2 U		0.32	0.71	3.59		0.39	0.01
SIW-SB-011P-0.0-5.0	7/13/2011	15.8		2.9	1.2	1.79		0.34	0.19	1.72		0.4	0.47	0.9		0.14	0.01	0.21 U		0.47	0.73	1		0.15	0.02
SIW-SB-011P-5.0-8.0	7/13/2011	17.8		2.6	1.3	1.29		0.27	0.22	1.73		0.32	0.3	0.75		0.13	0.02	0.27 U		0.47	0.69	0.65		0.12	0.01
SIW-SB-019P-0.0-5.0	7/13/2011	6.7		1.6	1.3	0.46		0.15	0.14	0.13 U		0.14	0.34	0.447		0.09	0.028	0.12 U		0.11	0.33	0.473		0.094	0.032
SIW-SB-019P-5.0-8.0	7/13/2011	8		1.4	0.6	0.26		0.12	0.15	0.49		0.16	0.1	0.246		0.061	0.022	0.11 U		0.24	0.34	0.273		0.064	0.009
SIW-SB-021P-0.0-5.0	7/15/2011	14.9		2.2	1.1	1.5		0.28	0.2	1.47		0.27	0.19	1.15		0.17	0.02	0.26 U		0.36	0.61	1.15		0.17	0.01
SIW-SB-021P-5.0-8.0	7/15/2011	9.8		1.8	1.3	0.71		0.18	0.16	0.61		0.25	0.41	0.92		0.14	0.02	0.21 U		0.2	0.49	0.96		0.14	0.02
SIW-SB-022P-0.0-5.0	7/14/2011	16.4		2.4	0.7	1.15		0.25	0.21	1.63		0.34	0.14	0.78		0.16	0.03	0.26 U		0.45	0.72	0.92		0.18	0.02
SIW-SB-022P-5.0-8.0	7/14/2011	19.6		2.5	1.1	1.25		0.26	0.2	1.5		0.35	0.29	0.67		0.14	0.03	0.28 U		0.38	0.72	0.73		0.14	0.03
SIW-SB-025P-0.0-5.0	7/15/2011	10.6		2	1.5	1.09		0.23	0.18	1.51		0.32	0.14	1.08		0.16	0.01	0.18 U		0.18	0.63	1.03		0.15	0.01
Previous Data (USEPA 2008, USEPA 2009)																									
ST 2	7/10/1980	--				1.2				--				--				N/A				1.1			
ST 3	7/10/1980	--				0.62				--				--				N/A				0.62			
NR-2-92-003-072201	7/14/1992	--				0.53				--				--				U				1.7 U			
NR-2-92-003-072202	7/14/1992	--				0.9				--				--				U				1.9 U			
NR-2-92-003-072203	7/14/1992	--				0.87				--				--				U				1.6 U			
NR-2-92-003-072204	7/14/1992	--				1.06				--				--				N/A				2.8 U			
NR-2-92-003-072205	7/14/1992	--				1.95				--				--				N/A				3			
885062	2/1/2008	--				1.333				--				--				0.12 U				1.03 U			
Minimum		4.3				0.23				0.28				0.233				0.42				0.233			
Mean		10.92				1				1				0.947				0.42				0.977			
Maximum		19.6				2.8				1.79				3.93				0.42				3.59			
Distribution		Lognormal				Lognormal				Lognormal				Lognormal				N/A				Lognormal			
95% UPL		18.81				2.294				2.993				2.524				N/A				2.462			
Current Investigation Background		18.81				2.294				1.79				2.524				ND				2.462			
Previous Investigation Background		NA				1.96				2.25				NA				ND (<0.1)				1.96			

2σ: total uncertainty; CAS: Chemical Abstract Service; ID: identification, MDC: Minimum Detectable Concentration; pCi/g: picocuries per gram; Qual: Data Qualifer; UPL: Upper Prediction Limit; USEPA: U.S. Environmental Protection Agency

J: Estimated value; R: rejected data point; U: not detected at the assocated level; UJ: not detected and associated value is estimated

Table 6-3. Screening levels for radionuclides of potential concern in groundwater for the Staten Island Warehouse site.

Radionuclide	Tap Water PRG [1] (pCi/L)	MCL [1] (pCi/L)	Screening Level [2] (pCi/L)
Gross Alpha	NA	15	15
Gross Beta	NA	50	50
Ra-226	9.14E-04	5	5
Ra-228	0.0509	5	5
U-234	0.748	1.87E+05	1.87E+05
U-235	0.76	64.8	64.8
U-238	0.827	10.1	10.1

MCL: Maximum Contaminant Level, mrem/yr: millirems per year, NA: Not Applicable, PRG: Preliminary Remediation Goal
[1] From USEPA PRG tables found at http://epa-prgs.ornl.gov/radionuclides/download.html
Resident soil-to-groundwater PRG supporting table
[2] Screening levels are based on the MCL values.

Tble 7-1. Evaluation of Surface Soil Samples from the Staten Island Warehouse Site.

	Ra-226			U-234			U-235				U- 238			U-238/U-234 Ratio		U-238/Ra-226 Ratio	
Sample ID	**Result**	**2 σ**	**MDC**	**Result**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**2 σ**	**MDC**		**2σ**		**2σ**
SIW-SS-001P-0.0-2.0	5.72	0.61	0.3	1.78	0.22	0.02	0.45	U	0.59	1	1.94	0.23	0.009	1.09	0.19	0.34	0.05
SIW-SS-002P-0.0-2.0	1.74	0.33	0.25	1.23	0.17	0.02	0.35	U	0.43	0.69	1.37	0.19	0.02	1.11	0.22	0.79	0.18
SIW-SS-003P-0.0-2.0	0.38	0.1	0.1	0.287	0.072	0.018	0.11	U	0.2	0.31	0.283	0.073	0.032	0.99	0.35	0.74	0.27
SIW-SS-004P-0.0-2.0	0.72	0.19	0.14	0.65	0.11	0.03	0.09	U	0.13	0.51	0.475	0.094	0.024	0.73	0.19	0.66	0.22
SIW-SS-005P-0.0-2.0	2.81	0.38	0.22	3.16	0.35	0.02	0.3	U	0.41	0.68	2.88	0.33	0.02	0.91	0.15	1.02	0.18
SIW-SS-006P-0.0-2.0	0.23	0.11	0.12	0.233	0.062	0.017	0.17	U	0.17	0.25	0.233	0.063	0.024	1.00	0.38	1.01	0.56
SIW-SS-007P-0.0-2.0	0.38	0.12	0.12	0.361	0.085	0.031	0.11	U	0.14	0.41	0.314	0.078	0.029	0.87	0.30	0.83	0.33
SIW-SS-008P-0.0-2.0	2.96	0.37	0.21	1.77	0.24	0.04	0.48	U	0.46	0.6	2.04	0.26	0.01	1.15	0.21	0.69	0.12
SIW-SS-009P-0.0-2.0	36.3	2.6	0.6	33.9	3	0.05	2.9		1.2	1.7	33.4	3	0.06	0.99	0.12	0.92	0.11
SIW-SS-010P-0.0-2.0	2.88	0.36	0.21	2.68	0.3	0.03	0.2	U	0.49	0.75	2.8	0.31	0.03	1.04	0.16	0.97	0.16
SIW-SS-011P-0.0-2.0	1.27	0.25	0.19	1.13	0.16	0.03	0.18	U	0.33	0.59	0.96	0.15	0.01	0.85	0.18	0.76	0.19
SIW-SS-012P-0.0-2.0	3.29	0.48	0.26	1.91	0.24	0.03	0.4	U	0.42	0.69	1.88	0.23	0.02	0.98	0.17	0.57	0.11
SIW-SS-013P-0.0-2.0	19.1	1.4	0.4	9.11	0.87	0.02	1.09	U	0.92	1.7	9.48	0.9	0.02	1.04	0.14	0.50	0.06
SIW-SS-014P-0.0-2.0	5.28	0.52	0.24	1.75	0.22	0.03	-0.008	U	0.044	0.7	1.58	0.21	0.02	0.90	0.17	0.30	0.05
SIW-SS-015P-0.0-2.0	19.5	1.6	0.4	10.3	0.97	0.02	0.77	U	0.96	1.6	10.1	0.96	0.02	0.98	0.13	0.52	0.07
SIW-SS-016P-0.0-2.0	42	2.8	0.5	11.9	1.1	0.03	1.2	U	1.5	2.3	11.5	1.1	0.01	0.97	0.13	0.27	0.03
SIW-SS-DUP-002*	33.2	2.2	0.5	11.8	1.1	0.04	1.1	U	1.1	1.9	11.8	1.1	0.04	1.00	0.13	0.36	0.04
SIW-SS-017P-0.0-2.0	6.97	0.66	0.29	1.78	0.23	0.02	0.44	U	0.56	0.94	1.82	0.23	0.01	1.02	0.18	0.26	0.04
SIW-SS-018P-0.0-2.0	35.2	2.3	0.5	58.4	5.8	0.2	3		1.3	1.6	56.6	5.6	0.2	0.97	0.14	1.61	0.19
SIW-SS-DUP-004*	36.5	2.5	0.6	38	3.4	0.05	2.7		1.3	1.7	31.2	7.2	8.1	0.82	0.20	0.85	0.21
SIW-SS-019P-0.0-2.0	0.47	0.13	0.09	0.277	0.069	0.017	-0.02	U	0.47	0.29	0.291	0.071	0.017	1.05	0.37	0.62	0.23
SIW-SS-020P-0.0-2.0	2.46	0.34	0.19	1.65	0.21	0.02	0.21	U	0.34	0.58	1.72	0.22	0.02	1.04	0.19	0.70	0.13
SIW-SS-021P-0.0-2.0	1.49	0.3	0.24	1.73	0.24	0.04	0.38	U	0.35	0.63	1.7	0.23	0.04	0.98	0.19	1.14	0.28
SIW-SS-DUP-001*	1.82	0.29	0.17	1.85	0.26	0.03	0.14	U	0.28	0.52	1.9	0.26	0.04	1.03	0.20	1.04	0.22
SIW-SS-022P-0.0-2.0	0.49	0.12	0.11	0.328	0.075	0.021	0.05	U	0.19	0.34	0.331	0.075	0.021	1.01	0.32	0.68	0.23
SIW-SS-023P-0.0-2.0	3.77	0.5	0.23	2.19	0.27	0.03	0.34	U	0.4	0.75	2.21	0.27	0.02	1.01	0.18	0.59	0.11
SIW-SS-024P-0.0-2.0	1.75	0.26	0.16	1.87	0.24	0.01	0.09	U	0.22	0.49	1.79	0.23	0.02	0.96	0.17	1.02	0.20
SIW-SS-DUP-003*	1.49	0.27	0.15	1.69	0.22	0.03	0.017	U	0.083	0.55	1.72	0.22	0.01	1.02	0.19	1.15	0.26
SIW-SS-025P-0.0-2.0	0.91	0.19	0.19	2.85	0.33	0.02	0.42		0.34	0.41	2.72	0.32	0.01	0.95	0.16	2.99	0.72
SIW-SS-026P-0.0-2.0	1.86	0.33	0.24	1.72	0.22	0.02	0.31	U	0.42	0.82	1.58	0.21	0.01	0.92	0.17	0.85	0.19
SIW-SS-027P-0.0-2.0	1.03	0.2	0.15	0.84	0.14	0.03	0.24	U	0.31	0.58	0.85	0.14	0.04	1.01	0.24	0.83	0.21
SIW-SS-028P-0.0-2.0	1.52	0.24	0.16	1.78	0.22	0.02	0.09	U	0.22	0.58	1.64	0.21	0.02	0.92	0.16	1.08	0.22
SIW-SS-029P-0.0-2.0	1.37	0.22	0.16	2.19	0.27	0.03	0.19	U	0.28	0.48	2.14	0.26	0.02	0.98	0.17	1.56	0.31
SIW-SS-030P-0.0-2.0	1.64	0.28	0.19	1.64	0.22	0.01	0.07	U	0.41	0.62	1.6	0.22	0.02	0.98	0.19	0.98	0.21
SIW-SS-031P-0.0-2.0	2.19	0.35	0.24	0.81	0.14	0.02	0.37	U	0.48	0.8	0.75	0.13	0.01	0.93	0.23	0.34	0.08
SIW-SS-032P-0.0-2.0	0.57	0.13	0.11	0.5	0.1	0.01	0.07	U	0.22	0.38	0.412	0.091	0.011	0.82	0.25	0.72	0.23
SIW-SS-033P-0.0-2.0	2.2	0.37	0.2	1.94	0.25	0.03	0.015	U	0.069	0.79	2.25	0.28	0.01	1.16	0.21	1.02	0.21
SIW-SS-034P-0.0-2.0	2.32	0.33	0.19	1.9	0.24	0.01	0.15	U	0.35	0.79	1.72	0.22	0.02	0.91	0.16	0.74	0.14
SIW-SS-035P-0.0-2.0	1.93	0.3	0.19	2.09	0.26	0.01	0.24	U	0.31	0.56	2.12	0.27	0.02	1.01	0.18	1.10	0.22
SIW-SS-036P-0.0-2.0	2.21	0.32	0.2	1.71	0.23	0.02	0.13	U	0.37	0.68	1.67	0.23	0.01	0.98	0.19	0.76	0.15
SIW-SS-037P-0.0-2.0	2.66	0.39	0.27	3.22	0.36	0.03	0.02	U	0.47	0.82	3.38	0.37	0.01	1.05	0.16	1.27	0.23
SIW-SS-038P-0.0-2.0	1.89	0.35	0.19	0.94	0.15	0.03	-0.04	U	4.1	0.6	1.04	0.16	0.02	1.11	0.25	0.55	0.13
SIW-SS-039P-0.0-2.0	2.59	0.35	0.21	1.45	0.19	0.02	0.2	U	0.42	0.71	1.37	0.19	0.02	0.94	0.18	0.53	0.10
SIW-SS-040P-0.0-2.0	1.65	0.32	0.26	1.91	0.24	0.03	0.31	U	0.39	0.62	1.98	0.25	0.02	1.04	0.18	1.20	0.28
SIW-SS-DUP-005*	1.49	0.26	0.19	1.66	0.22	0.03	0.24	U	0.35	0.66	1.44	0.2	0.04	0.87	0.17	0.97	0.22
SIW-SS-041P-0.0-2.0	1.39	0.29	0.18	0.77	0.17	0.04	0.23	U	0.43	0.6	0.9	0.19	0.04	1.17	0.36	0.65	0.19
SIW-SS-042P-0.0-2.0	0.33	0.12	0.13	0.254	0.07	0.025	0.04	U	0.12	0.3	0.278	0.073	0.012	1.09	0.42	0.84	0.38
SIW-SS-043P-0.0-2.0	6.18	0.6	0.25	7.19	0.71	0.02	0.93		0.6	0.78	7.17	0.71	0.01	1.00	0.14	1.16	0.16
SIW-SS-044P-0.0-2.0	1.77	0.27	0.17	1.26	0.18	0.03	0.3	U	0.23	0.45	1.28	0.18	0.02	1.02	0.20	0.72	0.15
SIW-SS-045P-0.0-2.0	15.8	1.3	0.3	8.13	0.78	0.02	1.13		0.79	1.1	7.78	0.75	0.02	0.96	0.13	0.49	0.06
	6.51			**5.01**							**4.81**			**0.99**	**0.20**	**0.85**	**0.19**

2σ: total propagated uncertainty; MDC: Minimum Detectable Concentration; pCi/g: picocuries per gram; *The DUP is a field duplicate of the preceding sample

Table 7-2. Evaluation of Subsurface Soil Samples from the Staten Island Warehouse Site.

	Ra-226			U-234			U-235				U- 238						
Sample ID	**Result**	**2 σ**	**MDC**	**Result**	**2 σ**	**MDC**	**Result**	**Qual**	**2 σ**	**MDC**	**Result**	**2 σ**	**MDC**	**U-238/U-234 Ratio**	**2σ**	**U-238/Ra-226 Ratio**	**2σ**
SIW-SB-001P-0.0-5.0	1.76	0.31	0.14	1.73	0.23	0.02	0.11	U	0.38	0.67	1.6	0.22	0.01	0.92	0.18	0.91	0.20
SIW-SB-001P-5.0-10.0	0.74	0.19	0.16	1.7	0.26	0.02	0.11	U	0.29	0.5	1.89	0.27	0.02	1.11	0.23	2.55	0.75
SIW-SB-002P-0.0-5.0	0.86	0.21	0.18	0.66	0.12	0.02	0.11	U	0.27	0.46	0.66	0.11	0.01	1.00	0.25	0.77	0.23
SIW-SB-003P-0.0-5.0	1.07	0.22	0.17	0.65	0.12	0.03	0.43	U	0.36	0.44	0.66	0.12	0.04	1.02	0.26	0.62	0.17
SIW-SB-003P-5.0-8.0	0.97	0.21	0.11	0.64	0.12	0.02	0.11	U	0.28	0.48	0.456	0.094	0.024	0.71	0.20	0.47	0.14
SIW-SB-004P-0.0-5.0	1.22	0.21	0.16	0.71	0.12	0.03	0.16	U	0.23	0.59	0.64	0.12	0.02	0.90	0.23	0.52	0.13
SIW-SB-DUP-001*	1.06	0.25	0.18	0.78	0.13	0.01	0.15	U	0.3	0.51	0.79	0.13	0.01	1.01	0.24	0.75	0.21
SIW-SB-004P-5.0-10.0	0.93	0.18	0.14	0.55	0.1	0.01	-0.08	U	1.3	0.5	0.64	0.11	0.02	1.16	0.29	0.69	0.18
SIW-SB-005P-0.0-5.0	1.8	0.27	0.16	2.73	0.32	0.02	0.12	U	0.35	0.66	2.67	0.32	0.01	0.98	0.16	1.48	0.28
SIW-SB-005P-5.0-8.0	1.58	0.3	0.14	1.42	0.27	0.03	0.15	U	0.41	0.69	1.42	0.27	0.03	1.00	0.27	0.90	0.24
SIW-SB-DUP-002*	1.7	0.29	0.21	1.38	0.19	0.02	-0.03	U	1.3	0.8	1.26	0.18	0.01	0.91	0.18	0.74	0.16
SIW-SB-006P-0.0-5.0	0.72	0.16	0.13	0.67	0.12	0.02	0.06	U	0.29	0.5	0.65	0.12	0.01	0.97	0.25	0.90	0.26
SIW-SB-006P-5.0-8.0	0.7	0.16	0.14	0.48	0.094	0.022	0.11	U	0.27	0.47	0.431	0.088	0.02	0.90	0.25	0.62	0.19
SIW-SB-007P-0.0-5.0	0.96	0.17	0.11	0.82	0.13	0.02	0.17	U	0.33	0.52	0.87	0.14	0.02	1.06	0.24	0.91	0.22
SIW-SB-007P-5.0-8.0	2.8	0.36	0.2	3.93	0.42	0.01	0.2	U	0.32	0.71	3.59	0.39	0.01	0.91	0.14	1.28	0.22
SIW-SB-008P-0.0-5.0	1.57	0.29	0.2	1.24	0.19	0.02	0.06	U	0.39	0.68	0.92	0.15	0.01	0.74	0.17	0.59	0.14
SIW-SB-008P-5.0-8.0	2.04	0.31	0.19	2.06	0.25	0.02	0.38	U	0.41	0.68	1.82	0.23	0.02	0.88	0.15	0.89	0.18
SIW-SB-009P-0.0-5.0	47.6	3.1	0.5	40.7	4.3	0.3	4.5		1.6	1.9	40.9	4.3	0.2	1.00	0.15	0.86	0.11
SIW-SB-009P-5.0-8.0	2.13	0.34	0.23	4.08	0.45	0.01	0.7		0.5	0.63	3.99	0.45	0.01	0.98	0.15	1.87	0.37
SIW-SB-010P-0.0-5.0	1.77	0.42	0.32	1.53	0.2	0.02	0.11	U	0.42	0.76	1.28	0.18	0.01	0.84	0.16	0.72	0.20
SIW-SB-DUP-005*	1.72	0.35	0.22	1.75	0.22	0.03	0.16	U	0.32	0.75	1.84	0.23	0.02	1.05	0.19	1.07	0.26
SIW-SB-010P-5.0-8.0	0.6	0.17	0.17	0.73	0.13	0.01	0.05	U	0.13	0.54	0.66	0.12	0.02	0.90	0.23	1.10	0.37
SIW-SB-011P-0.0-5.0	1.79	0.34	0.19	0.9	0.14	0.01	0.21	U	0.47	0.73	1	0.15	0.02	1.11	0.24	0.56	0.14
SIW-SB-011P-5.0-8.0	1.29	0.27	0.22	0.75	0.13	0.02	0.27	U	0.47	0.69	0.65	0.12	0.01	0.87	0.22	0.50	0.14
SIW-SB-012P-0.0-5.0	1.22	0.24	0.19	0.75	0.13	0.03	0.24	U	0.33	0.62	0.86	0.14	0.01	1.15	0.27	0.70	0.18
SIW-SB-012P-5.0-8.0	0.97	0.2	0.17	0.83	0.15	0.01	0.016	U	0.081	0.52	0.82	0.14	0.01	0.99	0.25	0.85	0.23
SIW-SB-013P-0.0-5.0	95.8	5.9	0.7	37.3	3.4	0.05	4.6		2.3	2.8	36.6	3.3	0.03	0.98	0.13	0.38	0.04
SIW-SB-013P-5.0-8.0	3.7	0.44	0.24	6.77	0.68	0.03	0.35	U	0.67	0.94	6.15	0.63	0.03	0.91	0.13	1.66	0.26
SIW-SB-014P-0.0-5.0	0.102	0.024	0.017	0.74	0.13	0.02	0.021	U	0.023	0.038	0.73	0.13	0.03	0.99	0.25	7.16	2.11
SIW-SB-014P-5.0-8.0	1.02	0.24	0.2	1.91	0.25	0.04	0.21	U	0.39	0.67	1.88	0.25	0.03	0.98	0.18	1.84	0.50
SIW-SB-015P-0.0-5.0	54.4	3.5	0.6	65.4	6.4	0.2	4.2		1.3	1.9	63	6.2	0.3	0.96	0.13	1.16	0.14
SIW-SB-016P-0.0-5.0	8.29	0.73	0.26	9.68	0.93	0.02	0.69	U	0.58	1	9.63	0.92	0.03	0.99	0.13	1.16	0.15
SIW-SB-016P-5.0-8.0	1.27	0.31	0.22	2.2	0.26	0.03	0.08	U	0.13	0.67	2.12	0.26	0.03	0.96	0.16	1.67	0.46
SIW-SB-017P-0.0-5.0	3.84	0.44	0.22	1.83	0.23	0.03	0.31	U	0.51	0.85	1.9	0.24	0.01	1.04	0.19	0.49	0.08
SIW-SB-018P-0.0-5.0	26.1	1.8	0.5	34.5	3.1	0.05	2.9		1.4	1.6	34.2	3.1	0.06	0.99	0.13	1.31	0.15
SIW-SB-DUP-003*	20.5	1.5	0.4	24.6	2.2	0.06	1.32		0.76	1.3	24	2.2	0.07	0.98	0.12	1.17	0.14
SIW-SB-019P-0.0-5.0	0.46	0.15	0.14	0.447	0.09	0.028	0.12	U	0.11	0.33	0.473	0.094	0.032	1.06	0.30	1.03	0.39
SIW-SB-019P-5.0-8.0	0.26	0.12	0.15	0.246	0.061	0.022	0.11	U	0.24	0.34	0.273	0.064	0.009	1.11	0.38	1.05	0.54
SIW-SB-020P-0.0-5.0	1.41	0.24	0.17	1.98	0.26	0.03	0.03	U	0.35	0.61	2.01	0.26	0.02	1.02	0.19	1.43	0.30
SIW-SB-020P-5.0-8.0	1.08	0.18	0.11	1.06	0.17	0.03	0.28	U	0.3	0.54	1	0.16	0.02	0.94	0.21	0.93	0.21
SIW-SB-021P-0.0-5.0	1.5	0.28	0.2	1.15	0.17	0.02	0.26	U	0.36	0.61	1.15	0.17	0.01	1.00	0.21	0.77	0.18
SIW-SB-021P-5.0-8.0	0.71	0.18	0.16	0.92	0.14	0.02	0.21	U	0.2	0.49	0.96	0.14	0.02	1.04	0.22	1.35	0.40
SIW-SB-022P-0.0-5.0	1.15	0.25	0.21	0.78	0.16	0.03	0.26	U	0.45	0.72	0.92	0.18	0.02	1.18	0.33	0.80	0.23
SIW-SB-022P-5.0-8.0	1.25	0.26	0.2	0.67	0.14	0.03	0.28	U	0.38	0.72	0.73	0.14	0.03	1.09	0.31	0.58	0.17
SIW-SB-023P-0.0-5.0	2.48	0.36	0.23	2.54	0.3	0.02	0.25	U	0.46	0.81	2.62	0.31	0.02	1.03	0.17	1.06	0.20
SIW-SB-023P-5.0-8.0	0.78	0.18	0.11	1.28	0.18	0.02	-0.04	U	9.3	0.4	1.19	0.17	0.02	0.93	0.19	1.53	0.41
SIW-SB-024P-0.0-5.0	1.63	0.28	0.2	1.61	0.21	0.01	0.18	U	0.35	0.73	1.69	0.21	0.01	1.05	0.19	1.04	0.22
SIW-SB-DUP-004*	1.63	0.28	0.2	1.85	0.24	0.02	0.29	U	0.45	0.71	1.89	0.24	0.02	1.02	0.19	1.16	0.25
SIW-SB-025P-0.0-5.0	1.09	0.23	0.18	1.08	0.16	0.01	0.18	U	0.18	0.63	1.03	0.15	0.01	0.95	0.20	0.94	0.24
SIW-SB-026P-0.0-5.0	1.87	0.37	0.29	1.9	0.24	0.02	0.1	U	0.29	0.95	1.77	0.23	0.02	0.93	0.17	0.95	0.22
	6.28			**5.53**							**5.42**			**0.98**	**0.21**	**1.13**	**0.28**

2σ: total propagated uncertainty; MDC: Minimum Detectable Concentration; pCi/g: picocuries per gram; *The DUP is a field duplicate of the preceding sample

APPENDICES

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APPENDIX A

FIELD LOGS, SAMPLING FORMS, DAILY QUALITY CONTROL REPORT, SUMMARY REPORTS, AND CHAIN OF CUSTODY FORMS
(electronic copy only – provided on the disc located at the front of this document)

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7-12-11

0130 MOVED RIG ON 1st location

LOCATION - 001

0132 RECEIVED 1st CORE 0-5 3'-4" Recovery

0136 RECEIVED 2ND CORE 5-10 1'-4" Recovery

~~3'-4" Recovery~~ BK 7-12-11

SIW-001P-0.0-5.0

SAMPLE # 001-0.0-5.0 TAKEN @ 9" - 13" (0.75 - 1.08') 1 min = 58

SAMPLE # 001-5.0-8.0 TAKEN @ 1 min = 50

SIW-001P-5.0

0150 GAMMA Downhole scan

Feet	CPM
1	2000
2	3000
3	2000
4	2000

0157 moved Rig to 002

02 1st ATTEMP Refusal 3.0'

0222 MOVED 2.0' NORTH

0224 2ND ATTEMPS Refusal @ 5.0' Rock stuck in MACRO

Sample # SIW-002P-0.0-5.0'

GAMMA Readings CPM 0-1 1400 2' 1700 3' 500 4' 500 5' 600

Continued on Page

Read and Understood By

Signed Date Signed Date

0240 MOVED Rig OFF OF HOLE
- NOT ATTEMPTING 3RD HOLE
- NO 5-8' SAMPLE Being collected

*0245 - MOVING Rig to 003
- HAD TO MOVE LOCATION, TOO close to Bank

0250 CORING ON 003 * NO GAMMA Readings
254 First CORE collected —HOLE Collapsed
259 SECOND CORE Collected
*DIESEL PRESENT @ 48.0"
- SIW-SB003P-0.0-0.5 collected @ 1508
SIW-SB003P-5.0-8.0 collected @ 1518

0305
MOVED Rig to 004
0312 STARTED CORING
0315 0-5 CORE collected
0322 5-8 CORE collected
* Rig SANK, GROUND on top of BRICK/CEMENT FILL 2.0'

GAMMA (CPM)

Feet					
1.0'	1000	4.0	1200	7.0	1600
2.0'	1200	5.0	1300	8.0	1500
3.0'	1100	6.0	1400		

BKgr - 573

Continued on Page

Read and Understood By

Signed Date Signed Date

SIW-SB004P-0.0-5.0 1530

SIW-SB004P-5.0-8.0 1530

SB-DUP-001

DRILLER STOPPING for the day @1535

* AT our Request DRILLER LEAVING Rig IN Contam-Zone overnight
* PARKED TRAILER IN Zone, put GEOPROBE FORKS ON TOP OF TRAILER TO SECURE

DRILLER LEFT @ 1550

Continued on Page

Read and Understood By

Signed Date Signed Date

07/13/11 PREVIOUS NOTES FOR DAY IN Yellow
DRILLER ON STE @ 0730 FIELD NOTES
1010 MOVED Rig to 005 LOCATION
-05 WAS OFFSET 14.0'E OF ORIGINAL POINT
(ORIGINAL PT OFF STEEP BANK)

1017 Rig starts BORING Bkgr 44
1019 GO-0.5 CORE collected RAD 58 cpm
1024 0.5 – 9.0' CORE collected

SIW-SB005P-0.0-0.5 1031 collection
SIW-SB005P-5.0-8.0 1036 collection
SIW-SB-Dup-002

PID

0.0-5.0	0.6'	0.0	1.5'	0.0	2.5'	0.0
	1.0	0.0	2.0'	0.0	3.0	0.0
5.0-9.0	0.6	0.0	1.5	0.0	2.5	0.0
	1.0	0.0	2.0	0.0	3.0	0.0

* TOOLS DECONTAM

GAMMA DOWNHOLE open air 778
1.0 1158 3.0 1719 PVC 707 (NOT IN SOIL)
2.0 2586 4.0 2100 ✓ 10:45
* G/W present @ 5.0', scanned 0.0 – 4.0'
TO KEEP PROBE out of WATER

ATTEMPTED TO ADD SAND
PUT TEMP WELL IN @ 9.0'.

Continued on Page

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1054 MOVED TO SI-SB011E (BIASED SAMPLE)
1058 DRILLING on 1ST core (0.0-5.0)
1101 CORE Collected.

	Bkgr 44	RAD CPM	Collection Time
SIW-SB011R 0.0-5.0		70	1106
SIW-SB011P-5.0-8.0		54	1109

* Tools DECONTAM.

PID	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
0.0-5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
									5.0
									0.0

	5.0	5.5	6.0	6.5	7.0	7.5	8.0
5.0-8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

GAMMA DOWNHOLE (OPEN HOLE) (NO PVC)

1.0	1231	3.5	2522
2.0	2123		
3.0	2716		

* HOLE COLLAPSED @ 3.5' down

1119 Moving Rig To SB-012 (BIASED SAMPLE)
1124 START DRILLING 0.0-5.0'

	Collection	PID Readings
SIW-SB012P-0.0-5.0	1140	0.0
SIW-SB012P-5.0-8.0	1140	0.0

Continued on Page

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Signed Date Signed Date

G/W @ ~ 5.0' - NO WELL

GAMMA	CPM	(AND PVC)		
1.0	2168	4.0	1560	
2.0	2431	4.5	1460	
3.0	1930			

* Tools Decontam

1140 MOVED Rig to SB007
Ready to DRILL

1214 STOPPED for Lunch

1315 Return to SITE
- Discussing path forward

SB007

1318 START DRILLING 0-5.0'

1321 CORE collected

1326 5-0-8.0' CORE Collected

ORGANICS Smell @ 3-4.5 & 5-8.0'

		PID				RAD (CPM)
SIW-SB007P-0.0-5.0	1.0 1.3	~~[illegible]~~	2.5 1.1	3.0 0.0	4.0 1.5	64
SIW-SB007P-5.0-8.0		8				73

Continued on Page

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Signed Date Signed Date

	Time Collected
0.0 - 5.0	1345
5 - 8.0	1345

NO GAMMA FOR SB07 HOLE CAVED IN

GAMMA SCAN (SB~~0~~006) ← SB-006

1.0	491	4.0	1744	~~7.0~~ 6.5	904
2.0	943	5.0	1112	~~8.5~~	
3.0	1136	6.0	1021		

1345 Rig moved to SB~~0~~006
1355 0.0 - 5.0 CORE collected
1359 5.0 - 8.0 collected

Bkgr = 44 cpm

	Collected @	Rad (cpm)
SIW-SB006P-0.0-5.0	14:10	65
SIW-SB006P-5.0-8.0	1410	77
SIW-SB006MS-5.0-8.0 / SIW-SB006MSD-5.0-8.0	1410	

PID IS NOT WORKING - Ceasing readings

Rig moved to SB~~0~~19 1440

SB019
- collected 0.0 - ~~5.0~~ @ 1445
- collected 5.0 - 10.0 @ 1452

- CORE has treat compressed wood. STRONG ORGANIC @ 3.0'
SIW-SB019P-0.0-~~5~~.0 (1520)
SIW-SB019P-5.0-10.0 (1520)

Continued on Page

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GAMMA SCAN (SB-019)
NOT collected, Below 1.5', HOLE Collapsed
1.5' 950 cpm
1.0' 800 cpm

SB-014
1525 MOVED Rig to SB-014, start coring @ 1528
- Collected 0.0-5.0 @ 1532
- collected 5.0-10.0 @

GAMMA (cpm) (SB-014)
1' 1530 2' 1600 3' 1164
4' 750
5' 1250 6' 850 7' (900) 8'

* USING SB-014 as A TRIAL FOR RAD PREP & SAMPLING. (LOCATION IS 10' EAST OF RAD HOT AREA)
- LAY PLASTIC DOWN
- Scanning CORE, equipment as comes out of hole.
- Scanning gamma as soon as hole is vacant

		RAD (cpm)
SJW-SB014P-0.0-5.0	collected @ 1555	55
SJW-SB014P-5.0-8.0	collected @ 1555	46

1605 STop drilling, DRILLER MOVING TO TRAILER TO Secure TRAILER. PERSONNEL SCANNED OUT.
1630 DRILLER LEAVES SITE

Continued on Page

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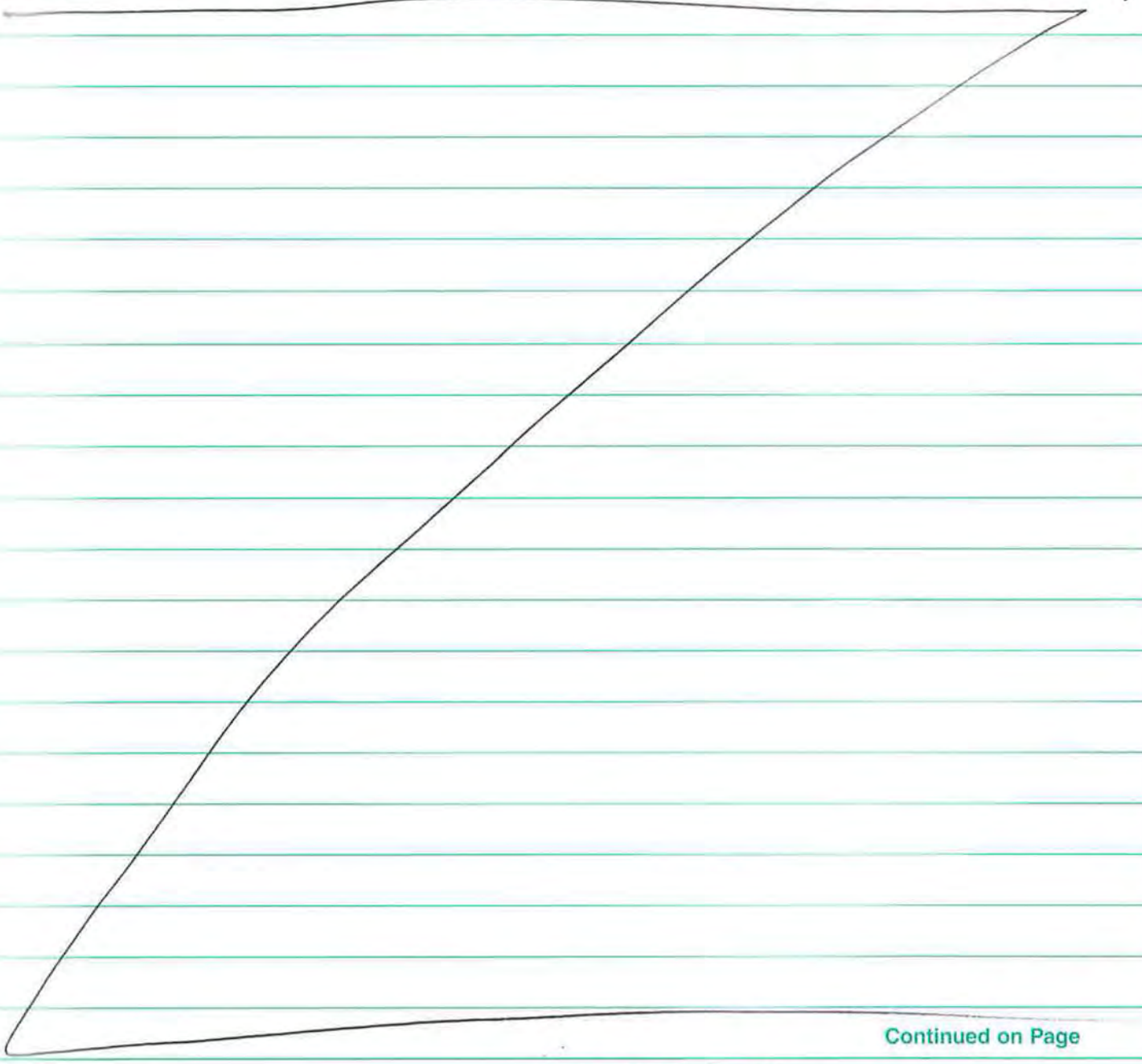
— 1635 BREAKing down Sampling table & Equipt.

SB005 GROUND WATER @ 7.0' (1700)

1715 LEFT SITE. LOCKED GATE (TODD/BRAD)



Continued on Page

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07-14-11 (0850 G/W LEVEL (SB05) (3'-3")
- MARKED NEW LOCATIONS PER CONFERENCE CALL
0930- SB20 & SB22
0935- D. LAWSON PERFORMING GAMMA SCAN ON EXPANDED AREA & NEW LOCATIONS

0947 Rig moves on SB20 (HOWIE & BRYAN)
0956 Complete Sampling area SETUP ON EDGE OF Contam Zone (plastic LAYDOWN)

BR 7-14-11

START DRILLING on 0-5' (1002) ~~BKgr~~ ~~Etc~~
CORE collected @ (1005) ~~Etc~~

Samples (Collection @ 1015)
SIW-SB020P-0.0-5.0
SIW-SB020P-5.0-8.0

1009 START DRILLING on (5-8')
1012 CORE collected on (5-8')

RAD SCAN (CPM)	
BKgr - 46	
0-5 - 76	
5-8 - 37	

GAMMA DOWNHOLE			
1'	1700	4'	1500
2'	1500	5'	1700
3'	1900		

1015 Rig moves to SB22
1017 START DRILLING (0-5') SB22
1020 collect core
1023 START DRILLING (5-8')
1025 collect CORE
1032

Continued on Page

Read and Understood By

Signed Date Signed Date

RAD	SCAN (cpm)
Bkgr	46
0-5	63
5-8	62

GAMMA		DOWN HOLE (cpm)	
1'	1600	5'	N/A
2'	3000	6'	N/A
3'	3500	7'	N/A
4'	1500	8'	N/A

N/A – HOLE COLLAPSED

SAMPLES

SJW-SB022P-0.5-5.0 (1035 collection)

SJW-SB022P-5.0-8.0 (1035 collection)

1031 DRILL RIG STANDING BY

1037 RIG MOVES TO SB013

SB013

1048 SETUP ON HOLE

1054 START DRILLING

1056 Collected 0-5' CORE

1059 START DRILLING

1106 COLLECTED 5-8' CORE

Continued on Page

Read and Understood By

Signed Date Signed Date

RAD READINGS ON CORE (CPM)

Bk 7-14-11

Bkgr 46

Surf (3") 407

3" 0-5 416

5-8

GAMMA DOWN HOLE (CPM)

1' 10000 4.0' 2700

2' 2600 4.5' 4200

3' 2000 5.0' N/A

N/A = HOLE COLLAPSED

High Reading 33000 (3")

* SAMPLED HOT AREA IN CORE
- HAD TO COLLECT SOIL FROM 0-8" TO OBTAIN SUFFICIENT MATERIAL.
- HOTTEST MATERIAL IN TOP 3-4".
- COLLECTION OF 5

RAD READINGS (CPM)

5-8 118

(1.3' ONLY OF material)

GAMMA DOWN HOLE (CPM)

~~5' 5600~~ 6' N/A 5' 5600

7' N/A

8' N/A

N/A = FILLE IN @ 5'

SAMPLES	TIME	COMMENT
SIW-SB013P-0.0-5.0	1110	HOT SAMPLE
SIW-SB013P-5.0-8.0	1110	

* DRILLING Equipt Being DECONNED - Hp RAD Readings IN Hp. RECORDS - EQUIPT INDICATES CLEAN

- some MATERIAL FROM 5.0-8.0 CORE Appears TO Be SLUFF FROM 0.0-5.0 CORE.
- HAD slight ELEVATED Readings ON DRY MATERIAL, BUT DOWN HOLE GAMMA DIDNT INDICATE RAD LEVELS

Continued on Page

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Signed Date Signed Date

1145 Rig moved to SB016

SB016
1148 START Coring 0-5'
1151 Core Collected
1155 START Coring 5-8'
1157 Core Collection

Rad Readings (cpm)
0-5' 77
- No High Reading in 3-4"
5-8' 56

Gamma Downhole (cpm)
1.0' 2700 4' 1100
2' 1700 5' 800
3' 2300

Highest Reading
* 3-4" 5000 cpm

5-8' core Had Limited material. Full of water

Decided to insert well.
- Material from 7-8 was Rock.
- Good Flow of water
- Inserted to 7.0' with drive

SIW-SB016P-0.0-5.0 (1200)
SIW-SB016P-5.0-8.0 (1200)

Equipt. Decon'ed. HP has scan Records

Continued on Page

SB017

1223 - Rig moves to SB017
1226 START DRILLING on 0-5'
1227 - HITS REFUSAL @ 3.0' (NO SAMPLE Collected)
1228 - MOVED Back 4.0' (South)
1229 - START DRILLING (0-5') * DESTROYED MACRO-CORE
- DIFFICULT DRILLING ≈ 3.0'
- PUSHES THRU TO Depth (5.0')
1230 - COLLECTS ~~Sample~~ (BK 7-14-11) CORE

* ~~RAD~~ Readings on CORE (CPM)

0-5'	48
BKgr	46

GAMMA (CPM)

1'	1900	4'	550
2'	1800	5'	N/A
3'	820		

N/A ~~Refusal~~ Refusal @ 4'
BK 7-14-11

1234 - MACRO Destroyed by Hard Material
- DECISION NOT TO CONTINUE TO 5-8' due to Refusal @ 4.0'
- COINCIDED W/ NEIGHBORING SB002 (REFUSAL Material)

SAMPLES — Collection TIME

SIW-SB017P-0.0-5.0 — 1240
NO 5-8' sample

Continued on Page

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Signed Date Signed Date

1236 DRILLERS DECONNING EQUIPT.
- SCAN INFO LISTED IN HP RECORDS
- SCANNED OUT CLEAN.

1238 STOPPED DRILLING
12.42 SCANNING OUT TO GO TO LUNCH.

1405 MOVE RIG TO SB08

SB08
1422 START DRILLING ON 0-5'
1426 COLLECT CORE
1429 START DRILLING ON 5-8'
1434 COLLECT CORE

RAD READINGS (CPM) ON CORE		GAMMA DOWNHOLE (CPM)	
0-5'	51 (1.0')	1' 2700	4' 1629
5-8'	64	2' 1700	5' 2500
BKGR 46		3' 1400	6' 2000
		7' 2100	8' N/A

SAMPLES	TIME	
SIW-SB08P-0.0-5.0	1450	* EQUIPT DECONNED. SCAN RECORDS HELD BY HP.
SIW-SB08P-5.0-8.0	1450	
SIW-SB08MS-0.0-5.0	1450	SIW-SB08MSD-0.0-5.0 1450

Continued on Page

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Signed Date Signed Date

1447 MOVED TO SB015

SB015
START BORING (0-5) 1450
Collect ~~Sample~~ CORE 1451 (0-5')
START BORING (5-8) (1455)
Collect CORE

RAD ON CORE (CPM)
.8-9" 1185*
10-15" 300
5-8' N/A

GAMMA DOWNHOLE CPM
1' 7000 4' 900
2' 1500 5' 1500
3' 1300 6 N/A.
* Highest is 20000 (8-9")
6-8' N/A Refusal

Equipt: MACRO'S, Shoe, Deconned
- Scan INFO IN Hp RECORDS

Samples
SIW-SB015P-0.0-5.0
NO 5-8' SAMPLE

TIME
1500

1518 MOVING TO SB018

Continued on Page

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Signed Date Signed Date

SB08

1520 START DRILLING

1521 CORE Collection (0-5')

- LOCATION ON AREA where HOTTEST GAMMA WALKOVER WAS SEEN

1523 START DRILLING
REFUSAL @ 5.5'

RAD SCAN ON CORE (CPM)
2-3" 3600
0-5' Bkgr
* NO 5-8' CORE (ROCK IN SHOE)
* REFUSAL @ [redacted] 5.5'
* HOT MATERIAL IN BOTTOM of 5-8' Depth,
* CONSIDERED SLUFF FROM UPPER CORE SINCE NOT High RAD content WAS SEEN BY DOWN HOLE GAMMA @ that Depth.
- Equipt. moved AFTER DECONNING. HP HAS SCAN RECORDS

GAMMA DOWNHOLE (CPM)

1' 19000	4' 1300
2' 5000	5' 2000
3' 2000	5.5' 4500
* HOTTEST @ (2-3") (57000)	

1550 MOVED TO SB09

SAMPLE SIW-SB018P-0.0-5.0
1525 SIW-SB-DUP-003

SB09

1555 START CORING (0-5')
1558 Collect CORE
START CORING (5-8')

Continued on Page

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Signed Date Signed Date

SB09 cont.

CORE RAD READING

0-5' 62

0-3" 385

GAMMA DOWN HOLE (CPM)

1' 6100 3' 13°° 5' 2600

2' 3300 4' 1100

*HOTTEST @ 3-5" 11000

6' 800 7.5' N/A

7.0 1300

N/A = FELL IN

- PUTTING WELL IN at ~~15~~ 9.0'
  - ABLE TO PUSH ADDITIONAL 1.5' W/ MEGA POINT

SAMPLES Sample time 1605

SIW-SB09P-0.0-5.0 A
SIW-SB09P-5.0-8.0
} SENT TO LAB

~~SIW-SB09P-0.0-5.0B~~

1620 STOP DRILLING / DECONNING Equipt. SCAN. RECORDS w/ HP

1622 SCANNING OUT Equipt
- SCAN RECORDS w/HP.

1640 HP SCANNING OUT PERSONNEL

1700 DRILLER LEAVING SITE

1705 HP SCANNING IN EXCAVATOR

Continued on Page

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Signed Date Signed Date

1715 BREAKING DOWN SUPPORT ZONE

1723 POST WORK BRIEFING

1730 BRUSH CLEARING ON EXTENDED AREA (South)

~~1830 EXIT SITE~~ BK 7-14-11

1730 TODD HAS HP SCAN IN EXCAVATOR TO GIVE CLEAN STATUS

1740 TODD LEVELING BANK TO ALLOW GEOPROBE to get to SAMPLE points ON Beach.

1814 PACK up remaining field equipt. & LOAD IN TRAILER.

- Lock TRAILER

1830 EXITING SITE

* GATE LOCKED (TODD/BRAD

TASKS / PERSONNEL INFO.

DRILLERS HOWIE HAMMEL / BRIAN SWEENY (ENVIRO PROBE)
SAMPLERS BRAD Gough / SAM MARTIN / Barry Kinsall (GEO)
RAD SUPPORT DAVE LAWSON (SAIC)
MANAGER TODD Buchanan (GEO)

Continued on Page

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Signed Date Signed Date

7-15-11

GROUNDWATER MEASUREMENTS

TIME	WELL	RISER HEIGHT (ft)	WELL DEPTH (ft)	WL	
0728	SB05	1.4	9.0'	5.2	5.2
0736	SB16		7.0	3.8	4.0
0748	SB09		9.0	4.2	4.0

* SAND ADDED TO PACK SCREEN. ADDED ALOT OF SAND. BELIEVE TIDAL FLUSH, WASHED Bigger hole AT WELLS BOTTOM ~~CAUSING WIDE~~. BK 7-15-11

* ~~BENTONITE ADDED FROM SAND AT Top of SCREEN TO SURF.~~ NO BENTANITE ADDED. (COULDN'T PUT SAND PACK AROUND SCREEN

* HOLES MEASURED PRIOR TO SAND TO DETERMINE post DRILL Well Bottoms.

* USACE Rep (ALAN ROOS) & EPA Rep (OLAF) on SITE 0830 TODD, ALAN, OLAC WALKING SITE

* HAVE Bootieson - OLAC TAKING rad Readings

0920 BK 7-15-11 TODD & Reps EXIT CONTAM. SITE

0935 CREW DRESSING OUT FOR ENTRY.
0940 ENTERING CONTAM AREA

Continued on Page

Read and Understood By

Signed Date Signed Date

SB023

0942 SETTING UP ON SB023
0944 START CORING (0-5')
0945 Collect CORE
0959 START CORING (5-8')
0953 Collect CORE

RAD IN CORE (CPM)		BK-44cpm	GAMMA (cpm	DOWNHOLE
8"	74		1 2500	2 3300
0-5	44		3 1500	4 754
5-8	48		5 500	

* HAD PROBE HANG UP at 5.0'. THINK HOLE COLLAPSED AROUND PROBE. AFTER SEVERAL SOFT PULLS got IT out.

* BORING IS SLANTED DUE TO FILL MATERIAL IMPEDING DOWNWARD PUSH.

Samples (Sample time 0950) * Bent MACRO-CORE ON HARD MATERIAL

SIW-SB023P-0.0-0.5
SIW-SB023P-5.0-8.0

- SUBSTANTIAL WATER IN Deep Sample.
* INSERTING WELL TO 7.5 (HOLE CAVED IN 0.5')
- ~~SAND ADDED TO 0' 2.5~~ BK 7-15-11
- ~~BENTONITE added to -2.5' - SURF~~
- ADDED 1 BAG OF SAND. DIDNT Accumulate AROUND SCREEN. TIDAL WASH EXPANDED HOLE.

Continued on Page

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1010 MOVED TO SB024

SB024
-START Coring (1014) ((1018) CORE Collection (0-5))
~~CORE~~ Collection BK 7-15-11
(- Refusal @ 2.0'
- Moving ~~5~~ 5.0 South)
- ~~If~~ BK 7-8-11
~~1018 Core Collection (0-5)~~ BK 7-15-11 1ST ATTEMPT AFTER Move. (CORE collect)
1025 START Coring
1028 Refusal @ 6.0'

RAD IN CORE (cpm)		GAMMA DOWNHOLE (cpm	
8"	81	1' 2800*	3' 1400 ~~5~~ 4 900
8"-5.0'	Bkgr	2' 1900	4.5' 1100 (1100)

1032
MOVING OFF HOLE. MATERIAL REFUSAL
same as PREVIOUS HOLE, SB02, SB027 (2 ATTEMPTS)

- NE EDGE OF CONTAM ZONE UNDERLAYED by FILL & CONCRETE, ROCK, & TREATED WOOD CHUNKS.

1035 SAMPLES Sampling time 1030
SIW-SB024P-0.0-~~5.0~~
SIW-SBDUP-004

Continued on Page

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Signed Date Signed Date

1036 Examing Bank & Beach For Access and Sampling points.

1046 Moving GeoProbe To Beach Driving Down Plastic Boards (covered) (ON BEACH) *

1056 Moving To SB010

SB010

START Coring (1100)
- Core collection (0-5') (1103)
- Easier Push

*ON SHORELINE

1105 START Coring
1107 Core Collection (Dark, Black, Sediment) (Separation Water/Product) (DIESEL PRESENT (SUBSTANTIAL)) *

BKgr 44

RAD on Core
0-5 LBKgr
5-8 LBKgr

Gamma Down Hole
N/A
* WATER 1' below HOLE opening.

* Put WELL IN @ 8.0

SAMPLES
SIW-SB010P-0.0-0.5
SIW-SB010P-5.0-8.0

Sample collect (1115)
SIW-SBDUPOS

Continued on Page

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Signed Date Signed Date

1116 Moving to SB025

1119 SETTING up on HOLE

SB025
1122 START CORING
CORE collection @ 5.0' (Rig Bouncing)
1125 START CORING (REFUSAL) (STopping on HoLE)
RAD CORE (CTM)
0-5 48

Comm DownHole
N/A - WATER 1' Below HOLE

SAMPLES
SIW-SB025P-0.0-5.0 Time (1135)

1136 MOVED TO SB021
- WATER NEXT TO Flag
- WAITING ON TIDE to Recede.

SB021
1352 STARTED CORING
1354 Collected sample from 0-5
1158 STARTED CORING (WENT TO 8.0')
1202 Collected sample from 5-8

Continued on Page

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Signed Date Signed Date

RAD LEVELS ON CORE

0-5' 52
5-8 50

NO DOWNHOLE GAMMA - WATER NEAR SURF. OF HOLE

SAMPLES	Time
SJW-SB021P-0.0-0.5	1210
SJW-SB021 P-5.0-8.0	1210

NOTE: EXCESS DIESEL PRESENT IN BOTH CORES.

12.17 MOVING TO SB026

1219 SETTING UP ON HOLE

1219 START Coring. (0-5)
1222 Sample collected
1225 START Coring. (5-8)
1227 Sample collected

RAD Counts ON CORE

0-5 - 52
5-8 48

NO GAMMA READINGS Water too High.

Continued on Page

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Signed Date Signed Date

SAMPLES (1230) collections

SIW-SB026P-0.0-0.5

SIW-SB026MS-0.0-0.5

SIW-SB026MSD-0.0-0.5

1247 LEFT CONTAM. ZONE

1310 LEFT FOR LUNCH.

1330 HP SCANNED OUT GEOPROBE

1412 Returned from Lunch

1423 Discussed PATH FORWARD on Surface Sampling.

1425 HP SCANNING out DRILLING (Surface) Equipt.

1437 START COLLECTING SAMPLING Equipt.

1510 DRILLER Packing Up Equipt.

1512 DRILLER LEFT (5) Bags of Bentonite -also (1) Bucket. TOTAL (6) Bags

1538 TODD, BARRY, BRAD, SAM LOCATING SURFACE SAMPLING Locations.

1600 STARTED SURFACE SAMPLING.

Continued on Page

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Signed Date Signed Date

7-15-11 Surface Samples

LABEL ID	DATE	TIME	BKGD	Sample CT
SIW-SS-004P-0.0-2.0	7/15/11	1600	37	49
SIW-SS-006P-0.0-2.0	7/15/11	1606	49	37 *
SIW-SS-027P-0.0-2.0	7/15/11	1625	56	90
SIW-SS-028P-00-2.0	7/15/11	1640	52	72
SIW-SS-021P-0.0-2.0	7/15/11	1650	37	44
SIW-SS-DUP-001	7/15/11	1650	37	43
SIW-SS-026P-0.0-2.0	7/15/11	1740	45	63
SIW-SS-010P-0.0-2.0	7/15/11	1745	90	69 *
SIW-SS-019P-0.0-2.0	7/15/11	1800	36	32 *
SIW-SS-007P-0.0-2.0	7/15/11	1802	36	46
SIW-SS-003P-0.0 2.0	7/15/11	1810	40	54

* Background higher than 1/min rate sample count

Continued on Page

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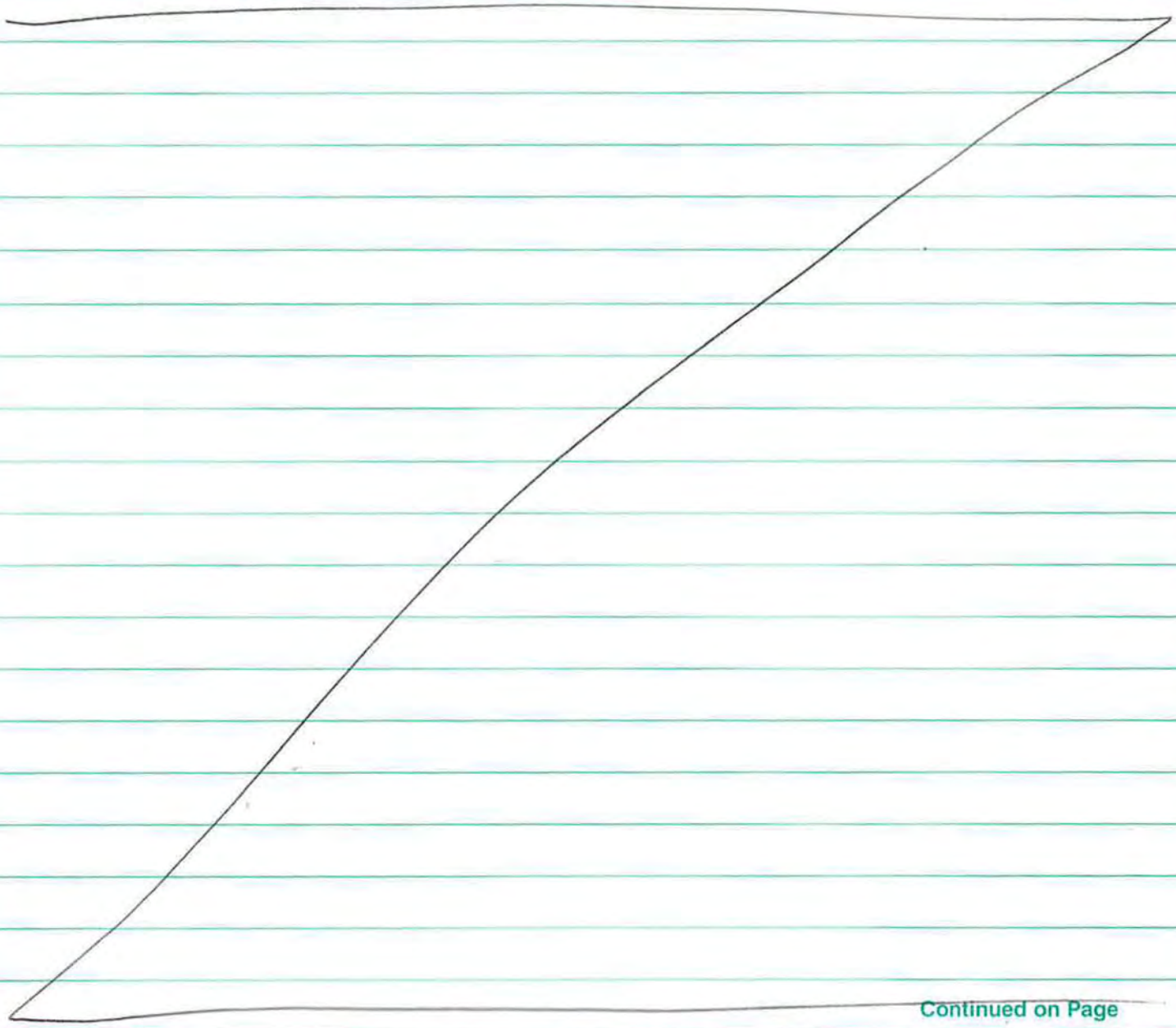
Signed Date Signed Date

7-16-11
0752 G/W MEASUREMENTS

WELL	RL	WL
SB05	1.4	7.5
SB09		
SB016		
SB023	2.8"	7.9



Continued on Page

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Signed Date Signed Date

7-16-11 Surface Samples

SAMPLE ID	DATE	TIME	[redacted]	SAMPLE CT
SIW-SS-022P-0.0-2.0	7-16-11	0815	32	55
SIW-SS-011P-0.0-2.0	7-16-11	0815	32	63
SIW-SS-012P-0.0-2.0	7-16-11	0825	40	~~55~~
SIW-SS-020P-0.0-2.0	7-16-11	0830	32	44
SIW-SS-001P-0.0-2.0	7-16-11	0838	40	65
SIW-SS-005P-0.0-2.0	7-16-11	0840	40	62
SIW-SS-014P-0.0-2.0	7-16-11	0850	35	46
SIW-SS-023P-0.0-2.0	7-16-11	0900	35	62
SIW-SS-002P-0.0-2.0	7-16-11	0900	35	48
SIW-SS-017P-0.0-2.0	7-16-11	0910	34	39
SIW-SS-013P-0.0-2.0	7-16-11	1030	34	87
SIW-SS-016P-0.0-2.0	7-16-11	1038	34	147
SIW-SS-DUP-002	7-16-11	1038	34	112
SIW-SS-015P-0.0-2.0	7-16-11	1045	34	91
SIW-SS-008P-0.0-2.0	7-16-11	1050	34	57
SIW-SS-024P-0.0-2.0	7-16-11	1100	42	54
SIW-SS-DUP-003	7-16-11	1100	42	57
SIW-SS-009P-0.0-2.0	7-16-11	1105	42	120
SIW-SS-018P-0.0-2.0	7-16-11	1112	42	121
SIW-SS-DUP-004	7-16-11	1112	42	116
SIW-SS-032P-0.0-2.0	7-16-11	1240		

Stopped sampling 1115

@1125 LUNCH

1205 Return To Work

Continued on Page

Read and Understood By

Signed Date Signed Date

1207 TODD MOVES EXCAVATOR TO PIT 4, (TP-04)
- BRAD preps samples for shipment

- Barry & Sam support excavating.
- HP will scan spoils as removed.

1217 Begins Digging: 1st 2:0 LIFT
1231 ENDS 2.0 LIFT

1238 RAD SCAN INDICATES COUNTS Below BKgr.

Desc:
MATERIAL composed of Fill. (Asphalt chunks, Lg rocks & Concrete) Soil is BROWN SILTY, CLAY.
1240 - SIW-SS-032D-0.0-2.0 collected from 1st 2' of TP-04.
1243 START Digging on 2ND LIFT (2:0)
ENDS 2ND LIFT (4:00)

1250 Pull few BRICKS out @ 32"
1256 Lot of concrete, various metal.
- HIT SOLID SLAB of same material

1259 HIT Construction MATERIAL (WOOD) 38"

Continued on Page

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Signed Date Signed Date

- WOOD LAYER OVERLAYED BY CONCRETE LAYER (36") (~~SEG~~ 13000 cpm ON WOOD DEBRIS) (METER 44#10)

- DOWNHOLE GAMMA INDICATES SOIL @ BOTTOM OF TRENCH IS BELOW BKGR.

1259 CEASE DRILLING ON HOLE, DUE TO REFUSAL ON Construction Debris @ 36-38".

1302 Begin putting material back in TP-04.
1331 PACKING EXCAVATION MATERIAL IN PIT with treads

1353 MOVING to TP-02

TP-02

1405 Begin EXCAVATING, TO 2.0'
1413 STOP @ 2.0'

DESCRIPTION:
- CONSTRUCTION Debris (BRICKS, WOOD, Some Asphalt CONCRETE)
- LOTS OF BRICKS
- RAD READINGS (Becomes Higher moving (N) towards RAD BOUNDARY)
  - 23000 cpm @ 23-24"
  - SURFACE 8000 - 9000 cpm
  - Background on Removed Brick

Continued on Page

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Signed Date Signed Date

SAMPLE COLLECTION 32 Bkgrd

SIW-SS02-33-0-0.2.0 (62 cpm) (TP-02)

- Collection Time (1422)

SIW-MS33-0-2 (65 cpm), SIW-MSD33-02 (53 cpm)

1428 START Digging

1438 STOPPED Digging

Bkgrd = Background.

(DARK SOIL, BRICKS, WOOD)

- ALL SPOILS FROM 2-4' were at Bkgrd counts
- NO HITS ON either Wall PROFILE

1445 STARTED DIGGING

1456 STOPPED DIGGING

4.6' Depth.

- DESCRIP.
  - DARK FILL, BRICKS, SAND Lighter MATERIAL From Bottom!
  - BRICK @ 2-4'. ALSO seems to Be a BRICK PILLAR EXTENDING DOWNWARD

RAD.

- BACKGROUND ON WALL FACES
- Bckrg on SPOILS

1535

MOVING TO TP-03

Continued on Page

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Signed Date Signed Date

1540
~~1506~~ SETING up on TP-03

1546 START Digging

TP-03

1548 Reached 0-2' depth

Descrip.
- GRAYISH FILL Soil, Few BRICKS & Concrete chunks
- Some whitish SAND / CINDERS

RAD. READINGS
- SPOILS - BKgnd
- WALL ~~FACE~~ BKgnd

SAMPLE		RAD
SIW-SS34P-0.0-2.0	1548	69 cpm

1554 - START Digging 2-4
1600 STOP Digging 2-4

Continued on Page

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Signed Date Signed Date

DESC.
- Reddish Brick color, CLAY. Rock/cement chunks, CINDERS

1617 DIGGING ON 4-6'
1624 STOPPING ON 4-6'

DESC.
- HIT Rock @ 6.0'
BK #16" Red. Hard Rock.
- LARGE chunks
- Appears to be NATIVE MATERIAL. Reached 6' on the Eastern END.
- MET Refusal @ 5'-6'

RAD
- FACE PROFILE Bkgrd
- SPOILS Bkgrd

1632 MOVING SOIL BACK IN HOLE
1643 HOLE (TP03) FILLED

1646
MOVING TO TP-01

1651 SETUP TO DIG (0-2')
START 1649
STOP 1658

Continued on Page

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Signed Date Signed Date

Surface Samples - (SAM / BRAD)

			Bkgd	Impact
SIW-SS-029P-0.0-2.0	7/16/11	1640	46	59
SIW-SS-025P-0.0-2.0	7/16/11	1645	46	35 *
SIW-SS-025MS-0.0-2.0	7/16/11	1645	46	45 *
SIW-SS-025MSD-0.0-2.0	7/16/11	1645	46	35 *

DESCR. P. MED BROWN FILL, NOT AS MUCH BRICK. CONCRETE.

TPOJ

Sample RAD

SIW-SS025P-0.0-0.2 (58 cpm) 1705

* SEE TODD'S CAMERA FOR PHOTO'S

RAD

PILE 1300 cpm (Sampled)

FACE Bkgrd

START 1713 ON 2-4 depth

STOP 1722

DESC:

- Red, BRICK, CLAY, some BRICK, LARGE Rocks
- HAD BROKEN OFF PIPE, EAST END OF PIT
- Another HORIZONTAL PIPE E to West
- WOOD OVER CONCRETE AT 3.0'

Continued on Page

1731 START ON 4-6'
1742 STOP

DESCRIPT.
- Reddish, CLAYEY, natural.
- EXTRA LARGE ROCKS
- ANOTHER PIPE ADJACENT TO the previous one
- HP FINDS ROCK W/High Readings (44000 cpm)(40 uR/HR)
- Checking extra with meters to determine counts
- SIDE FACE PROFILES

1810 BACKFILLING HOLE
1835 SCANNED out EQUIP, PERSONNEL, Samples
1842 EXITING RAD AREA

1845 BREAKING DOWN Sampling equip. & BREAK AREA

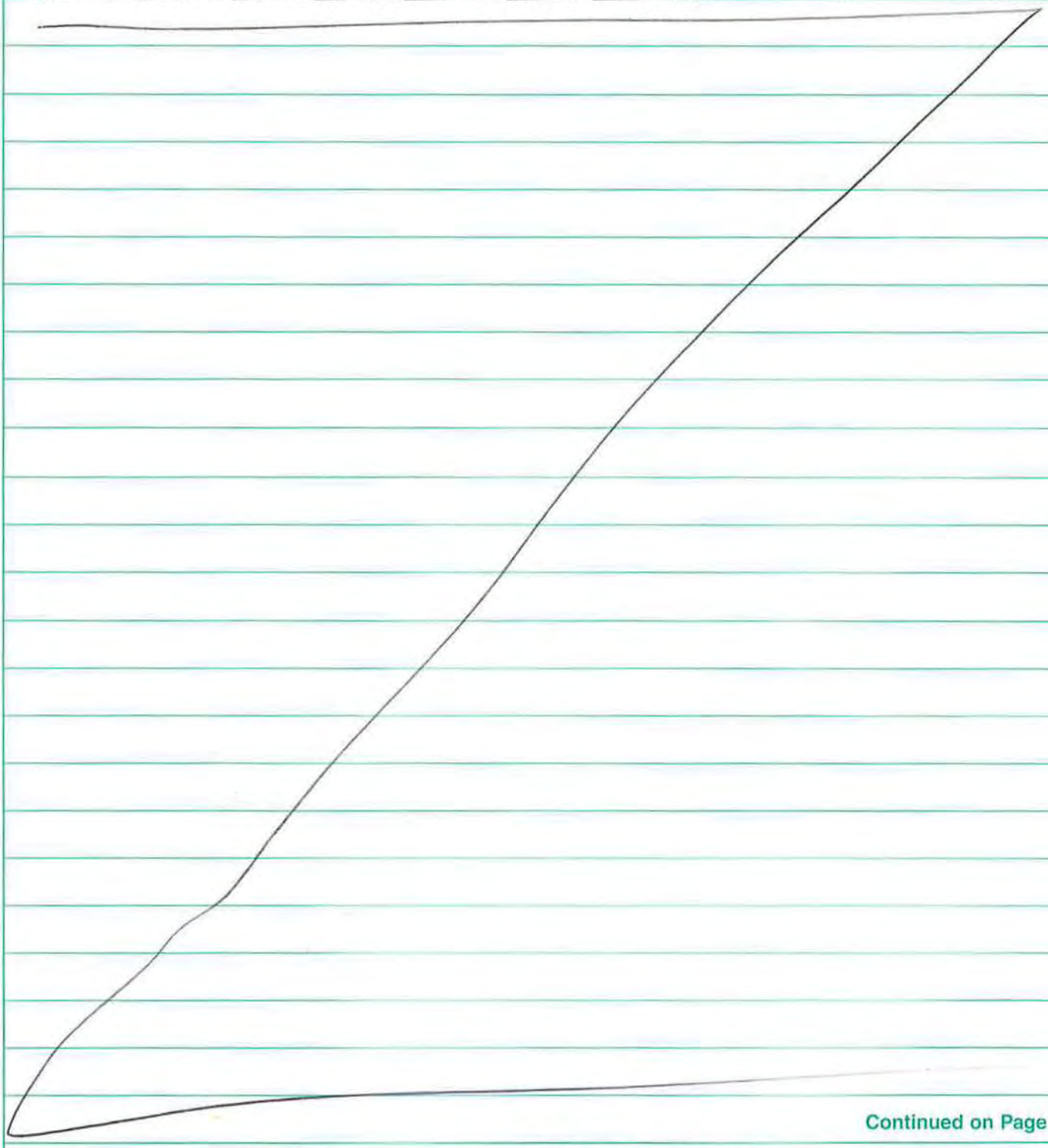
1900 LOCKING TRAILER
LEAVING SITE

Continued on Page

Read and Understood By

Signed Date Signed Date

SURFACE SAMPLES	(SAM & BRAD)		Baked	1 min ct
SIW-SS-031P-0.0-2.0	7/16/11	1725	39	56
SIW-SS-030P-0.0-2.0	7/16/11	1715	39	68



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7/17/11 - SUNNY, CLEAR, WINDS WSW, 74°
- SUPPOSE TO REACH 90°

07-16-11 SAM CALIBRATING HYDRO LAB

TODD, DAVE H, DAVE L. walking down SITE

0805 TODD MOVES EXCAVATOR TO BOUNDARY TO BE SCANNED OUT.

0823 BRAD MARKING FINAL SS SAMPLE LOCATIONS

0833 Barry & Sam collect GW Sampling equipt.

GW SAMPLING (TEMP WELLS) HYDROLAB.

WELL#	WL (TOR) (Ft)	RISER (Ft)	LEVEL (BGS)
SB05 (0850)	START 5.35 END 5.44	1'-4" (1.3')	~~4.31'~~ BS 4/21/11 4.05'

Sample Time 0900

TEMP (C) 22.89°
COND. 333 mS/cm
DO 3.17 mg/L
pH 6.31
SORP 541 mV
TURB. [redacted] NTU
SALINITY 20.84 PSS

AMOUNT 4 LITERS

UNFILTERED

	TIME (START)	END
SIW-GW05-01	~~START~~ 0900	0903
SIW-GW05-02	0903	0905
SIW-GW05-03	0905	0907
SIW-GW05-04	0907	0910

Sample Time 0916

FILTERED

	START	END
SIW-GW05-05	0917	0919
SIW-GW05-06	0919	0921
SIW-GW05-07	0922	0924
SIW-GW-05-08	0924	0925.

0910
HYDRO LAB

TEMP (C) 21.84
COND 339
DO 3.59
PH 6.25

SORP 503
TURB 50.0 ?
salinity 21.23

Continued on Page

Read and Understood By

Signed Date Signed Date

UNFILTERED (Sampling time 0900)	DUP	FILTERED (Sample Time 0916)
SIW-GW05UD-01		SIW-GW05FD-05
SIW-GW05UD-02		SIW-GW05FD-06
SIW-GW05UD-03		SIW-GW05FD-07
SIW-GW05UD-04		SIW-GW05FD-08

SB-023 - 1000

*GAUGE STRAIGHT TO HYDROLAB 0950

	RL	WL (TOR)	WL (BGS)	HYDROLAB	
SB023	~~2.8~~ 2'-8" (2.7')	6.96	~~4.10~~ 4.26'	TEMP (C)	22.46
8/21/11		END 6.84		COND	34mS
				DO	4.71
				pH	6.55
				ORP	43.9
				TURB	75.8
				SALINITY	21.79

SAMPLE TIME 0955

SAMPLES (UNFILTERED)	START	END
SIW-GW023UF-01	0955	0957
SIW-GW023UF-02	1000	1012
SIW-GW023UF-03	1012	1014
SIW-GW023UF-04	1015	1017

SAMPLES (FILTERED)	START	END
SIW-GW023F-05	1018	1020
SIW-GW023F-06	1020	1022
SIW-GW023F-07	1022	1024
SIW-GW023F-08	1024	1026
* Sample Time	1018	

HYDROLAB	
TEMP (C)	22.42
COND	35mS
DO	4.04
pH	6.66
ORP	46.6
TURB	52.3
SALINITY	21.99

Continued on Page

Read and Understood By

Signed Date Signed Date

SB026 – ON Edge of WATER

Well	RL		WL (TOC) (1041)	~~HEIGHT~~ WL (bgs)
SB026	20" = 1.67'	START	1.90 (1041)	0.233'
		END		

RB 4/21/11

HYDROLAB (UNFILTERED) 1042

TEMP (C)	24.52	SALINITY	22.41
COND	35.6	ORP	49.1
DO	6.06	TURB	54.5
pH	7.31		

SAMPLES	START	END	SAMPLE TIME	COMMENT
SIW-GW026UF-01	1046	1048	1046	UNFILTERED
SIW-GW026 UF-02	1048	1050	1046	" "
SIW-GW026-UF-03	1050	1052	1046	" "
SIW-GW026UF-04	1052	1054	1046	" "

SIW

HYDROLAB (FILTERED) 1054

TEMP (C)	24.18	SALINITY	20.66
COND	35.17	ORP	486
DO	5.73	TURBIDITY	50.8
pH	7.32		

Continued on Page

Read and Understood By

Signed Date Signed Date

Samples	Start	End	Sample Time	Comment
SIW-GW026F-05	1058	1100	1058	Filtered
SIW-GW026F-06	1100	1102	1058	Filtered
SIW-GW026F-07	1102	1104	1058	Filtered
SIW-GW026F-08	1104	1106	1058	Filtered

1109-1145 Todd / Brad 50:1 Sampling @ Sampling Location. Have to wait. Moving to SB010 (1155)

Well	RL	WL (TOR)	WL (bgs) Height	
SB-010	16" = 1.33'	1.5'	0.17'	8/21/11

1201

Hydrolab (Unfiltered)

Temp (c)	22.84	Salinity	21.66
Cond	34.46	ORP	48.2
DO	4.39	Turbidity	57.6
pH	6.18		

Samples	Start / End	Sample Time	Comment
SIW-GW010UF-01	1206 / 1208	1206	Unfiltered
SIW-GW010UF-02	1208 / 1210	1206	" "
SIW-GW010UF-03	1210 / 1212	1206	" "
SIW-GW010UF-04	1212 / 1214	1206	" "

Continued on Page

Read and Understood By

Signed Date Signed Date

SAMPLES	START/END	SAMPLE TIME	COMMENT
SIW-GWO10UFMS-01	1214/1216	1206	UNFILTERED
SIW-GWO10UFMS-02	1216/1218	1206	" "
SIW-GWO10UFMS-03	1218/1220	1206	" "
SIW-GWO10UFMS-04	1220/1222	1206	" "
SIW-GWO10UFMSD-01	1222/1224	1206	UNFILTERED
SIW-GWO10UFMSD-02	1224/1226	1206	" "
SIW-GWO10UFMSD-03	1226/1228	1206	" "
SIW-GWO10UFMSD-04	1228/1230	1206	" "

HYDROLAB (FILTERED) 1228

TEMP	24.62	SALINITY	21.67
COND	34.4	ORP	474
DO	3.93	TURB	55.3
PH	6.24		

SAMPLES	START/END	SAMPLE TIME	COMMENT
SIW-GWO10F-01	1234/1236	1206 1234	FILTERED
SIW-GWO10F-02	1236/1238	BK 1234 ~~1206~~ 1234	" "
SIW-GWO10F-03	1238/1240	~~1206~~ 1234	" "
SIW-GWO10F-04	1240/1242	~~1206~~ 1234	" "

Continued on Page

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Signed Date Signed Date

Samples	Start/End	Sampling Time	Comment
SIW-6WO10MS-01	1242 / 1244	~~1206~~ 1234	FILTERED
SIW-6WO10MS-02	1244 / 1246	BK 9-15-11 ~~1206~~ 1234	" "
SIW-6WO10MS-03	1246 / 1248	~~1206~~ 1234	" "
SIW-6WO10MS-04	1248 / 1250	~~1206~~ 1234	" "

Samples	Start/End	Sample Time	Comment
SIW-6WO10MSD-01	1250 / 1252	~~1206~~ 1234	FILTERED
SIW-6WO10MSD-02	1252 / 1254	BK 9-15-11 ~~1206~~ 1234	" "
SIW-6WO10MSD-03	1254 / 1256	~~1206~~ 1234	" "
SIW-6WO10MSD-04	1256 / 1258	~~1206~~ 1234	" "

1302 WL END OF SAMPLING 3.54'

Moving to Wells IN CONTAM ZONE.

1332 SETTING UP ON SB016

SB016	RL	WL (toc)	~~HEIGHT~~ WL (bgs)
SB016	24"	7.58	5.58

9/21/11

~~SAMPLES~~ HYDROLAB UNFILTERED (1340)

TEMP (C)	24.15	Salinity	21.78
COND	34mS	ORP	46.4
DO	3.85	TURBIDITY	687
pH	6.46		

Continued on Page

Read and Understood By

Signed	Date	Signed	Date

SAMPLES	START/END	SAMPLE TIME	COMMENT
SIW-GW016UF-01	1345/1347	1345	UNFILTERED
SIW-GW016UF-02	1347/1349	1345	" "
SIW-GW016UF-03	1349/1351	1345	" "
SIW-GW016UF-04	1351/1353	1345	" "
		BK 9/15/11	
SIW-GW016F-01	1353/1355	~~1345~~ 1353	FILTERED
SIW-GW016F-02	1355/1357	~~1345~~ 1353	" "
SIW-GW016F-03	1357/1359	~~1345~~ 1353	" "
SIW-GW016F-04	1359/1401	~~1345~~ 1353	" "

1* ANN, HELEN (USACE) ARRIVE ON SITE

HYDROLAB - FILTERED

TEMP	24.58	SALINITY	21.74
COND	34~~7~~	ORP	47.0
DO	4.36	TURBIDITY	62.7
pH	6.51		

END WL 7.54' (1406)

MOVING TO SB09

SB09	RL	WL (TOC)	~~Height~~ WL (bgs)
SB09	12"	6.94	5.94

HYDROLAB - UNFILTERED 1409

TEMP	24.20	DO	3.36	Salinity	22.06	TURBIDITY	54.7
COND	35.1	pH	6.57	ORP	45.8		

Continued on Page

Read and Understood By

Signed	Date	Signed	Date

SAMPLES	START / END	SAMPLE TIME	COMMENT
SIW-GW09UF-01	1415 / 1417	1415	UNFILTERED
SIW-GW09UF-02	1417 / 1419	1415	" "
SIW-GW09UF03	1419 / 1421	1415	" "
SIW-GW09UF04	1421 / 1423	1415	" "

HYDRO LAB FILTERED 1424

TEMP	24.36
COND.	32.8
DO	3.74
pH	6.56
SALINITY	20.45
ORP	452
TURBIDITY	49.5

SAMPLES	START/END	SAMPLE TIME		COMMENT
SIW-GW09F-01	1427 / 1429	~~1415~~	1427	FILTERED
SIW-GW09F-02	1429 / 1431	~~1415~~	1427	" "
SIW-GW09F-03	1431 / 1433	~~1415~~	1427	" "
SIW-GW09F-04	1433 / 1435	~~1415~~	1427	" "

BK 9-15-11

COMPLETED G/W SAMPLING 1435

* END W/L ON SB09 6.43'

Continued on Page

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Signed Date Signed Date

1445 - Mooring equipt to Boundary to be SCANNED OUT.
1457 - PERSONNEL SCANNED OUT.
1500 ANN, HELEN LEAVE.
1520 SAM/Barry recheck gps points & Pull flags.. SHOOT IN NEW SS points

1555 Complete check

1618 Carry equipt up to SUPPORT ZONE BORDER FOR RELEASE SCANS (DAVE)
- DAVE SCANNING.

1635 Barry GPS's Fence pts IN

1705 Review ~~Test~~ PITS COORDINATES. (NEED D.F. CORRECT)

1718 BRAD CONTINUES TO WORK ON Chains

1753 PACKING UP Released equipt INTO TRAILER

SEE YELLOW SURVEY BOOK FOR EXIT PREP.

Continued on Page

Read and Understood By

Signed Date Signed Date

7-17-11 Surface Samples

Sample ID	Date	Time	Biogo	1min Rt Ct
SIW-SS-037P-0.0-2.0	7-17-11	0925	46	62
SIW-SS-036P-0.0-2.0	7-17-11	0935	46	45
SIW-SS-038P-0.0-2.0	7-17-11	0947	46	91
SIW-SS-042P-0.0-2.0	7-17-11	1013	46	48
SIW-SS-039P-0.0-2.0	7-17-11	1240	39	69
SIW-SS-039MS-0.0-2.0	7-17-11	1240	39	57
SIW-SS-039MSD-0.0-2.0	7-17-11	1240	39	62
SIW-SS-045P-0.0-2.0	7-17-11	1155	39	103
SIW-SS-044P-0.0-2.0	7-17-11	1230	39	64
SIW-SS-043P-0.0-2.0	7-17-11	1200	39	95
SIW-SS-041P-0.0-2.0	7-17-11	1120	39	62
SIW-SS-040P-0.0-2.0	7-17-11	1140	39	62
SIW-SS-DUP-005	7-17-11	1140	39	60

Continued on Page

Read and Understood By

Signed Date Signed Date

SI – SITE

7-11-11

ARRIVE ON SITE 0815

- Barry Kinsall
- Dave Lawson
- Brad Gough
- Sam Martin

Cell
718-619-7718
↓
SERGIO MEJIAS

0900 TALKED TO PAVING EMPLOYEE
0910
- SCANNED parking lot FOR RAD
0930
- PULLED TRAILER INTO GATED AREA

0935

0930 ENVIRO probe ARRIVES (KEN LINDES) LINDES
-

0940 SSH Tailgate Mtg
- Slip, Trips, Falls
- Heat,

-@1000 BRAD GETS DRINKS/ICE

347-865-2700

-955 LANDOWNER ARRIVES
- GIVES CREW HISTORY ON SITE
- ASK ABOUT ACCESS TO POWER
- SAYS NEIGHBORING BUSINESS MAY PROVIDE

1005 LAWSON sets up rad equipt.

1023 GAIN ACCESS TO ELEC. FROM BUSINESS

1040 BRAD delivers water & ICE

1055 PORTA JOHN DELIVERED

1100 TALKED TO T. EARLY ABOUT LI ISSUE

1115 REVIEW WALKDOWN AREA SAM, BRAD, BARRY

1125 HP does quickscan to give us clearance to cut BRUSH

1145 START BRUSH CLEARING.

* MULTIPLE PROBLEMS W/ STRING
- WEEDS TOO BIG FOR WEEDEATER.

1240 BRAD went to LOWES TO get BRUSH CLEARING WEEDEATER BLADES. Continued CLEARING W/ STIHLS weed eaters (many PROBS)

1300
0100 STARTED USING 40-60'S (HAND CLEARED)

1315
0115 HAD KEN START ON GPR SCAN

0130 Returned w/ NEW ATTACHMENT BLADES. MOUNTED

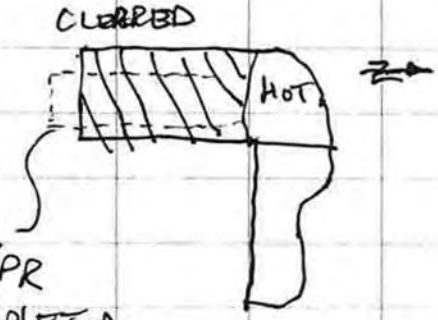
0
1350
0150 STARTED CLEARING again
- WORKED BETTER.

1405
0205 BOTH BLADES BROKE

1415
0215 STARTED HAND CLEARING

1418
0218 SAM WENT TO LOWES TO get Bigger BLADES

- Continued to HAND CLEAR



GPR Completed
1420
0220 HAD KEN (ENVIRO) LEAVE FOR Home
GPR Survey. Will continue tomorrow

1450
0250 SAM returned with blades

1507
0307 BLADES WORK MUCH BETTER.

1515
0315 LAWSON STARTS GAMMA WALKOVER OF CLEARED AREA

1523
0323 TALKED TO DRILLER. TOLD HIM TO Be here @ 8:00 (7-12-11)

1530
0330 — 0530
WEEDED & CLEARED
- LOADED UP Equipt.
- LEFT SITE

07-12-11

0650 PICKED UP WATER/ICE

0720 ARRIVED ON SITE

0730 Began setup

- ENVIROPROBE ARRIVED

0800 HAD SAFETY TAILGATE Mtg w/ WORKERS - LAWSON COVERED RAD PORTION & ON-SITE RAD TRAINING w/ DRILLERS

0818 BRAD/SAM Begins calibrating Hydrolab & PID.

0830 BARRY LOCATING Sampling points w/ TRIMBLE

0850 BRAD STARTS CALIBRATING

0905 TODD starts weed eating HOT AREA

0907 Barry DISCUSSES w/ TODD THAT ALL NORTH WESTERN points are 5.0' OFF OF the BANK IN the RIPRAP & WATER

- DECIDE TO HAVE LAWSON do gamma walkover on Riprap.

- TIDE should be LOW ~ 12:00 noon

- DRILLERS & GPR Personnel on StandBy.

PID CALIBRATED BY SAM

- Cylinders used

- 4 GAS MIX # T2150014 LOT # 633043

- Isobutylene GAS # 12150054 LOT # LTK038-MM-CM

0927 LAWSON DOES RAD Checks ON NEWLY CLEARED AREAS, NEAR NW point (110 MCR) WAIST High.

1100 Continued CLEARING

1110 LAWSON SCANS Incoming GEOPROBE & equipt.

1320 Moving Rig to 1st LOCATION

SEE FIELD SAMPLING BOOK

608

1535 DRILLER ENDS DRILLER
1550 DRILLER LEAVES SITE

1550 Continued processing Samples
- Post work RAD SCANS
- MOVED DRILLERS RODS AND SLEEVES INTO GEO TRAILER FOR Security OF Tooling.
- Secured DRILLERS ENVIROPROBE TRAILER BY SETTING GEOPROBE BASE on trailer HITCH.

1610
- BROKE DOWN sampling table AND equipt.
- LOADED equipt. IN TRAILER
- Completed post work Forms

1712 LEAVING SITE

- ARRIVED ON SITE 0725 07/13/11
- CONFERENCE CALL W/ 0730 DAVE & ANN. (USACE)
- ALSO PRESENT (TODD, BRAD, DAVE, BARRY)
- DISCUSS OFFSETTING SAMPLE pts that Fall ON the SHORE TO A safe PROBING pt OFF the Bank.

Bank and
- DAVE L. DISCUSSES PROBLEM W/ SATELLITES coverage Due to BRIDGE

Discussion on
- CONTINUED GAMMA SURVEY ON ADJACENT AREA.

- DISCUSS TEST PITS AND MOVING TP that is IN the HOT AREA. DECIDE TO HOLD OFF UNTIL we have MORE DATA.

- Discuss G/W samples. Concern over putting well in Contam. Zone. Consider putting wells in 12 & 13 (Ann's Map Numbering). - 9-10 move to parking lot
- Discuss Gamma Survey Proposed Points.
  - 5000 Reading ~~Beaten~~ Location move
  - Box in Hotspot.
  - Put a couple of holes to the south.
- Provide maps in PM for USACE to Review for Next Morning Conference Call

* SEE FIELD NOTES FOR WORK

1214 LEFT FOR LUNCH

1315 Returned to SITE

* SEE SAMPLE LogBook FOR WORK DESCRIPTION

1605 STOPPED DRILLING

1630 DRILLER LEAVES

1640 BREAKING DOWN SUPPORT ZONE

1715 LEAVING SITE.
- Locked gate (TODD/BRAD)

7-14-11

ARRIVE ON SITE 0715

0720 SETTING UP EQUIPMENT

- D. LAWSON AT SITE EARLY TO SET UP RAD EQUIPT

0730 CONFERENCE CALL W/USACE

- TODD, BARRY, BRAD (GEO)
- DAVE LAWSON (USACE)
- ANNE, DAVE HAYS, (USACE)

- ANN MENTIONS EPA REP WANTING TO VISIT SITE.

- DISCUSSING FIGURE OF PRIMARY SAMPLES, MOVED LOCATIONS & BIASED SAMPLES

1-10 (PLANNED)
11-20 (BIASED)

5 ADDITIONAL SAMPLES

- DISCUSSING DISTRIBUTION OF SAMPLING POINTS REGARDING RAD.

- DISCUSSING EXTENSION OF RAD WALKOVER

USACE Suggest
- 1 LOCATION MAKE (LOCATION 20)
1, 5, 11, 12 - PUT SAMPLE IN MIDDLE OF BOX.
- IN BETWEEN 10 & WATER? (SURFACE SAMP)
- [redacted] BK FILL BY HAND

- ANOTHER POINT W/RG BASED ON ADDITIONAL SCANS

POINT 21 SOUTH OF 11 & 12

- Discussing Surf. Sampling
  - ADD NEW locations 6 & 7 TO BIASED SURF. SAMPLES
  - STILL TRY TO DO original 6 & 7 locations

- DISCUSSED TEST PITS, POTENTIAL contaminated equipt (BUCKET)

- PATH FORWARD
  - Look @ data from BOREHOLE DATA AND DECIDE.

0830 conference over

0830 Continuing Setup to sample RAD Zone

DRILLER LEFT

TODD HAS EXCATOR SCANNED IN.

1740 TODD WORKS ON FAR NW POINT OF BANK With EXCAVATOR.

- LEVELING out Bank so GEOPROBE CAN Reach Beach.

- BRAD, SAM, Barry GRUBBING

1814 PACK UP remaining equipt

1830 LEAVING SITE 10.5 hrs

GATE LOCKED (TODD, BRAD)

7-15-11 — 0705 ARRIVE ON SITE 016

-LAWSON ON SITE

-TEMP 71; WINDS (W)
-CLEAR, DRY

0712 UNLOADING TRAILER
- ADDICE TO COOLERS
- SETTING UP TABLES

0800 USACE REP (ALAN) ARRIVES

0817 WAITING ON DRILLER
- DRILLER HAD CALLED EARLIER NOTIFYING US THAT HE WOULD BE LATE

017

0819 DRILLER ARRIVES
0820 SAFETY BRIEFING
0830 TODD & ALAN, DLAC LOOK @ SAMPLING LOCATIONS

0925 DRESSING OUT FOR ENTRY
0935 SEE FIELD BOOK FOR DAILY ACTIVITIES

1247 LEFT CONTAM. AREA
-SCANNED OUT PERSONNEL & EQUIP., TRASH

1310 LEFT FOR LUNCH
-GATE SHUT. HP STILL ON SITE.

1412 RETURNED FROM LUNCH

SEE FIELD LAB NOTES
FOR AFTERNOON ACTIVITIES

0628
Stopped Sampling

0640 PACKED up equip
& Samples
— NO RAD DETECTION on
equipt or Samples

0650 LEFT SITE
GATE LOCKED (TODD, BRAD)

7-16-11

0706 ARRIVE ON SITE
— DAVE (ALREADY ON SITE)

0715 UNLOADING Equipt. / SETUP

0730 SAFETY BRIEFING
— TODD LEADS

0738 DAVE HANS (USACE) ON SITE

0744 FINISH BRIEFING

0752 SETTING up SURF
Sampling equipt.

* SEE FIELD BOOK FOR
SAMPLING EFFORTS

1845 BREAKING DOWN equipt & BREAK AREA

1900 LOCKING TRAILER - LEAVING SITE

7-17-11

0655 ARRIVE ON SITE

0700 SETTING UP BREAK AREA - DAVE HAYS ARRIVES

0705 SAFETY BRIEFING

0714 BRIEFING COMPLETED

0716 SAM Calibrating HYDROLAB

0722 Barry TRANSFERRING PICS to computer FOR DAVE TO VIEW.

0724 TODD & DAVE H, DAVE L. WALKING DOWN SITE

- SEE FIELD BOOK FOR WORK DESC.

1759 PACKING UP Survey CLEARED equipt.

1932 LEAVING SITE GATE LOCKED (TODD, BRAD)

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0838	SIW-SS-001P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-001
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 0900	Sample Number: SIW-SS-002P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-002
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/15/11	Sample Time: 1810	Sample Number: SIW-SS-003P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-003
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/15/11	Sample Time: 1600	Sample Number: SIW-SS-004P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-004
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 0840	Sample Number: SIW-SS-005P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-005
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1606	SIW-SS-006P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-006
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1802	SIW-SS-007P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-007
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill; Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1050	Sample Number: SIW-SS-008P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-008
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1105	Sample Number: SIW-SS-009P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-009
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/15/11	Sample Time: 1745	Sample Number: SIW-SS-010P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-010
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)
Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0815	SIW-SS-011P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-011
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0825	SIW-SS-012P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-012
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1030	SIW-SS-013P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-013
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0850	SIW-SS-014P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-014
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1045	SIW-SS-015P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-015
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1038	SIW-SS-016P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-016
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:	Sample Collection:
[X] Surface Soil	[X] Grab
[ ] Subsurface Soil	[ ] Composite
[ ] Sediment	[ ] Multi-increment
[ ] Waste	[ ] Other _____
[ ] Other _____	

Aqueous Sample

Aqueous Sample Type:	Well Information
[ ] Surface Water	Well Casing Size:
[ ] Groundwater	Total Well Depth
[ ] Monitoring Well	Static Water Level:
[ ] Domestic Well	One Purge Volume:
[ ] Other _____	Start Purge:
[ ] Seep	End Purge:
[ ] Sump	Total Purge Time:
[ ] Waste	Total Purge Volume:
[ ] Other _____	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1038	Sample Number: SIW-SS-Dup-002
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-016
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0910	SIW-SS-017P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-017
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1112	SIW-SS-018P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-018
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1112	Sample Number: SIW-SS-Dup-004
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-018
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1800	SIW-SS-019P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-019
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0830	SIW-SS-020P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-020
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:	Sample Collection:
[X] Surface Soil	[X] Grab
[ ] Subsurface Soil	[ ] Composite
[ ] Sediment	[ ] Multi-increment
[ ] Waste	[ ] Other _____
[ ] Other _____	

Aqueous Sample

Aqueous Sample Type:	Well Information
[ ] Surface Water	Well Casing Size:
[ ] Groundwater	Total Well Depth
[ ] Monitoring Well	Static Water Level:
[ ] Domestic Well	One Purge Volume:
[ ] Other _____	Start Purge:
[ ] Seep	End Purge:
[ ] Sump	Total Purge Time:
[ ] Waste	Total Purge Volume:
[ ] Other _____	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1650	SIW-SS-021P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-021
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/15/11	Sample Time: 1650	Sample Number: SIW-SS-Dup-001
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-021
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	0815	SIW-SS-022P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-022
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 0900	Sample Number: SIW-SS-023P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-023
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy / rainy / sunny / snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1100	SIW-SS-024P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-024
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1100	Sample Number: SIW-SS-Dup-003
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-024
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1645	SIW-SS-025P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-025
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1645	Sample Number: SIW-SS-025MS-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-045
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1645	Sample Number: SIW-SS-025MSD-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-045
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1740	SIW-SS-026P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-026
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:	Sample Collection:
[X] Surface Soil	[X] Grab
[ ] Subsurface Soil	[ ] Composite
[ ] Sediment	[ ] Multi-increment
[ ] Waste	[ ] Other _____
[ ] Other _____	

Aqueous Sample

Aqueous Sample Type:	Well Information
[ ] Surface Water	Well Casing Size:
[ ] Groundwater	Total Well Depth
[ ] Monitoring Well	Static Water Level:
[ ] Domestic Well	One Purge Volume:
[ ] Other _____	Start Purge:
[ ] Seep	End Purge:
[ ] Sump	Total Purge Time:
[ ] Waste	Total Purge Volume:
[ ] Other _____	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1625	SIW-SS-027P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-027
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1640	SIW-SS-028P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-028
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1640	SIW-SS-029P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-029
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1715	SIW-SS-030P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-030
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1725	SIW-SS-031P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-031
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1240	Sample Number: SIW-SS-032P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-032
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. From Test Pit 4.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1422	SIW-SS-033P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-033
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:	Sample Collection:
[X] Surface Soil	[X] Grab
[ ] Subsurface Soil	[ ] Composite
[ ] Sediment	[ ] Multi-increment
[ ] Waste	[ ] Other _____
[ ] Other _____	

Aqueous Sample

Aqueous Sample Type:	Well Information
[ ] Surface Water	Well Casing Size:
[ ] Groundwater	Total Well Depth
[ ] Monitoring Well	Static Water Level:
[ ] Domestic Well	One Purge Volume:
[ ] Other _____	Start Purge:
[ ] Seep	End Purge:
[ ] Sump	Total Purge Time:
[ ] Waste	Total Purge Volume:
[ ] Other _____	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. From Test Pit 2.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/16/11	Sample Time: 1548	Sample Number: SIW-SS-034P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-034
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth:
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. From Test Pit 3.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/16/11	1705	SIW-SS-035P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-035
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. From Test Pit 1.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0935	SIW-SS-036P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-036
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0925	SIW-SS-037P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-037
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0947	SIW-SS-038P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-038
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1240	SIW-SS-039P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-039
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1240	SIW-SS-039MS-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-039
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1240	SIW-SS-039MSD-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-039
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1140	Sample Number: SIW-SS-040P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-040
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)
Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

[ ] Volatiles [ ] Semivolatiles [ ] Ions [ ] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[ ] Pesticides [ ] Herbicides [ ] PCB [ ] Cyanide [ ] Explosives [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1140	Sample Number: SIW-SS-Dup-005
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-040
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1120	SIW-SS-041P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-041
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1120	SIW-SS-041PC-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-041
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1013	SIW-SS-042P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-042
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1013	SIW-SS-042PC-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-042
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information:
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1200	Sample Number: SIW-SS-043P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-043
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0925	SIW-SS-043PC-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-043
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0925	SIW-SS-043MSC-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SS-043
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0925	SIW-SS-043MSDC-0.0-2.0
Sampled By: Barry Kinsall/Sam Martin	**Signature(s):**	**Sampling Method:** Grab	**Sampling Location:** SS-043
Client: USACE - Kansas City District	**Contract Number:** W912DQ-10-D-3012	**Delivery Order:** 0004	**Chain of Custody Number:**

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1230	SIW-SS-044P-0.0-2.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-044
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1230	Sample Number: SIW-SS-044PC-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-044
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information:
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy sunny snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1230	SIW-SS-CDup-001
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SS-044
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'. Characterization sample.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

[X] Volatiles [X] Semivolatiles [ ] Ions [X] RCRA Metals [ ] TAL Metals [ ] Select Metals (list) _____

[X] Pesticides [X] Herbicides [X] PCB [ ] Cyanide [ ] Explosives [ ] Other (list): _____

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy sunny snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1155	Sample Number: SIW-SS-045P-0.0-2.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SS-045
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [X] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)
Fill: Brownish tan, topsoil, scattered gravel. Sample taken from 0.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1330	SIW-SB-001P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-001
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Blackish, grey, dry, hard, scattered small rocks. Sample taken from 2.0-3.4'

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1330	SIW-SB-001P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-001
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Greyish brown, wet, sandy, scattered pebbles and gravel. Sample taken from 3.4-5.2'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1424	SIW-SB-002P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-002
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/black, dry, hard. Sample taken from 1.5-2.8'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1508	SIW-SB-003P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-003
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/tan, dry, hard, fine. Sample taken from 1.9-2.8'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1508	SIW-SB-003P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-003
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, soft, gravelly. Sample taken from 4.3-5.0'. Strong diesel odor.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	88.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1530	SIW-SB-004P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-004
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/tan, dry, medium. Sample taken from 1.0-1.7'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1530	SIW-SB-004P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-004
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Black/brown, dry, hard. Sample taken from 3.0-4.0'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	88.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/12/11	1530	SIW-SB-Dup-001
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-004
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/tan, dry, medium. Sample taken from 1.0-1.7'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	88.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1031	SIW-SB-005P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish brown, loose, brick pieces. Sample taken from 2.0-2.9'..

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/13/11	Sample Time: 1031	Sample Number: SIW-SB-005P-5.0-8.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-005
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, wet, loose, sandy gravel. Sample taken from 3.4-4.4'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 87.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1031	SIW-SB-Dup-002
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, wet, loose, sandy gravel. Sample taken from 3.4-4.4'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1410	SIW-SB-006P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-006
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☒ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other

Sample Collection:
- ☒ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, wet, gravelly, clayey. Diesel odor at 3.7'. Sample taken from 1.2-3.7'.

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☐ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☐ Other
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1410	SIW-SB-006P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-006
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish grey, moist, loose, sandy. Sample taken from 4.2-5.7'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1410	SIW-SB-006MS-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-006
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish grey, moist, loose, sandy. Sample taken from 4.2-5.7'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1410	SIW-SB-006MSD-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-006
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish grey, moist, loose, sandy. Sample taken from 4.2-5.7'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1345	SIW-SB-007P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-007
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Dark brown, moist, sand and gravel present. Sample taken from 2.0-3.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1345	SIW-SB-007P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-007
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, wet, pieces of construction wood present, diesel odor. Sample taken from 2.0-3.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1450	SIW-SB-008P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-008
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, clayey, increased plasticity at 3.0-3.5'. Sample taken from 2.0-3.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1450	SIW-SB-008P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-008
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, moist, clayey, increased plasticity at 3.5-4.5'. Sample taken from 3.5-4.5'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/14/11	Sample Time: 1450	Sample Number: SIW-SB-008MS-0.0-5.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-008
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, clayey, increased plasticity at 3.0-3.5'. Sample taken from 2.0-3.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1450	SIW-SB-008MSD-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-008
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, clayey, increased plasticity at 3.0-3.5'. Sample taken from 2.0-3.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1605	SIW-SB-009P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-009
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, clayey, moist, plastic. Sample taken from 0.0-0.5'. Highest readings at 3.0-6.0".

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1605	SIW-SB-009P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-009
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish brown, clayey, gravelly, moist. Sample taken from 0.0-0.5'. Highest readings at 2.5-3.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1115	SIW-SB-010P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Clayey sand, brown, moist, coarse. Sample taken from 1.0-1.6'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1115	SIW-SB-010P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Blackish brown saturated, sediment. Sample taken from 1.6.0-3.6'. Diesel present

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1115	SIW-SB-Dup-005
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☒ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☒ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Clayey sand, brown, wet, coarse. Sample taken from 1.0-1.6'.

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☐ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☐ Other _____
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1105	SIW-SB-011P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-011
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/red, moist. Sample taken from 2.5-3.3'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1105	SIW-SB-011P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-011
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown/red, moist to wet. Sample taken from 5.5-6.8'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	87.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/13/11	Sample Time: 1140	Sample Number: SIW-SB-012P-0.0-5.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-012
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Tan/brown, dry, loose, black gravel. Sample taken from 1.5-2.3'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list)
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy / rainy / sunny / snowy	Temperature: 87.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/13/11	Sample Time: 1140	Sample Number: SIW-SB-012P-5.0-8.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-012
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Clay: Reddish brown, moist, black gravel. Sample taken from 3.6-4.4'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 87.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1110	SIW-SB-013P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-013
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Dark brown, moist, loose, organic material. Sample taken from 1.0-2.0'. Core had higher gamma readings.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/14/11	Sample Time: 1110	Sample Number: SIW-SB-013P-5.0-8.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-013
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish tan, wet, loose, scattered sand, gravel/brick. Sample taken from 2.0-3.0'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1555	SIW-SB-014P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-014
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brownish red, dry, loose. Sample taken from 1.6-2.6'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	87.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/13/11	Sample Time: 1555	Sample Number: SIW-SB-014P-5.0-8.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-014
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)
Fill: Brownish grey, wet, clayey. Sample taken from 2.6-3.6'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 87.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1500	SIW-SB-015P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-015
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, topsoil mix, organic material.
Sample taken from 1.0-1.4'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1200	SIW-SB-016P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-016
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, gravel, dry, organic material. Sample taken from 1.0-1.6'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1200	SIW-SB-016P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-016
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, gravel, saturated material. Sample taken from 3.0-3.4'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/14/11	Sample Time: 1240	Sample Number: SIW-SB-017P-0.0-5.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-017
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, dry, topsoil mix, organic material.
Sample taken from 1.0-2.0'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1525	SIW-SB-018P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-018
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, clayey, moist, plastic. Sample taken from 0.3-2.4'. Highest readings at 0.3", Sample taken from where the highest reading was observed in the rad walkover.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1525	SIW-SB-Dup-03
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-018
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, clayey, moist, plastic. Sample taken from 0.3-2.4'. Highest readings at 0.3". Sample taken from where the highest reading was observed in the rad walkover.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/13/11	1520	SIW-SB-019P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-019
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Tan, dry, loose, gravel present. Sample taken from 1.7-2.7'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	87.0° F	

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/13/11	Sample Time: 1520	Sample Number: SIW-SB-019P-5.0-8.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-019
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, moist, black sand. Sample taken from 5.5-6.5'.

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy / rainy / [sunny] / snowy	Temperature: 87.0° F	Barometer:

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/14/11	Sample Time: 1015	Sample Number: SIW-SB-020P-0.0-5.0
Sampled By: Brad Gough/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-020
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)
Fill: Reddish brick, gravel material, moist. Sample taken from 0.8-1.8'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions: cloudy rainy [sunny] snowy	Temperature: 85.0° F	Barometer:

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1015	SIW-SB-020P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-020
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other

Well Information:
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish brick, gravel material, moist. Sample taken from 3.0-3.8'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1210	SIW-SB-021P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-021
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Sand: Black, wet, loose, coarse. Sample taken from 1.0-2.4'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1210	SIW-SB-021P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-021
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Sand: Black sediment, wet, loose, coarse. Sample taken from 1.0-2.4'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1035	SIW-SB-022P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-022
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish tan, dry, black asphalt pieces. Sample taken from 1.2-2.2'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/14/11	1035	SIW-SB-022P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-022
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Clay: Red, wet, soft, gravelly. Sample taken from 3.4-4.4'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	85.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	0950	SIW-SB-023P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-023
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish brown, clayey, gravelly, moist.
Sample taken from 1.0-2.0'.

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	0950	SIW-SB-023P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-023
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Reddish brown, clayey, gravelly, saturated, plastic, gravelly. Sample taken from 3.0-3.6'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy [sunny] snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1030	SIW-SB-024P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-024
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill:Brown, moist, gravelly, asphalt pieces. Sample taken from 1.0-1.7'.

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1030	SIW-SB-Dup-004
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-024
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Fill: Brown, moist, gravelly, asphalt pieces. Sample taken from 1.0-1.7'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1135	SIW-SB-025P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-025
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Sample Description (classification, color, plasticity, moisture content, consistency)

Clay: Redish brown, wet, plastic. Sample taken from 1.0-1.9'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1230	SIW-SB-026P-0.0-5.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-026
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Sample Description (classification, color, plasticity, moisture content, consistency)

Sand: Brownish/red, gravelly, coarse ,wet, loose. Sample taken from 1.0-2.4'

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/15/11	1230	SIW-SB-026P-5.0-8.0
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Brad Gough/Sam Martin		Grab	SB-026
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [X] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [X] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Sand: Black sediment, wet, organic material present. Sample taken from 3.0-4.0'

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [ ] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [ ] Other _____
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	84.0° F	

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0900	SIW-GW-005UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
0856	22.89	6.31	333	3.17	50.1	55.6

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0900	SIW-GW-005UFDUP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
0856	22.89	6.31	333	3.17	50.1	55.6

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0916	SIW-GW-005FP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- [ ] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:
- [ ] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- [ ] Surface Water
- [X] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [X] Other Temp Well
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
0910	21.84	6.25	339	3.17	50.3	50.0

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0916	SIW-GW-005FDUP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-005
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
0910	21.84	6.25	339	3.17	50.3	50.0

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1415	SIW-GW-009UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-009
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1408	24.20	6.57	351	3.36	45.8	54.7

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1427	SIW-GW-009FP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-009
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1424	24.36	6.56	328	3.74	45.2	49.5

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy ☒ sunny snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1206	SIW-GW-010UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1201	22.84	6.18	346	4.39	48.2	57.6

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1206	SIW-GW-010UFMS
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [ ] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [X] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [X] Other Temp Well
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1201	22.84	6.18	346	4.39	48.2	57.6

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1206	SIW-GW-010UFMSD
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- [ ] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Waste
- [ ] Other _____

Sample Collection:

- [ ] Grab
- [ ] Composite
- [ ] Multi-increment
- [ ] Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- [ ] Surface Water
- [X] Groundwater
  - [ ] Monitoring Well
  - [ ] Domestic Well
  - [X] Other Temp Well
- [ ] Seep
- [ ] Sump
- [ ] Waste
- [ ] Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

- [ ] Volatiles
- [ ] Semivolatiles
- [ ] Ions
- [ ] RCRA Metals
- [ ] TAL Metals
- [ ] Select Metals (list) _____
- [ ] Pesticides
- [ ] Herbicides
- [ ] PCB
- [ ] Cyanide
- [ ] Explosives
- [X] Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1201	22.84	6.18	346	4.39	48.2	57.6

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1234	SIW-GW-010FP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1228	24.62	6.24	344	3.93	47.4	55.3

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1234	SIW-GW-010FMS
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1228	24.62	6.24	344	3.93	47.4	55.3

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1234	SIW-GW-010FMSD
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-010
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1228	24.62	6.24	344	3.93	47.4	55.3

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1345	SIW-GW-016UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-016
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	
Total Well Depth	
Static Water Level:	
One Purge Volume:	
Start Purge:	
End Purge:	
Total Purge Time:	
Total Purge Volume:	
Purge Method:	

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1340	24.15	6.46	346	3.85	46.4	68.7

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1353	SIW-GW-016FP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-016
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:
Total Well Depth
Static Water Level:
One Purge Volume:
Start Purge:
End Purge:
Total Purge Time:
Total Purge Volume:
Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1349	24.58	6.31	347	4.36	47.0	62.7

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	0955	SIW-GW-023UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-023
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
0950	22.46	6.55	348	4.71	43.9	75.8

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1018	SIW-GW-023FP
Sampled By: Barry Kinsall/Sam Martin	**Signature(s):**	**Sampling Method:** Grab	**Sampling Location:** SB-023
Client: USACE - Kansas City District	**Contract Number:** W912DQ-10-D-3012	**Delivery Order:** 0004	**Chain of Custody Number:**

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information
- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1013	22.42	6.66	351	4.04	46.6	52.3

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name:	Sample Date:	Sample Time:	Sample Number:
Staten Island Warehouse FUSRAP Site Staten Island, NY	07/17/11	1046	SIW-GW-026UFP
Sampled By:	**Signature(s):**	**Sampling Method:**	**Sampling Location:**
Barry Kinsall/Sam Martin		Grab	SB-026
Client:	**Contract Number:**	**Delivery Order:**	**Chain of Custody Number:**
USACE - Kansas City District	W912DQ-10-D-3012	0004	

Solid Sample

Solid Sample Type:

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:

- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:

- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

- Well Casing Size:
- Total Well Depth
- Static Water Level:
- One Purge Volume:
- Start Purge:
- End Purge:
- Total Purge Time:
- Total Purge Volume:
- Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1042	24.52	7.31	356	6.06	49.1	54.5

Comments:

Weather Conditions:	Temperature:	Barometer:
cloudy rainy **sunny** snowy	85.0° F	766.4 mmHg

FIELD DATA SHEET

Site Name: Staten Island Warehouse FUSRAP Site Staten Island, NY	Sample Date: 07/17/11	Sample Time: 1058	Sample Number: SIW-GW-026FP
Sampled By: Barry Kinsall/Sam Martin	Signature(s):	Sampling Method: Grab	Sampling Location: SB-026
Client: USACE - Kansas City District	Contract Number: W912DQ-10-D-3012	Delivery Order: 0004	Chain of Custody Number:

Solid Sample

Solid Sample Type:
- ☐ Surface Soil
- ☐ Subsurface Soil
- ☐ Sediment
- ☐ Waste
- ☐ Other _____

Sample Collection:
- ☐ Grab
- ☐ Composite
- ☐ Multi-increment
- ☐ Other _____

Sample Description (classification, color, plasticity, moisture content, consistency)

Aqueous Sample

Aqueous Sample Type:
- ☐ Surface Water
- ☒ Groundwater
  - ☐ Monitoring Well
  - ☐ Domestic Well
  - ☒ Other Temp Well
- ☐ Seep
- ☐ Sump
- ☐ Waste
- ☐ Other _____

Well Information

Well Casing Size:	Total Well Depth	Static Water Level:	One Purge Volume:	Start Purge:	End Purge:	Total Purge Time:	Total Purge Volume:	Purge Method:

Analysis

☐ Volatiles ☐ Semivolatiles ☐ Ions ☐ RCRA Metals ☐ TAL Metals ☐ Select Metals (list) _____

☐ Pesticides ☐ Herbicides ☐ PCB ☐ Cyanide ☐ Explosives ☒ Other (list): Radiological Contamination

Purge Data

Time (hrs)	Temperature (°C)	pH (SU)	Conductance (mS/cm)	D.O. (mg/L)	ORP (mv)	Turbidity (NTU)
1054	24.18	7.32	352	5.73	48.6	50.8

Comments:

Weather Conditions: cloudy rainy **sunny** snowy	Temperature: 85.0° F	Barometer: 766.4 mmHg

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7/11/11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☐ 70-85 °F ☑ 85 > °F

Wind: ☐ Still ☑ Gusty ☐ Moderate ☐ High; Direction: NW N

Humidity: ☑ Dry ☐ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment 40-40's	Number of Workers	Total Hours Worked
CLEARING / GRUBBING	GEO	WEED EATERS	3	9
RAD SCAN / Equipment Calibration	SAIC	MISC RAD METERS	1	9
GPR Survey	ENV. PROBE	GPR	1	4

Problems Encountered	Corrective Action Taken
WEED EATER STRING Breaking	Bought METAL BLADE ATTACHMENTS
METAL BLADE ATT. Breaking	Bought STEEL BLADES - WORK BETTER

Total Daily Hours Worked by all Personnel: 9 HRS

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken

Remarks:

Safety Statistics

Number of First Aid Incidents:	
Number of Recordable Incidents:	
Number of Lost Time Days:	

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist	✓			
Borehole and Core Logging Checklist				✓
Decontamination Checklist				✓
Instrument Calibration Checklist				✓
Sample Collection Checklist				✓
Packing, Storing, and Shipment of Samples Checklist				✓
Field Documentation Checklist				✓
Health and Safety Checklist	✓			
IDW Management Checklist				✓
Mobilization/Demobilization Checklist				✓
Building Questionnaire				✓
HTRW Drilling Log Form				✓
Field Data Sheet				✓
Chain of Custody Forms				✓

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature: _____ Date: 7-16-11

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection	
Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist	✓			
Borehole and Core Logging Checklist				✓
Decontamination Checklist				✓
Instrument Calibration Checklist				✓
Sample Collection Checklist				✓
Packing, Storing, and Shipment of Samples Checklist				✓
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				✓
Building Questionnaire				✓
HTRW Drilling Log Form				✓
Field Data Sheet	✓			
Chain of Custody Forms				✓

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature: _____ Date: 7-11-11

Daily Tailgate Meeting Form

Job Name STATEN ISLAND
Start Time 0940

Number
Completed 0955

Date 7/11/11
Site Location STATEN ISLAND

Type of Work (General)

SAFETY ISSUES

Tasks (this shift)	WEED EATING, CPR, Setup RAD Survey
Protective Clothing/Equipment	To Be determined
Chemical Hazards	
Physical Hazardous	TRIP. SLIPS / FALLS, HEAT STRESS
Control Methods	DOSIMETERS, RAD METERS, Safety glasses, ear plugs
Special Equipment/Techniques	
Hazard Communication Overview	
Nearest Phone	Cell phones on site
Name/Address	
(incidents, actions taken, etc.)	

Hospital
Special Topics

ATTENDEES

Print Name	Sign Name
SAM MARTIN	
BRAD GOUGH	
DAVID LAWTON	
Ken Lindes	
Barry Tinsall	

Meeting conducted by:

Surveying Checklist (Page 1 of 1)

Project Name/Number: SI WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7/11/11

GPR Survey

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?	✓			
2. Was the schedule for the work provided to the surveyor?	✓			
3. Was the survey completed by a licensed land surveyor?				✓
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-11-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-11-11

Boring/Monitoring Well Number(s): N/A

N/A

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?				✓
2. Was each decontamination event recorded in the logbook?				✓
3. Was IDW (decontamination water) handled in accordance with the approved work plan?				✓

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-11-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-11-11

Air Monitoring.

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?	✓			

List instruments used at the site: SEE HP DOCUMENTATION

BREATHING ZONE MON. BE

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-11-11

N/A
D. DNT SAMPLE

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND SI

Site: STATEN ISLAND, NY

Sampling Date: 7.11.11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?				✓
2. Were samples collected using methods described in the Work Plan?				✓
3. Were sample containers filled in the correct order?				✓
4. Was sampling equipment appropriate for the purpose and site conditions?				✓
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?				✓
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?				✓
7. Were sampling locations properly identified by land survey or GPS locator?				✓
8. Were bottles adequately protected from contamination prior to sample identification?				✓

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?				✓
10. Was a field sampling form completed?				✓
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				✓

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?				✓
13. Was a field sampling form completed?				✓
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				✓
15. Was headspace in sample containers for volatiles eliminated?				✓

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-11-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: SI WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-11-11

Boring/Monitoring Well Number(s): N/A

Surface Soil Sample Number(s): N/A

N/A

DUPLICATE SAMPLE

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A
1. Were the samples handled according to the Work Plan and QAPP?				✓
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?				✓
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				✓
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				✓
6. Was a shipping label attached to the cooler?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-11-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: SI WAREHOUSE SI

Site: STATEN ISLAND, NY

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?				✓
-HTRW Drilling Log Form?	✓			
-Field Log Books?			✓	
-Project Photograph Log (in Log Book)?				✓
-Field Data Sheet?				✓
-Chain of Custody Forms?				

List additional field forms completed:

SURVEY CHECKLIST

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-14-11

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:				
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?				✓
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?		✓		
20. Is the drill rig kill switch clearly marked and easily accessible?		✓		

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-11-11

Health and Safety Checklist (Page 1 of 2)

Date: 7-11-11

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Briefed on-site Personnel and Work Locations: SI WAREHOUSE SITE

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?	✓			
5. Are the following training records current and available:				
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: SI WAREHOUSE SI

Site: STATEN ISLAND NY

Sampling Date: —

Boring/Monitoring Well Number: —

N/A

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?				✓
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?				✓
3. Were all containers properly labeled and stored?				✓
4. Were all containers in satisfactory condition?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-11-11

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: _____

Site: STATEN ISLAND

Date: 7-12-11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☐ 70-85 °F ☑ 85 > °F

Wind: ☐ Still ☐ Gusty ☑ Moderate ☐ High; Direction: NWN

Humidity: ☑ Dry ☐ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
Weed eating / CLEARING	GEO	weedeater	2	
GAMMA WALKOVER	SAIC	MISC RAD EQUIPT	1	
GPS Survey / Locating	GEO	TRIMBLE	1	
GPR Survey	ENVIROPROBE	GPR	1	
GEO PROBING	ENVIROPROBE	PROBE	2	

Problems Encountered	Corrective Action Taken
BENT DP RODS ON CONCRETE HAMMERING	AFTER 2ND ATTEMPT - MOVED TO ANOTHER HOLE

Total Daily Hours Worked by all Personnel: ~~[illegible]~~ hrs

1910

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist	✓			
Borehole and Core Logging Checklist	✓			
Decontamination Checklist				
Instrument Calibration Checklist	✓			
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist	✓			
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				✓
Building Questionnaire				✓
HTRW Drilling Log Form	✓			
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature: [signature]

Date: 7-12-11

Daily Tailgate Meeting Form

Job Name SI Number Date 7/12/11
Start Time 0715 Completed 0778 Site Location STATEN ISLAND

Type of Work (General) BRUSH CLEARING, GPR, RAD WALKOVER, DRILLING, SAMPLING

SAFETY ISSUES

Tasks (this shift)	SEE ABOVE
Protective Clothing/Equipment	GLOVES, SHOE COVERS, HARD HATS, SAFETY GLASSES STEEL-TOE BOOTS
Chemical Hazards	GASOLINE,
Physical Hazardous	Heat Stress, WEED EATING, CORE SLICING, Pinch Points
Control Methods	DOSIMETERS / GLOVES, AIR MONITORS RAD SCANNERS
Special Equipment/Techniques	RAD Survey Equipt.
Hazard Communication Overview	
Nearest Phone	NUMEROUS CELL PHONES
Name/Address	
(incidents, actions taken, etc.)	

Hospital
Special Topics

ATTENDEES

Print Name	Sign Name
Todd Buchanan	
DAVID LAWSON	
SAM MARTIN	
BRAD GOUGH	
Ken Lindes	
HOWARD HAMMER	
Brian Sweeney	

Meeting conducted by: Barry Kinsall GENERAL / DAVE LAWSON RAD

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7/12/11

GPR SURVEYING

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?	✓			
2. Was the schedule for the work provided to the surveyor?	✓			
3. Was the survey completed by a licensed land surveyor?	✓			
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7.12.11

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI Site: STATEN ISLAND, NY

Boring/Monitoring Well Number: SB001, SB002, SB003, SB004

Date: 7/12/11

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?	✓			
2. Was log completed and entries printed legibly on the HTRW Drilling Log?	✓			
3. Was the log scale 1 inch = 1 foot?				
4. Were logs completed in the field (originals)?	✓			
5. Does the log contain the following entries?				
-Unique borehole number	✓			
-Depositional type (alluvium, till, loess, etc.)	✓			
-Depths/Heights recorded in tenths of feet.	✓			
-Soils classified as per USCS and fully described with numerical percents of constituents.	✓			
-Soil moisture content and texture or cohesiveness.	✓			
6. Was general information (top of form HTRW drilling log) completed?	✓			
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?	✓			
8. Were start and completion dates and time included for boring installation activities?	✓			
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?				✓
10. Were depths at which free water was encountered and stabilized water levels recorded?		✓		✓
11. Were soil sample depths recorded?	✓			
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
13. Were soil sampling methods and recovery recorded?	✓			
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	✓			
15. Were abbreviations used on the log defined?	✓			
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				✓
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-12-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-12-11

Boring/Monitoring Well Number(s): SB001, SB002, SB003, SB004

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
2. Was each decontamination event recorded in the logbook?	✓			
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-12-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-12-11

A.R Monitoring

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?*	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?	✓			

List instruments used at the site: Breathing Zone Monitor

- SEE HP Documentation.

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-12-11

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7/12/11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?				
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?				
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?				/
13. Was a field sampling form completed?				/
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				/
15. Was headspace in sample containers for volatiles eliminated?				/

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-12-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: _____

Site: 7/12/11 STATEN ISLAND NY

Sampling Date: 7/12/11

Boring/Monitoring Well Number(s): N/A (NO WELLS)

SB001, SB002, SB003, SB004

SUBSURFACE ~~Surface~~ Soil Sample Number(s):

SIW-SB001P-0.0-0.5, SIW-SB001P-5.0-8.0

SIW-SB002P-0.0-0.5, NO 5.0-8' sample.

SIW-SB003P-0.0-0.5, SIW-SB003P-5.0-8.0

SIW-SB004P-0.0-0.5, SIW-SB004P-5.0-8.0 SB-DUP-001 (FROM SB-004)

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A	
1. Were the samples handled according to the Work Plan and QAPP?	✓				
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓	RAD
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	✓				
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				✓	NOT SHIPPING TODAY
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				✓	
6. Was a shipping label attached to the cooler?				✓	

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-12-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY 7/12/11

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?	✓			
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?				
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-12-11

Health and Safety Checklist (Page 1 of 2)

Date: 7/12/11

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Briefed on-site Personnel and Work Locations: D. LAWSON, SAM MARTIN, TODD BUCHANAN, BRAD GOUGH, BARRY KNOLL

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?	✓			
5. Are the following training records current and available:				
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:				
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?	✓			
20. Is the drill rig kill switch clearly marked and easily accessible?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-12-11

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-12-11

Boring/Monitoring Well Number: _____

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?		✓		✓
3. Were all containers properly labeled and stored?	✓			
4. Were all containers in satisfactory condition?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-12-11

* ALL Cuttings RETURNED TO VACANT BOREHOLE & DECON WATER

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7/13/11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☐ 70-85 °F ☑ 85 > °F

Wind: ☐ Still ☑ Gusty ☐ Moderate ☐ High; Direction: WNW

Humidity: ☑ Dry ☐ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
GAMMA WALKOVER	SAIC	RAD EQUIPT	1	8
GPS SURVEY	GEO	TRIMBLE	1	~~8~~ 1.5
GEOPROBING / TEMP WELL INSTALL	ENVIROPROBE	GEOPROBE	2	8.0
Conference call w/ USACE	GEO/SAIC	N/A	4	0.5

Problems Encountered	Corrective Action Taken
N/A	N/A

Total Daily Hours Worked by all Personnel: 9.0

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist				
Borehole and Core Logging Checklist	✓			
Decontamination Checklist	✓			
Instrument Calibration Checklist				
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist	✓			
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				
Building Questionnaire				✓
HTRW Drilling Log Form	✓			
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature:

Date: 7-13-11

Daily Tailgate Meeting Form

Job Name Staten Island
Start Time 0920

Number
Completed 0935

Date 7/13/11
Site Location STATEN ISLAND NY

Type of Work (General) RAD. SCAN, DRILLING, GPS SURVEY.

SAFETY ISSUES

Tasks (this shift)	Sub-Surface Sampling
Protective Clothing/Equipment	Minimal PPE upgrade as needed / Hard Hats & High Vis
Chemical Hazards	
Physical Hazardous	
Control Methods	Slips, Trips, Falls
Special Equipment/Techniques	Severe Weather
Hazard Communication Overview	Decon
Nearest Phone	
Name/Address	
(incidents, actions taken, etc.)	

MCP posted ↑

Hospital
Special Topics

ATTENDEES

Print Name	Sign Name
Barry Kinsall	
Brad Gouldt	
Sam Martin	
David Lawson	
Howard Hammer	
Brian Sweeney	
Todd Buchanan	

Meeting conducted by:

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-13-11

GPS / TRIMBLE

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?	✓			
2. Was the schedule for the work provided to the surveyor?	✓			
3. Was the survey completed by a licensed land surveyor?				✓
4. Were locations surveyed for horizontal and vertical control?		✓		
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?		✓		
6. Was the survey marker and TOC surveyed for each monitoring well?		✓		
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-13-11

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: _____ Site: STATEN ISLAND, NY

Boring/Monitoring Well Number: SB05, SB06, SB07, ~~SB08~~, SB011, SB012, SB014, SB019

Date: 7/13/11

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?	✓			
2. Was log completed and entries printed legibly on the HTRW Drilling Log?	✓			
3. Was the log scale 1 inch = 1 foot?		✓		
4. Were logs completed in the field (originals)?	✓			
5. Does the log contain the following entries?				
-Unique borehole number	✓			
-Depositional type (alluvium, till, loess, etc.)	✓			
-Depths/Heights recorded in tenths of feet.	✓			
-Soils classified as per USCS and fully described with numerical percents of constituents.	✓			
-Soil moisture content and texture or cohesiveness.	✓			
6. Was general information (top of form HTRW drilling log) completed?	✓			
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?	✓			
8. Were start and completion dates and time included for boring installation activities?	✓			
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?				✓
10. Were depths at which free water was encountered and stabilized water levels recorded?				✓
11. Were soil sample depths recorded?				
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
13. Were soil sampling methods and recovery recorded?	✓			
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?				✓
15. Were abbreviations used on the log defined?	✓			
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-13-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7/13/11

Boring/Monitoring Well Number(s): SB05, SB06, SB07, SB011, SB012, SB014, SB019

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
2. Was each decontamination event recorded in the logbook?	✓			
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-13-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-13-11

AIR MONITORING

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?*	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?	✓			

List instruments used at the site: BREATHING ZONE MONITOR

SEE HP DOCUMENTATION

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-13-11

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7/13/11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	✓			
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?	✓			
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?	N/A			
13. Was a field sampling form completed?	N/A			
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	N/A			
15. Was headspace in sample containers for volatiles eliminated?	N/A			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-13-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-13-11

Boring/Monitoring Well Number(s): SB05, SB06, SB07, SB011, SB012, SB014, SB019

Surface Soil Sample Number(s): N/A

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A	
1. Were the samples handled according to the Work Plan and QAPP?	✓				
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓	RAD SAMPLES
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	✓				
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				✓	DIDNT SIGN
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				✓	
6. Was a shipping label attached to the cooler?				✓	

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-13-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?	✓			
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?			✓	
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-13-11

Health and Safety Checklist (Page 1 of 2)

Date: 7/28/11

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND

Briefed on-site Personnel and Work Locations:

DAVE LAWSON, TODD Buchanan, Sam Martin, READ Gough, Howard Hammel, Brian Sweeney

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?				
5. Are the following training records current and available:				
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:				
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?		✓		
20. Is the drill rig kill switch clearly marked and easily accessible?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-13-11

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-13-11

Boring/Monitoring Well Number: SB05, SB06, SB07, SB011, SB012, SB014, SB019

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?				✓
3. Were all containers properly labeled and stored?				✓
4. Were all containers in satisfactory condition?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-13-11

* ALL CUTTINGS & DECON WATER RETURNED TO RESPECTIVE BH

Daily Quality Control Report (Page 1 of 2)

Project Name/Number:_____

Site: STATEN ISLAND, NY

Date: 7/14/11

Weather: ☑Clear ☐Overcast ☐Rain ☐Thunderstorm ☐Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐50-70 °F ☑70-85 °F ☐85 > °F

Wind: ☐Still ☐Gusty ☑Moderate ☐High; Direction:_____

Humidity: ☑Dry ☐Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
CLEARING / GRUBBING	GEO	WEED EAT	3	3
GEOPROBING	ENVIROPROBE	PROBE	2	5
Soil SAMPLING	GEO	Misc. Equipt	3	4
RAD WALK OVER	SAIC	METERS	~~2~~ 1	1
EXCAVATION	GEO	Small EXCAVATOR	1	2

BK 7-14-11

Problems Encountered	Corrective Action Taken

Total Daily Hours Worked by all Personnel: ~~16.0~~ 11.0

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	ϕ
Number of Recordable Incidents:	ϕ
Number of Lost Time Days:	ϕ

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist				✓
Borehole and Core Logging Checklist	✓			
Decontamination Checklist	✓			
Instrument Calibration Checklist	✓			
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist	✓			
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				
Building Questionnaire				✓
HTRW Drilling Log Form	✓			
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature:

Date: 7-14-11

Daily Tailgate Meeting Form

Job Name _____ Number _____ Date 7-14-11

Start Time 0814Hrs Completed _____ Site Location STATEN ISLAND, NY

Type of Work (General) Sampling (Soil Y Geoprobe)

SAFETY ISSUES

Tasks (this shift)	Soil Sampling, CLEARING / GRUBBING, GEOPROBE, EXCAVATION
Protective Clothing/Equipment	Gloves, TYVEK, Booties, Hard Hats, Safety glasses
Chemical Hazards	Gasoline
Physical Hazardous	Heat, Dehydration, Pinchpoints, RAD MATERIAL
Control Methods	BZ, Limited AREA CORE Cutting,
Special Equipment/Techniques	
Hazard Communication Overview	CELL Phones
Nearest Phone	Hospital
Name/Address	Special Topics
(incidents, actions taken, etc.)	

ATTENDEES

Print Name	Sign Name
Todd Buchanan	
David Lamon	
Brad Gough	
Howard Hammer	
Brian Sweeney	
Sam Martin	
Barry Kinsell	

Meeting conducted by: _____

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-14-11

N/A

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?				✓
2. Was the schedule for the work provided to the surveyor?				✓
3. Was the survey completed by a licensed land surveyor?				✓
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-14-11

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: _____ Site: STATEN ISLAND, NY

Boring/Monitoring Well Number: SB020, SB022, SB013, SB016, SB017, SB08 SB015, SB018, SB09

Date: 7-14-11

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?	✓			
2. Was log completed and entries printed legibly on the HTRW Drilling Log?	✓			
3. Was the log scale 1 inch = 1 foot?			✓	
4. Were logs completed in the field (originals)?	✓			
5. Does the log contain the following entries?				
-Unique borehole number	✓			
-Depositional type (alluvium, till, loess, etc.)	✓			
-Depths/Heights recorded in tenths of feet.				✓
-Soils classified as per USCS and fully described with numerical percents of constituents.	✓			
-Soil moisture content and texture or cohesiveness.	✓			✓
6. Was general information (top of form HTRW drilling log) completed?	✓			
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?	✓			
8. Were start and completion dates and time included for boring installation activities?	✓			
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?				✓
10. Were depths at which free water was encountered and stabilized water levels recorded?		✓		
11. Were soil sample depths recorded?	✓			
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
13. Were soil sampling methods and recovery recorded?				
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	✓			
15. Were abbreviations used on the log defined?	✓			
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				✓
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-14-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: _____

Site: STATEN ISLAND, NY

Sampling Date: 7-14-11

Boring/Monitoring Well Number(s): SB020, SB022, SB013, SB016, SB017, SB09, SB08, SB015, SB018

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
2. Was each decontamination event recorded in the logbook?	✓			
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-14-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND

Date: 7-14-11

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?				✓

List instruments used at the site:

BREATHING ZONE MONITORS (BZ) (See HP records)

HYDROLAB (DIDN'T USE)

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-14-11

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: _____

Site: STATEN ISLAND, NY

Sampling Date: 7-14-11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	✓			
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?	✓			
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?				✓
13. Was a field sampling form completed?				✓
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				✓
15. Was headspace in sample containers for volatiles eliminated?				✓

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-14-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: _____

Site: STATEN ISLAND, NY

Sampling Date: 7-14-11

Boring/Monitoring Well Number(s): SB020, SB022, SB013, SB016, SB017, SB08, SB015, SB018, SB09

Surface Soil Sample Number(s): N/A

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A	
1. Were the samples handled according to the Work Plan and QAPP?	✓				
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓	
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	✓				
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				✓	DIDNT SHIP
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				✓	
6. Was a shipping label attached to the cooler?				✓	

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-14-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?	✓			
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?		✓		
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-14-11

Health and Safety Checklist (Page 1 of 2)

Date: 7-14-11

Project Name/Number:

Site: STATEN ISLAND, NY

Briefed on-site Personnel and Work Locations: STATEN ISLAND WAREHOUSE STATEN ISLAND, NY

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?				
5. Are the following training records current and available:				
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:				
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?			✓	
20. Is the drill rig kill switch clearly marked and easily accessible?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-14-11

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: _____

Site: STATEN ISLAND, NY

Sampling Date: 7-14-11

Boring/Monitoring Well Number: SB020, SB022, SB013, SB016, SB017, SB08, SB015, SB018, SB09

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?	✓			
3. Were all containers properly labeled and stored?				✓
4. Were all containers in satisfactory condition?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-14-11

* All Cuttings & Decon WATER RETURNED To Respective Bbl.

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: _____

Site: STATEN ISLAND WAREHOUSE

Date: 7-15-11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☑ 70-85 °F ☐ 85 > °F

Wind: ☑ Still ☐ Gusty ☐ Moderate ☐ High; Direction: W

Humidity: ☑ Dry ☐ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
GEOPROBING	ENVIPROBE	GEOPROBE	2	
SAMPLING	GEO	TOOLS	3	
HP SUPPORT	SAIC	RAD METERS	1	
MANAGER	GEO		1	

Problems Encountered	Corrective Action Taken

Total Daily Hours Worked by all Personnel: 11.0

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist				✓
Borehole and Core Logging Checklist	✓			
Decontamination Checklist	✓			
Instrument Calibration Checklist	✓			
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist	✓			
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				
Building Questionnaire				
HTRW Drilling Log Form	✓			
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature:

Date: 7-15-11

Daily Tailgate Meeting Form

Job Name _____ Number _____ Date 7-15-11

Start Time 0820 Completed 0928 Site Location STATEN ISLAND, NY

Type of Work (General) SAMPLING, GROUNDING, TEMP. WELL INSTALLATION

SAFETY ISSUES

Tasks (this shift)	SEE ABOVE
Protective Clothing/Equipment	TYVEK, BOOTIES, NITRILE GLOVES, SAFETY GLASSES STEEL TOE BOOTS
Chemical Hazards	GASOLINE
Physical Hazardous	RAD, CUTS, YO-YO, HEAT,
Control Methods	DOSIMETERS, AIR MONITORING, RAD METERS
Special Equipment/Techniques	
Hazard Communication Overview	
Nearest Phone	CELL PHONES
Name/Address	
(incidents, actions taken, etc.)	

Hospital
Special Topics

ATTENDEES

Print Name	Sign Name
Barry Kinsall	
Brad Gough	
Howard Hammer	
Todd Burlough	
Allen Roos	
Oleg Povetko	
David Lawson	
Brian Sweeney	
Sam Martin	

Meeting conducted by: _____

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-15-11

N/A

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?				✓
2. Was the schedule for the work provided to the surveyor?				✓
3. Was the survey completed by a licensed land surveyor?				✓
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-15-11

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI Site: STATEN ISLAND, NY

Boring/Monitoring Well Number: SB023, SB024, SB010, SB025, SB021, SB026

Date: 7-15-11

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?	✓			
2. Was log completed and entries printed legibly on the HTRW Drilling Log?	✓			
3. Was the log scale 1 inch = 1 foot?			✓	
4. Were logs completed in the field (originals)?	✓			
5. Does the log contain the following entries?				
-Unique borehole number	✓			
-Depositional type (alluvium, till, loess, etc.)	✓			
-Depths/Heights recorded in tenths of feet.			✓	
-Soils classified as per USCS and fully described with numerical percents of constituents.	✓			
-Soil moisture content and texture or cohesiveness.	✓			
6. Was general information (top of form HTRW drilling log) completed?	✓			
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?	✓			
8. Were start and completion dates and time included for boring installation activities?	✓			
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?			✓	
10. Were depths at which free water was encountered and stabilized water levels recorded?			✓	
11. Were soil sample depths recorded?	✓			
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?	✓			
13. Were soil sampling methods and recovery recorded?	✓			
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?	✓			
15. Were abbreviations used on the log defined?	✓			
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				✓
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-15-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-15-11

Boring/Monitoring Well Number(s): SB023, SB024, SB010, SB025, SB021, SB026

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
2. Was each decontamination event recorded in the logbook?	✓			
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____

Date: 7-15-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND WAREHOUSE

Date: 7-15-11

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?		✓		

List instruments used at the site: BREATHING ZONE MONITOR, SEE HP RECORDS

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-15-11

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-15-11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	✓			
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?	✓			
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?				✓
13. Was a field sampling form completed?				✓
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				✓
15. Was headspace in sample containers for volatiles eliminated?				✓

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-15-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE .SI

Site: STATEN ISLAND WAREHOUSE

Sampling Date: 7.15-11

Boring/Monitoring Well Number(s): SB023, SB024, SB010, SB025 SB021, SB026

Surface Soil Sample Number(s): N/A

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A
1. Were the samples handled according to the Work Plan and QAPP?	✓			
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	✓			
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				✓
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				✓
6. Was a shipping label attached to the cooler?				✓

DIDNT SHIP

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-15-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?	✓			
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?	✓			
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-15-11

Health and Safety Checklist (Page 1 of 2)

Date: 7-15-11

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND

Briefed on-site Personnel and Work Locations:

STATEN ISLAND WAREHOUSE

Todd Buchanan, Brad Gough, Barry Kinsell, Sam Morton, Howard Hammell, Brian Sweeney, Allen Roos, Alex. Powalka

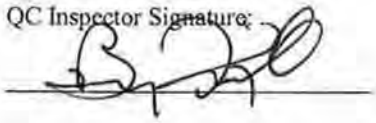
Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?	✓			
5. Are the following training records current and available:	✓			
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓		✓	
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:	✓			
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?			✓	
20. Is the drill rig kill switch clearly marked and easily accessible?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: 

Date: 7-15-11

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND WAREHOUSE

Sampling Date: 7-15-11

Boring/Monitoring Well Number: SB024, SB023, SB010, SB025, SB021, SB026

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?	✓			
3. Were all containers properly labeled and stored?	✓			
4. Were all containers in satisfactory condition?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-15-11

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7/16/11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☐ 70-85 °F ☑ 85 > °F

Wind: ☐ Still ☐ Gusty ☑ Moderate ☐ High; Direction: _____

Humidity: ☐ Dry ☑ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
Soil Sampling	GEO	Hand Augers	4	
Digging Test Pits	GEO	Small Excavator	3	
Digging Test Pits	SAIC	Small Excavator	1	
Soil Scanning	SAIC	RAD meter	1	

Problems Encountered	Corrective Action Taken

Total Daily Hours Worked by all Personnel: 11

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist	✓			✓
Borehole and Core Logging Checklist				✓
Decontamination Checklist	✓			
Instrument Calibration Checklist	✓			
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist	✓			
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist	✓			
Mobilization/Demobilization Checklist				
Building Questionnaire				✓
HTRW Drilling Log Form				✓
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature:

Date: 7-16-11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-16-11

Boring/Monitoring Well Number(s): N/A

Surface Soil Sample Number(s):

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A
1. Were the samples handled according to the Work Plan and QAPP?	✓			
2. Did the samples remain in ice from collection until cooler was taped for shipment?				✓
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?				
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?				
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?				
6. Was a shipping label attached to the cooler?				

RAD SAMPLES

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-16-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-16-11

Boring/Monitoring Well Number(s): N/A

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
2. Was each decontamination event recorded in the logbook?	✓			
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-16-11

Daily Tailgate Meeting Form

Job Name _____ Number _____ Date 7-16-11

Start Time 0730 Completed _____ Site Location STATEN ISLAND WAREHOUSE

Type of Work (General) SAMPLING

SAFETY ISSUES

Tasks (this shift) EXCAVATION, SAMPLING, BRUSH CLEARING

Protective Clothing/Equipment BOOTIES, NITRILE GLOVES, STEEL-TOE BOOTS, SAFETY GLASSES

Chemical Hazards GASOLINE

Physical Hazardous AUGER, EXCAVATOR, YORTO'S, SLIPS, TRIPS, FALLS

Control Methods BREATHING ZONE MONITORS, DOSIMETERS

Special Equipment/Techniques EXCAVATOR

Hazard Communication Overview

Nearest Phone Name/Address (incidents, actions taken, etc.) Cell phones

Hospital Special Topics

ATTENDEES

Print Name	Sign Name
Barry Kinsall	
SAM MARTIN	
BRAD GOULET	
David Lawson	

Meeting conducted by: _____

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7-16-11

GPS / TRIMBLE SURVEY

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?	✓			
2. Was the schedule for the work provided to the surveyor?	✓			
3. Was the survey completed by a licensed land surveyor?				✓
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-16-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND / NY

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?	✓			
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?			✓	
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-16-11

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SJ

Site: STATEN ISLAND, NY

Sampling Date: 7-16-11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	✓			
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?	✓			
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?				✓
13. Was a field sampling form completed?				✓
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?				✓
15. Was headspace in sample containers for volatiles eliminated?				✓

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7-16-11

Health and Safety Checklist (Page 1 of 2)

Date: 7-16-11

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Briefed on-site Personnel and Work Locations: SI WAREHOUSE

BRAD Gough, Barry Kinsall, TODD Buchanan, Sam Martin, DAVID LAWSON

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?	✓			
5. Are the following training records current and available:				
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	/			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	/			
14. Is the following emergency equipment located at each site:				
-Fire extinguisher?	/			
-Eyewash (15 minutes fresh water)?	/			
-Communications (walkie-talkie or phone)?	/			
-First aid kit?	/			
15. Is the buddy system in use?	/			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	/			
17. Is air monitoring equipment being used appropriately?	/			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	/			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?	/			
20. Is the drill rig kill switch clearly marked and easily accessible?	/			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-16-14

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Sampling Date: 7-16-11

Boring/Monitoring Well Number: _____

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?				✓
3. Were all containers properly labeled and stored?				✓
4. Were all containers in satisfactory condition?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

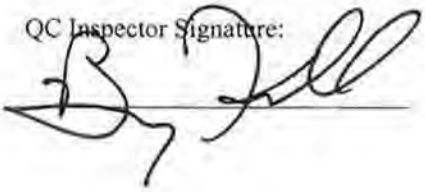
QC Inspector Signature: _____ Date: 7-16-11

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:



Date:

7.16.11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND, NY

Date: 7.16.11

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?	✓			
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?	✓			

List instruments used at the site: BK 7-16-11

Breathing Zone Monitor

SEE HP Records

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7.16.11

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI Site: STATEN ISLAND, NY

Boring/Monitoring Well Number: N/A NO DRILLING

Date: 7-16-11

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?				✓
2. Was log completed and entries printed legibly on the HTRW Drilling Log?				✓
3. Was the log scale 1 inch = 1 foot?				✓
4. Were logs completed in the field (originals)?				✓
5. Does the log contain the following entries?				✓
-Unique borehole number				✓
-Depositional type (alluvium, till, loess, etc.)				✓
-Depths/Heights recorded in tenths of feet.				✓
-Soils classified as per USCS and fully described with numerical percents of constituents.				✓
-Soil moisture content and texture or cohesiveness.				✓
6. Was general information (top of form HTRW drilling log) completed?				✓
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?				✓
8. Were start and completion dates and time included for boring installation activities?				✓
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?				✓
10. Were depths at which free water was encountered and stabilized water levels recorded?				✓
11. Were soil sample depths recorded?				✓
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?				✓
13. Were soil sampling methods and recovery recorded?				✓
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?				✓
15. Were abbreviations used on the log defined?				✓
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				✓
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

Daily Quality Control Report (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND NY WAREHOUSE

Date: 7-17-11

Weather: ☑ Clear ☐ Overcast ☐ Rain ☐ Thunderstorm ☐ Snow

Temperature: ☐ <32 °F ☐ 32-50 °F ☐ 50-70 °F ☐ 70-85 °F ☑ 85 > °F

Wind: ☐ Still ☐ Gusty ☑ Moderate ☐ High; Direction: _____

Humidity: ☑ Dry ☐ Moderate ☐ Humid

Activity	Contractor/ Subcontractor	Equipment	Number of Workers	Total Hours Worked
SOIL SAMPLING	GEO	HAND AUGERS	2	
G/W SAMPLING	GEO	HYDROLAB	2	
RAD WALKOVER	SAIC	MIS RAD METERS	1	
GPS SURVEY	GEO	TRIMBLE	1	
HP SURVEY	SAIC	MISC RAD METERS	1	

Problems Encountered	Corrective Action Taken

Total Daily Hours Worked by all Personnel: 12.5

Daily Quality Control Report (Page 2 of 2)

Safety: Activity Safety Inspection

Safety Deficiencies Observed	Corrective Action Taken
N/A	N/A

Remarks:

Safety Statistics

Number of First Aid Incidents:	0
Number of Recordable Incidents:	0
Number of Lost Time Days:	0

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)].

Forms attached:	Yes	No	N/O	N/A
Daily Tailgate Meeting Form	✓			
Surveying Checklist	✓			
Borehole and Core Logging Checklist				✓
Decontamination Checklist	✓			
Instrument Calibration Checklist	✓			
Sample Collection Checklist	✓			
Packing, Storing, and Shipment of Samples Checklist				
Field Documentation Checklist	✓			
Health and Safety Checklist	✓			
IDW Management Checklist				✓
Mobilization/Demobilization Checklist				
Building Questionnaire				✓
HTRW Drilling Log Form				✓
Field Data Sheet	✓			
Chain of Custody Forms	✓			

The FOM shall complete and sign a DQCR daily, all DQCRs to be submitted at conclusion of field work.

FOM Signature:

Date: 7-17-11

Daily Tailgate Meeting Form

Job Name STATEN ISLAND WAREHOUSE Number SI Date 7/17/11

Start Time 0705 Completed 0714 Site Location STATEN ISLAND WAREHOUSE

Type of Work (General) Sampling / DATA Collection

SAFETY ISSUES

Tasks (this shift) SOIL/GW SAMPLING, EXCAVATION, Gamma Walkover.

Protective Clothing/Equipment HARD HAT, STEEL-TOE, NITRILE GLOVES, TYVEK, SAFETY GLASSES

Chemical Hazards GASOLINE

Physical Hazardous PINCH POINTS, RAD, HEATSTRESS, DEHYDRATIONS

Control Methods BZ MONITORS, DOSIMETERS, Boundaries

Special Equipment/Techniques

Hazard Communication Overview

Nearest Phone CELL PHONES

Name/Address

(incidents, actions taken, etc.)

Hospital

Special Topics

ATTENDEES

Print Name	Sign Name
Barry Kinsall	[signature]
BRAD GOUGH	[signature]
DAVID LAWSON	[signature]
Todd Buchanan	[signature]
SAM MARTIN	[signature]
David Hays	[signature]
ANDREW	[signature]
Helen Edge	[signature]

Meeting conducted by: [signature]

Surveying Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND NY WAREHOUSE

Date: 7-17-11

Complete one time for project. Answer each question by checking the appropriate column [yes, no, not observed (N/O) or not applicable (N/A)]. If a "No" is checked, provide an explanation on the Noncompliance and Corrective Action form.

Surveying	Yes	No	N/O	N/A
1. Was the Scope of Work reviewed with the surveyor?	✓			
2. Was the schedule for the work provided to the surveyor?	✓			
3. Was the survey completed by a licensed land surveyor?		✓		
4. Were locations surveyed for horizontal and vertical control?				✓
5. Were conditions measured to the closest 0.1 feet and elevations measured to the closest 0.01 feet?				✓
6. Was the survey marker and TOC surveyed for each monitoring well?				✓
7. Were surveyor's closure calculations reviewed?				✓
8. Was surveyor interviewed by QC Inspector before leaving the Site?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-17-11

TRIMBLE GPS

Borehole and Core Logging Checklist (Page 1 of 2)

Project Name/Number: STATEN ISLAND WAREHOUSE Site: SI

Boring/Monitoring Well Number: N/A

Date: 7-17-11 N/A

Complete for each boring log. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a No is checked, provide an explanation on the noncompliance and Corrective Actions form.

Borehole Logging	Yes	No	N/O	N/A
1. Was boring logged by a geologist, geological engineer, or other qualified personnel?				✓
2. Was log completed and entries printed legibly on the HTRW Drilling Log?				✓
3. Was the log scale 1 inch = 1 foot?				✓
4. Were logs completed in the field (originals)?				✓
5. Does the log contain the following entries?				✓
-Unique borehole number				✓
-Depositional type (alluvium, till, loess, etc.)				✓
-Depths/Heights recorded in tenths of feet.				✓
-Soils classified as per USCS and fully described with numerical percents of constituents.				✓
-Soil moisture content and texture or cohesiveness.				✓
6. Was general information (top of form HTRW drilling log) completed?				✓
7. Were special conditions (i.e. intervals of hole instability) and their resolution recorded?				✓
8. Were start and completion dates and time included for boring installation activities?				✓
9. Were boundaries between soils noted (solid line at appropriate depth or dashed line if transitional or if observed in cuttings?				✓
10. Were depths at which free water was encountered and stabilized water levels recorded?				✓
11. Were soil sample depths recorded?				✓
12. If changes in drilling or sampling methods or equipment and changes in sample or borehole diameter recorded?				✓
13. Were soil sampling methods and recovery recorded?				✓
14. Was observed evidence of contamination in samples, cuttings, or drilling fluids recorded?				✓
15. Were abbreviations used on the log defined?				✓
16. Were drilling fluid losses including depth, rate, and volume in the subsurface recorded?				✓
Borehole Logging	Yes	No	N/O	N/A
17. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓
18. Were drilling pressures and driller's comments recorded?				✓
19. Was total depth recorded and marked with a double line?				✓
20. Was monitoring well diagram completed and attached to log?				✓
21. Was drilling fluid described (water source, additive brand, product name, and mixture)?				✓

N/A

Borehole and Core Logging Checklist (Page 2 of 2)

Core Logging	Yes	No	N/O	N/A
22. Was rock described using standard geologic nomenclature; e.g. rock type, relative hardness, density, texture, color, weathering, bedding, fossils, crystals, and open or closed fractures, joints, bedding planes, or cavities and filling materials?				✓
23. Was start and stop time of each core run recorded?				✓
24. Were depths to top and bottom of each core run recorded?				✓
25. Was length of core recovered in each core run recorded?				✓
26. Were the size and type of coring bit and barrel recorded?				✓
27. Was the depth to the bottom of the hole measured after the core was removed for each core run?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-17-11

Decontamination Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND NY WAREHOUSE

Sampling Date: 7-17-11

Boring/Monitoring Well Number(s): SB05, SB010, SB016, SB023, SB026

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

Equipment	Yes	No	N/O	N/A
1. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓	BK 7-17-11		✓
2. Was each decontamination event recorded in the logbook?	✓			✓
3. Was IDW (decontamination water) handled in accordance with the approved work plan?	✓			

Corrective Actions: USED DISPOSABLE TUBING

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: BK

Date: 7-17-11

Instrument Calibration Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: 7-17-11 STATEN ISLAND NY WAREHOUSE

Date: 7-17-11

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Instrumental Calibration	Yes	No	N/O	N/A
1. Were all field instruments calibrated properly?		✓		
2. Were all field instruments calibrated on the schedule in the Work Plan/SSHP?	✓			
3. Did the Field Calibration Forms list all calibration events?	✓			

List instruments used at the site: PROBLEM on Both HYDROLABS CALIBRATION. TURBITY OFF.

HYDROLAB

Breathing Zone Monitor SEE HP Records

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-17-11

QUANTA DAILY CALIBRATION

Hydrolab #: GEO-461-1, GEO-461-2, GEO-461-3 (4616)

By: TC JH BG MC JB VM RT JB

Date: 7-17-11

84

pH CALIBRATION

Buffer +/- 1 SU	Lot #	Exp. Date	Vendor	Time	Temp (Celsius)	pH	Adj. To
pH 4	110263	01-13	Fisher	0750	27.03	4.04	4
pH 7	111103	03-13	Fisher	0748	26.10	7.22	7
pH 10	CHECK						

D.O. AIR CALIBRATION

Solution Temp (C): 25.69 Local B.P.: 766 mm of Hg

% Saturation: 100 % % Saturation (fixed): 100%

DO mg/l Reading (+/- 0.2 mg/l): 7.27 @ 26.16 Deg Celsius

Does reading meet DO Saturation Values acceptance criteria? X Yes ____ No

If No, Recalibrate or check Operations Manual for maintenance.

CONDUCTIVITY CALIBRATION

Standard Value:
1412 (umhos) 1.412 (mS) Lot #: 2105404 Exp: 11-12 Manufacturer: RICCA

Temperature(C): 26.57 Conductivity(+/- 20 umhos): 976 Adjusted To: 1000

TURBIDITY CALIBRATION PERFORMANCE CHECK

4-Beam Turbidity Quick-Cal Cube QCC#:91191

GEO 461-1=75.0 +/- 20%
GEO 461-2=77.9 +/- 20%
GEO 461-3=77.0 +/- 20%

2pt Cal. Perform
Zero Solution -
100NTU Solution -
Calibrated

Reading 82.6 NTU

X Reading is within acceptance criteria of the Quick-Cal Cube for the instrument to be used.

____ Reading is not within acceptance criteria of the Quick-Cal Cube for the instrument to be used. If reading is not within the Quick-Cal Cube acceptance criteria, perform primary calibration according to operational manual.

ORP Calibration

ZoBell Solution
Lot # 2105408 Expiration Date: 02-12

ZoBell Solution's ORP Value: 413 +/- 10 mV @ 27.55 Deg C

7-17-11

Reading Prior to Calibration: 427.5 mV @ 27.12 Deg C

Reading After Calibration: 422 +/- 10 mV @ 27.00 Deg C

Comments:

Sample Collection Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND WAREHOUSE

Sampling Date: 7-17-11

Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If "no" is checked, provide an explanation on the form.

General	Yes	No	N/O	N/A
1. Were new protective gloves worn between sampling locations and/or intervals?	✓			
2. Were samples collected using methods described in the Work Plan?	✓			
3. Were sample containers filled in the correct order?	✓			
4. Was sampling equipment appropriate for the purpose and site conditions?	✓			
5. Was sampling equipment decontaminated or disposable/dedicated equipment used between each sample?	✓			
6. Were procedures for collecting QA/QC samples followed as per the Work Plan?	✓			
7. Were sampling locations properly identified by land survey or GPS locator?	✓			
8. Were bottles adequately protected from contamination prior to sample identification?	✓			

Soil samples	Yes	No	N/O	N/A
9. Were samples collected according to the Work Plan?	✓			
10. Was a field sampling form completed?	✓			
11. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			

Water samples	Yes	No	N/O	N/A
12. Were samples collected according to the Work Plan?	✓			
13. Was a field sampling form completed?	✓			
14. Were the analytical parameters and QA/QC samples recorded on the Field Data Sheet?	✓			
15. Was headspace in sample containers for volatiles eliminated?	N/A			

Corrective Actions: _____

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: _____ Date: 7/17/11

Packing, Storing, and Shipment of Samples Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND "N" WAREHOUSE

Sampling Date: 7-17-11

Boring/Monitoring Well Number(s): Wells (Temp)
SB05, SB010, SB016, SB023, SB026

Surface Soil Sample Number(s): SS037, SS036, SS038, SS042, SS039, SS039MS, SS039MSD, SS045, SS044, SS043, SS041, SS040, SS Dup-005

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Packing, Storing, and Shipment of Samples	Yes	No	N/O	N/A
1. Were the samples handled according to the Work Plan and QAPP?	✓			
2. Did the samples remain in ice from collection until cooler was taped for shipment?	✓			
3. Were Chain of Custody forms filled out accurately and completely, including project name and number, sampling date, sampling time, analytical parameters, preservatives, size and number of containers for each analytical parameter, and media sampled?	✓			
4. Were Chain of Custody forms signed and dated by the preparer, placed in water resistant bagging, and included in the cooler?	✓			
5. Were signed and dated custody seals properly placed on the cooler and the cooler sealed with strapping tape?	✓			
6. Was a shipping label attached to the cooler?	✓			

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-17-11

Field Documentation Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND WAREHOUSE

Complete daily. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Field Documentation	Yes	No	N/O	N/A
1. Was all original field data, except boring logs, recorded in black indelible ink?	✓			
2. Were logbooks filled out properly, accurately recounting the day's events?	✓			
3. Were all field forms completed and information accurately recorded:	✓			
-Daily Quality Control Report?	✓			
-Daily Tailgate Meeting Form?	✓			
-HTRW Drilling Log Form?				✓
-Field Log Books?	✓			
-Project Photograph Log (in Log Book)?	✓			
-Field Data Sheet?	✓			
-Chain of Custody Forms?	✓			

List additional field forms completed:

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date: 7-17-11

Health and Safety Checklist (Page 1 of 2)

Date: 7-17-11

Project Name/Number: SI RI Sampling

Site: STATEN ISLAND WAREHOUSE

Briefed on-site Personnel and Work Locations: DAVID LARSON, BRAD Gough, TOM Buchanan, Barry Kinsell, Sam Martin

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Documentation	Yes	No	N/O	N/A
1. Is the Site Health and Safely Plan (SSHP) on the Site?	✓			
2. Has the SSHP been reviewed, dated, and signed within the last year?	✓			
3. Are the tasks being completed reflected in the hazard task analysis?	✓			
4. Is there a written acknowledgement that all employees, including subcontractors, have been briefed and read the SSHP?	✓			
5. Are the following training records current and available:	✓			
-40-hour HAZWOPER/8-hour refresher for ALL employees and subcontractors?	✓			
-24-hour Supervised Field Experience?	✓			
-CPR/First Aid?	✓			
-8-hour Hazardous Waste Site Supervisor, and refresher?	✓			
-Initial Site Health and Safety Briefing?	✓			
-Site Health and Safety Briefing for each location or site?	✓			
6. Are emergency maps posted at the site and maintained in vehicles?	✓			
7. Were daily safety checklists completed and fire extinguishers checked?	✓			
8. Were applicable Material Safety Data Sheets at the Site?	✓			
9. Are documents that indicate employees and subcontractors are medically fit to work and wear the required personal protective equipment current and available?	✓			
10. Were daily air monitoring equipment calibrations recorded?	✓			
11. Are respirator fit test records available and current?				✓

Health and Safety Checklist (Page 1 of 2)

Observations	Yes	No	N/O	N/A
12. Are exclusion zones and contaminant reduction zones adequately marked?	✓			
13. Is required personal protective equipment available and correctly used, maintained, and stored?	✓			
14. Is the following emergency equipment located at each site:	✓			
-Fire extinguisher?	✓			
-Eyewash (15 minutes fresh water)?	✓			
-Communications (walkie-talkie or phone)?	✓			
-First aid kit?	✓			
15. Is the buddy system in use?	✓			
16. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while working in the exclusion zone?	✓			
17. Is air monitoring equipment being used appropriately?	✓			
18. Is the site organized to allow the use of lifting equipment, and avoid tripping hazards and spreading contamination?	✓			
19. Was a random employee asked if he/she knew site hazard and emergency procedures?			✓	
20. Is the drill rig kill switch clearly marked and easily accessible?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature:

Date:

7-17-11

Investigation-Derived Waste Management Checklist (Page 1 of 1)

Project Name/Number: STATEN ISLAND WAREHOUSE SI

Site: STATEN ISLAND NY WAREHOUSE

Sampling Date: 7-17-11

Boring/Monitoring Well Number: SB05, SB09, SB016, SB023, SB026

Complete weekly for each site. Answer each question by checking the appropriate column [yes, no, not observed (N/O), or not applicable (N/A)]. If a "no" is checked, provide an explanation on the Noncompliance or Corrective Actions form.

Investigation-Derived Waste Management	Yes	No	N/O	N/A
1. Was all IDW managed according to the Waste Management Plan?	✓			
2. Were soil cuttings, drilling fluids, decontamination water, development water, and PPE containerized?		✓		
3. Were all containers properly labeled and stored?				✓
4. Were all containers in satisfactory condition?				✓

The QC inspector shall sign this checklist upon completion of all items on the checklist.

QC Inspector Signature: [signature]

Date: 7-17-11

INSTRUMENTATION QC CHECK LOG **METER :** 44-10B **DATE (MO/YR):** July 2011

Source		Acceptance Criteria					Model	Number	Cal. Due
Type	Cs-137	Bkgrd. QC (cpm) range		Source QC (cpm) range		Meter	2221	178108	4/1/2012
Number	SN-5780-07	6,106 to 10,803		225,455 to 338,182		Detector	44-10B	187432	4/1/2012
Date	Time	Pre-use Bkg cpm	Post Bkg cpm[1]	Pre-use Source cpm	Post Source cpm[1]	Bat. Check Sat/Unsat	QC[1] Sat/Unsat	Pre-use HPT Initial	Post HPT Initial
7-11-11	1236	8954	8868	280725	288807	SAT	SAT	R	R
7-12-11	0700	6585	6867	280131	282666	SAT	SAT	R	R
7-13-11	0645	6801	6961	282173	283218	SAT	SAT	R	R
7-14-11	0630	9491	9262	286901	289101	SAT	SAT	R	R
7-15-11	0630	9108	NA	286282	NA	SAT	SAT	R	NA
7-16-11	0630	9756	NA	285899	NA	SAT	SAT	R	NA
7-17-11	0630	9137	9293	290091	286769	SAT	SAT	R	R

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in.

Reviewed By : _____ (RPM/Designee) **Date :** 7/24/11

Initial Instrument Check In

Meter Number:	178108	Detector Number:	187432
Meter Model:	2221	Detector Model:	44-10B
Cal. Due:	4/1/2012	Cal. Due:	4/1/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	#DIV/0!		
ALPHA			Average Source (GCPM):	#DIV/0!		
ALPHA			Average Net Source (NCPM):	#DIV/0!		
ALPHA			Source Range (GCPM):	#DIV/0!	to	#DIV/0!
ALPHA			Background Range (CPM):	#DIV/0!	to	#DIV/0!
ALPHA			Determined Efficiency:	#DIV/0!		
ALPHA						
ALPHA			20% of Bkg.	#DIV/0!		
ALPHA			1 Standard Deviation of Bkg.	#DIV/0!		
ALPHA			3 Standard Deviations of Bkg.	#DIV/0!		
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	Cs-137	Threshold:	10		
BETA	Source #:	SN-5780-07	High Voltage:	1100		
BETA	Source Activity:	0.91 uCi				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	8,455		
BETA	281,941	8872	Average Source (GCPM):	281,818		
BETA	281,661	8876	Average Net Source (NCPM):	273,364		
BETA	280,752	8598	Source Range (GCPM):	225,455	to	338,182
BETA	281,168	7348	Background Range (CPM):	6,106	to	10,803
BETA	281,285	7038	Determined Efficiency:	NA		
BETA	282,464	7758				
BETA	281,701	9100	20% of Bkg.	1691		
BETA	282,722	9311	1 Standard Deviation of Bkg.	783		
BETA	281,747	8778	3 Standard Deviations of Bkg.	2348		
BETA	282,742	8869				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

Designer and Manufacturer of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SAIC ORDER NO. 20172746/361507

1. Ludlum Measurements, Inc. Model 2221 Serial No. 178108
2. Ludlum Measurements, Inc. Model 44-10 Serial No. PR 187432

Cal. Date 1-Apr-11 Cal Due Date 1-Apr-12 Cal. Interval 1 Year Meterface 202-159

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 32 % Alt 694.8 mm Hg

☐ New Instrument Instrument Received ☐ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☑ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☐ Background Subtract ☑ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☑ Window Operation ☑ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 4.4 VDC
☑ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set See Comments V Input Sens. See Comments mV Det. Oper See Comments V at See Comments mV Threshold Dial Ratio 100 = 10 mV

☑ HV Readout (2 points) Ref./Inst. 500 / 495 V Ref./Inst. 2000 / 1995 V

COMMENTS:

	Peak Settings	Gross Counts
High Voltage:	904v	1100v
Threshold Setting:	642	100=10mv
Window Setting:	40	n/a
Window Position:	"in"	"out"
resolution for Cs137:	11.93%	n/a

Firmware:261027
Calibration performed with 5' C cable.
Overload checked but not set.
High Voltage set with 44-10 connected. currently set for Gross counts.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1K	400kcpm	N/A	400
x1K	100kcpm		100
x100	40kcpm		400
x100	10kcpm		100
x10	4kcpm		400
x10	1kcpm		100
x1	400cpm		400
x1	100cpm		100

*Uncertainty within ± 10% C.F. within ± 20%

ALL Range(s) Calibrated Electronically

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout	400kcpm	N/A	39959 (0)
	40kcpm		3995
	4kcpm		400
	400cpm		40
	40cpm		4

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Log Scale	500kcpm	N/A	500K
	50kcpm		50K
	5kcpm		5K
	500cpm		500
	50cpm		50

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No LO-1963

Reference Instruments and/or Sources: ☐ 73410 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646 ☐ 70897
Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☑ Other Am241:0.83uci

500 S/N 94940 ☐ Oscilloscope S/N ☑ Multimeter S/N 78401031

Calibrated By: Date 1-APR-11

Reviewed By: Date 1April11

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test ☐ Failed:

Designer and Manufacturer
of
Scientific and Industrial
Instruments

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

Bench Test Data For Detector

Detector 44-10 Serial No. PR187432

Customer SAIC Order #. 20172746/361507

Counter 2221 Serial No. 178108 Counter Input Sensitivity 10 mV

Count Time 6 Sec. Distance Source to Detector Surface

Other H.V. Set with 44-10 Connected.

High Voltage	Background	Isotope Am 241 Size ~0.83uC	Isotope ____ Size ____	Isotope ____ Size ____	Isotope ____ Size ____
900	639	639			
950	674	4757			
1000	731	11667			
1050	785	12399			
1100	787	12395			
1150	781	12487			
1200	803	12888			
1250	818	14393			

Signature _____ Date 1-APR-11

INSTRUMENTATION QC CHECK LOG

METER : 44-9 DATE (MO/YR) : July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
197790	3/28/2012	Alpha	Beta	Alpha	Beta	N/A	N/A	N/A	N/A
Detector		N/A	20	N/A	2366	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
212132	3/28/2012	N/A	75	N/A	3549	SrY - 90	SN-5781-07	18.9%	48

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm)		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	NA	51	NA	3091	SAT	SAT	R	
7-12-11	0700	NA	50	NA	2928	SAT	SAT	R	
7-13-11	0645	NA	47	NA	2900	SAT	SAT	R	
7-14-11	0630	NA	49	NA	3028	SAT	SAT	R	
7-15-11	0630	NA	63	NA	2848	SAT	SAT	R	
7-16-11	0630	NA	41	NA	2943	SAT	SAT	R	
7-17-11	0630	NA	44	NA	3043	SAT	SAT	R	
					N/A				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : Rod C (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	197790	Detector Number:	212132
Meter Model:	2221	Detector Model:	44-9
Cal. Due:	3/28/2012	Cal. Due:	3/28/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):			
ALPHA			Average Source (GCPM):			
ALPHA			Average Net Source (NCPM):			
ALPHA			Source Range (GCPM):		to	
ALPHA			Background Range (CPM):		to	
ALPHA			Determined Efficiency:			
ALPHA						
ALPHA			20% of Bkg.			
ALPHA			1 Standard Deviation of Bkg.			
ALPHA			3 Standard Deviations of Bkg.			
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	55		
BETA	Source #:	SN-5781-07	High Voltage:	900		
BETA	Source Activity:	15,362				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	48		
BETA	2,943	41	Average Source (GCPM):	2,957		
BETA	2,942	45	Average Net Source (NCPM):	2,910		
BETA	2,963	52	Source Range (GCPM):	2,366	to	3,549
BETA	2,906	48	Background Range (CPM):	20	to	75
BETA	2,969	41	Determined Efficiency:	18.9%		
BETA	2,875	39				
BETA	2,965	53	20% of Bkg.	10		
BETA	2,969	64	1 Standard Deviation of Bkg.	9		
BETA	3,079	58	3 Standard Deviations of Bkg.	27		
BETA	2,961	35				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

ALPHA

For Portable Counters:

Detector Area (cm2) =	15.5
Efficiency (%) =	
Surface Efficiency =	1.00
Background (cpm) =	
Background count time =	1.0
Gross count time =	
MDA (dpm/100cm2) =	#DIV/0!

NCD = < #DIV/0!

BETA

For Portable Counters:

Detector Area (cm2) =	15.5
Efficiency (%) =	0.1894
Surface Efficeincy =	1.00
Background (cpm) =	47.6
Background count time =	1.0
Gross count time =	1.0
MDA (dpm/100cm2) =	1195.6

NCD = < 82.7

Beta Calibration Report

Date Calibrated: 03/29/2011 1:30:35 PM Order Number: SAIC HARRISBURG20110329-002

Technician: B. French Customer: SAIC HARRISBURG

pair Instrument

Serial Number: 212132 Manufacturer: Ludlum Model: 44-9 Last Calibrated: 4/1/2010

Reason for recalibration: Due for Calibration

Calibration Instrument

Serial Number: 197790 Inst. Type: 2221 Calibration Due: 3/28/2012

Calibration Sources

4π	Beta Source ID: SAIC-0054	Isotope: SrY-90	Current Activity:	13009.13dpm	Assay Date: 11/15/2000
2π	Beta Source ID: SAIC-0054	Isotope: SrY-90	Current Activity:	9036.28cpm	Assay Date: 11/15/2000

Beta as Found	**Beta as Left**
Background 1 min. counts NA	Background 1 min. counts 30
Source 1 min. counts NA	Source 1 min. counts 3104
4π % efficiency: 0	4π % efficiency: 23.63
2π % efficiency: 0	2π % efficiency: 34.02

Beta Threshold: 55mV High Voltage: 900V Next Calibration Due: 3/28/2012

Comments

Performed By: B. French Date: 3/29/11

Reviewed By: [signature] Date: 3/30/11

Scaler/Ratemeter Calibration Report

Date Calibrated: 03/29/2011 1:28:11 PM Order Number: SAIC HARRISBURG20110329-001

Technician: B. French Customer: SAIC HARRISBURG

Temperature (F): 70 Humidity (%): 24 Altitude (asl): 660 Barametric Pressure ("Hg): 29.56

Repair Instrument

Serial Number: 197790 Manufacturer: Ludlum Model: 2221 Meterface: 202-159

Received: Within 10%

Last Calibrated: 4/1/2010 Calibration Interval: 1 yr. Next Calibration Due: 3/28/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [x] F/S Resp. OK
- [x] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 900 V at 55 mV — Det. Op. 900 V at 55 mV — Threshold Dial ratio: 100 = 10
- [x] HV readout — **Ref. 1** 499 Volts **Inst. 1** 500 Volts — **Ref. 2** 2002 Volts **Inst. 2** 2000 Volts
- [x] Calibrated in accordance with ANSI N323A-1997 and the manufacturers procedure

CTV* Analog Reading

Multiplier	Ref. Cal Poin	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter scr. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other scr. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40011 (0) cpm	40013 (0) cpm
40 K cpm	4002 (0) cpm	4001 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

CTV* Log Scale

Reference Pt.	Inst. as Found	Inst. as Left
500 K cpm	500 K cpm	500 K cpm
50 K cpm	50 K cpm	50 K cpm
5 K cpm	5 K cpm	5 K cpm
500 cpm	500 cpm	500 cpm
50 cpm	50 cpm	50 cpm

*** Conventionally True Value** **** Uncertainty within +/- 10%** **All range(s) calibrated electronically**

Comments

Performed By: B. French Date: 3/29/11

Reviewed By: [signature] Date: 3/30/11

ASST #16131

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Gamma Standard

S.O.# 6620
P.O.# 20077000355

Description of Standard:

Model No. CS-7D Serial No. 5780-07 Isotope Cs-137

The source of gamma radiation is mounted on a 5.08 cm diameter PLASTIC disc, 3 mm thick and sealed in a PLASTIC RESIN.

Measurement Method:

The gamma ray emission rate was compared with a similar standard, which was calibrated by NIST S/N 2752-91. The comparison of relative gama ray emission rates was accomplished using a high resolution gamma-ray detector (nominal active volume 100 cm³) and a multichannel pulse height analyzer.

Measurement Result:

The gamma ray activity of the standard on 4-17-2007 was 1.0 µCi. The uncertainty of the measurement is 2.2 %, which is the sum of the uncertainty assigned to the NIST reference (2.4 %), random counting error at the 99% confidence level, and the estimated upper limit of systematic errors.

Calibrated by: ART REUST Reviewed by:

Calibration Technician: Art Reust for Q.A. Manager: Karen Schroeder

Calibration Date: 4-17-2007 Reviewed Date: 4-18-07

7021 Pan American Freeway NE
Albuquerque, New Mexico 87109-4238
(505) 262-2694 Fax (505) 262-2698
www.eberlineservices.com

16/32

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Electroplated Alpha Standard

S.O.# 6620
P.O.# 2007000355

Description of Standard:

Model No. DNS-4 Serial No. 5777-07 Isotope Th-230

Electroplated on polished SS disc, 0.79 mm thick.

Total diameter of 2.23 cm and an active diameter of 1.91 cm.

The radioactive material is permanently fixed to the disc by heat treatment without any covering over the active surface.

Measurement Method:

The 2pi alpha emission rate was measured using an internal gas flow proportional chamber. Absolute counting of alpha particles emitted in the hemisphere above the active surface was verified by counting above, below, and at the operative voltage. The calibration is traceable to NIST by reference to an NIST calibrated alpha source S/N 4001-02.

Measurement Result:

The observed alpha particles emitted from the surface of the disc per minute (cpm) on the calibration date was:

15,800 ± 475

The total disintegration rate (dpm) assuming 1.5% backscatter of alpha particles from the surface of the disc, was:

31,200 ± 936 (0.0141 μCi)

The uncertainty of the measurement is 3 %, which is the sum of random counting error at the 99% confidence level, and the estimated upper limit of systematic error in this measurement.

Calibrated by: ART REUST Reviewed by: Steven Sanchez

Calibration Technician: Art Reust for Q.A. Manager: Karen Wehrenberg

Calibration Date: 4-17-2007 Reviewed Date: 4-18-2007

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ASST #16134

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Electroplated Beta Standard

S.O.# 6620
P.O.# 2007000355

Description of Standard:

Model No. DNS-14 Serial No. 5781-07 Isotope SrY-90

Electroplated on polished Ni disc, 0.79 mm thick.

Total diameter of 4.77 cm and an active diameter of 4.45 cm.

The radioactive material is permanently fixed to the disc by heat treatment without any covering over the active surface.

Measurement Method:

The 2pi beta emission rate was measured using an internal gas flow proportional chamber. Absolute counting of beta particles emitted in the hemisphere above the active surface was verified by counting above, below, and at the operative voltage. The calibration is traceable to NIST by reference to an NIST calibrated beta source S/N 4002-02.

Measurement Result:

The observed beta count rate from the surface of the disc per minute (cpm) on the calibration date was:

11,900 ± 357

The total disintegration rate (dpm) assuming 40 % backscatter of beta particles from the surface of the disc, was:

17,000 ± 511 (0.00768 μCi)

The uncertainty of the measurement is 3 %, which is the sum of random counting error at the 99% confidence level, and the estimated upper limit of systematic error in this measurement.

Calibrated by: ART REUST Reviewed by:

Calibration Technician: Art Reust for Q.A. Manager:

Calibration Date: 4-17-2007 Reviewed Date: 4-18-2007

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Albuquerque, New Mexico 87109-4238
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INSTRUMENTATION QC CHECK LOG

METER : 43-89C

DATE (MO/YR) : July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
202463	6/1/2012	Alpha	Beta	Alpha	Beta	Th - 230	SN-5777-07	14.0%	0.6
Detector		0.0	255	3506	1923	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
199349	6/1/2012	1.2	323	5259	2884	SrY - 90	SN-5781-07	13.8%	289

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	0.4	266	4613	2349	SAT	SAT	R	
7-12-11	0700	0.6	259	4589	2423	SAT	SAT	R	
7-13-11	0645	0.6	265	4365	2322	SAT	SAT	R	
7-14-11	0630	0.4	261	4479	2524	SAT	SAT	R	
7-15-11	0630	0.3	257	4326	2569	SAT	SAT	R	
7-16-11	0630	0.5	260	4313	2496	SAT	SAT	R	
7-17-11	0630	1.0	257	4577	2653	SAT	SAT	R	
					NA				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By: Jenni R Chambers (RPM/Designee) Date : 7/24/11

Initial Instrument Check In (4 Pi Eff.)

Meter Number:	202463	Detector Number:	199349
Meter Model:	2360	Detector Model:	43-89C
Cal. Due:	6/1/2012	Cal. Due:	6/1/2012

ALPHA	Source Type:	Th - 230	Threshold:	120		
ALPHA	Source #:	SN-5777-07	High Voltage:	535		
ALPHA	Source Activity:	31,199				
ALPHA	Source count time:	1	(min) Background count time:	10	(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	0.6		
ALPHA	4,038	0.7	Average Source (GCPM):	4,383		
ALPHA	4,048	0.7	Average Net Source (NCPM):	4,382		
ALPHA	4,011	0.3	Source Range (GCPM):	3,506	to	5,259
ALPHA	4,020	1	Background Range (CPM):	0.0	to	1.2
ALPHA	4,082	0.5	Determined Efficiency:	14.0%		
ALPHA	4,613	0.5				
ALPHA	4,774	0.5	20% of Bkg.	0.1		
ALPHA	4,802	0.4	1 Standard Deviation of Bkg.	0.2		
ALPHA	4,730	0.5	3 Standard Deviations of Bkg.	0.6		
ALPHA	4,710	0.6				

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	120		
BETA	Source #:	SN-5781-07	High Voltage:	535		
BETA	Source Activity:	15,362				
BETA	Source count time:	1	(min) Background count time:	10	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	289		
BETA	2,175	303	Average Source (GCPM):	2,403		
BETA	2,239	294	Average Net Source (NCPM):	2,115		
BETA	2,292	288	Source Range (GCPM):	1,923	to	2,884
BETA	2,236	310	Background Range (CPM):	255	to	323
BETA	2,373	293	Determined Efficiency:	13.8%		
BETA	2,389	282				
BETA	2,465	283	20% of Bkg.	58		
BETA	2,653	282	1 Standard Deviation of Bkg.	11		
BETA	2,551	274	3 Standard Deviations of Bkg.	34		
BETA	2,660	279				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

4 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1405
Surface Efficiency =	1.00
Background (cpm) =	0.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	31.9

NCD = < 6.2

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1377
Surface Efficeincy =	1.00
Background (cpm) =	288.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	358.1

NCD = < 350.2

2 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	2.8001
Surface Efficiency =	1.00
Background (cpm) =	0.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	1.6

NCD = < 6.2

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.2974
Surface Efficeincy =	1.00
Background (cpm) =	288.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	165.7

NCD = < 350.2

Alpha Beta Calibration Report

C

Date Calibrated: 06/02/2011 10:23:11 AM Order Number: SAIC HARRISBURG20110602-002

echnician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 199349 Manufacturer: Ludlum Model: 43-89 Last Calibrated: 4/19/2010

Reason for recalibration: Due for Calibration

Calibration Instrument

Light Leak Test: Sat

Serial Number: 202463 Inst. Type: 2360 Calibration Due: 6/1/2012

Calibration Sources

4π	Alpha Source ID:	SAIC-0053	Isotope:	Th-230	Current Activity:	20298.03dpm	Assay Date:	11/6/2000
	Beta Source ID:	SAIC-0054	Isotope:	SrY-90	Current Activity:	12953.47dpm	Assay Date:	11/15/2000
2π	Alpha Source ID:	SAIC-0053	Isotope:	Th-230	Current Activity:	10099.02dpm	Assay Date:	11/6/2000
	Beta Source ID:	SAIC-0054	Isotope:	SrY-90	Current Activity:	8997.62dpm	Assay Date:	11/15/2000

Alpha as Found	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts NA	Background 1 min. counts NA	Background 1 min. counts 1	Background 1 min. counts 203
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 2884	Source 1 min. counts 3137
4π % efficiency: 0 2π % efficiency: 0	4π % efficiency: 0 2π % efficiency: 0	4π % efficiency: 14.2 2π % efficiency: 28.55	4π % efficiency: 22.65 2π % efficiency: 32.61

Alpha Threshold:	120 mV	High Voltage:	535 V	
Beta Threshold:	3.5 mV	Beta Window:	30 mV	Next Calibration Due: 6/1/2012

Comments

HV set with probe attached

Performed By: [signature] Date: 6/2/11

iewed By [signature] Date: 6-2-11

Scaler/Ratemeter Calibration Report

Date Calibrated: 06/02/2011 10:18:57 AM Order Number: SAIC HARRISBURG20110602-001
Customer: SAIC HARRISBURG
Technician: B. French
Temperature (F): 72 Humidity (%): 31 Altitude (asl): 660 Barametric Pressure ("Hg): 29.53

Repair Instrument

Serial Number: 202463 Manufacturer: Ludlum Model: 2360 Meterface: 202-855
Received: Within 10%
Last Calibrated: 4/19/2010 Calibration Interval: 1 yr. Next Calibration Due: 6/1/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [x] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set 535 V at (see comments)mV Det. Op. 535 V at (see comments)mV Threshold Dial ratio: N/A
- [x] HV readout **Ref. 1** 500Volts **Inst. 1** 500Volts **Ref. 2** 2005Volts **Inst. 2** 2000 Volts
- [x] Calibrated in accordance with ANSI N323-1997 and the manufacturer's procedure

CTV* Analog Reading

Multiplier	Ref. Cal Point	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other ser. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40007 (0) cpm	40025 (0) cpm
40 K cpm	4002 (0) cpm	4001 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

Comments

For input sensitivities, see detector calibration form

*** Conventionally True Value** **** Uncertainty within +/- 10%** **All range(s) calibrated electronically**

Performed By: [signature] Date: 6/2/11
Reviewed By [signature] Date: 6-2-11

Plateau Calibration

Model # 43-89
Serial # 199349
Alpha Source I D SAIC-0053
Beta Source I D SAIC-0054

Alpha Input Senitivity 120mV
Beta Input Senitivity 3 5mV
Beta Window 30mV
Distance Source to Detector source holder

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta
400			/	/
425			/	/
450			/	/
475			/	/
500	0	89	1938 / 567	1928 / 2
525	1	167	2717 / 600	2876 / 1
550	1	248	3141 / 848	3629 / 2
575	1	300	3400 / 1579	4405 / 3
600			/	/
625			/	/
650			/	/
675			/	/
700			/	/
725			/	/
750			/	/
775			/	/
800			/	/
825			/	/
850			/	/
875			/	/
900			/	/
925			/	/
950			/	/
975			/	/
1000			/	/
1025			/	/
1050			/	/
1075			/	/
1100			/	/
1125			/	/
1150			/	/
1175			/	/
1200			/	/
1225			/	/
1250			/	/
1275			/	/
1300			/	/
1325			/	/
1350			/	/
1375			/	/
1400			/	/

High Voltage Set 535V *HV set with probe attached
Reviewed By [signature] Date: 6-2-11

@535

Background
Alpha - 1
Beta - 203

Source
Alpha - 2884/689
Beta - 3137/2

INSTRUMENTATION QC CHECK LOG **METER :** 43-89B **DATE (MO/YR) :** July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
202423	9/2/2011	Alpha	Beta	Alpha	Beta	Th - 230	SN-5777-07	14.5%	1.6
Detector		0.3	209	3625	2240	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
221834	9/2/2011	2.8	249	5438	3359	SrY - 90	SN-5781-07	16.7%	229

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	1.2	239	4663	2888	SAT	SAT	JJ	
7-12-11	0700	1.7	219	4705	2871	SAT	SAT	JJ	
7-13-11	0645	2.0	218	4783	2828	SAT	SAT	JJ	
7-14-11	0630	1.2	218	4696	2926	SAT	SAT	JJ	
7-15-11	0630	1.1	217	4319	2767	SAT	SAT	JJ	Out of service. Mylar pierced.

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : RJC (RPM/Designee) **Date :** 7/24/11

Initial Instrument Check In (4 Pi Eff.)

Meter Number:	202423	Detector Number:	221834
Meter Model:	2360	Detector Model:	43-89B
Cal. Due:	9/2/2011	Cal. Due:	9/2/2011

ALPHA	Source Type:	Th - 230	Threshold:	120			
ALPHA	Source #:	SN-5777-07	High Voltage:	690			
ALPHA	Source Activity:	31,199					
ALPHA	Source count time:	1	(min) Background count time:	10	(min)		
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	1.6			
ALPHA	4,663	1.5	Average Source (GCPM):	4,533			
ALPHA	4,675	1.7	Average Net Source (NCPM):	4,531			
ALPHA	4,612	1.8	Source Range (GCPM):	3,625	to	5,438	
ALPHA	4,634	2.1	Background Range (CPM):	0.3	to	2.8	
ALPHA	4,267	2.3	Determined Efficiency:	14.5%			
ALPHA	4,110	1.7					
ALPHA	4,263	1.1	20% of Bkg.	0.3			
ALPHA	4,707	1.2	1 Standard Deviation of Bkg.	0.4			
ALPHA	4,732	1.3	3 Standard Deviations of Bkg.	1.2			
ALPHA	4,666	1.1					

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	120			
BETA	Source #:	SN-5781-07	High Voltage:	690			
BETA	Source Activity:	15,362					
BETA	Source count time:	1	(min) Background count time:	10	(min)		
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	229			
BETA	2,857	221	Average Source (GCPM):	2,799			
BETA	2,909	224	Average Net Source (NCPM):	2,570			
BETA	2,958	228	Source Range (GCPM):	2,240	to	3,359	
BETA	2,817	242	Background Range (CPM):	209	to	249	
BETA	2,451	237	Determined Efficiency:	16.7%			
BETA	2,462	236					
BETA	2,513	225	20% of Bkg.	46			
BETA	3,055	228	1 Standard Deviation of Bkg.	7			
BETA	2,993	224	3 Standard Deviations of Bkg.	20			
BETA	2,979	226					

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

4 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1452
Surface Efficiency =	1.00
Background (cpm) =	1.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	40.4

NCD = < 8.9

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1673
Surface Efficeincy =	1.00
Background (cpm) =	229.2
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	264.1

NCD = < 284.4

2 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	2.8954
Surface Efficiency =	1.00
Background (cpm) =	1.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	2.0

NCD = < 8.9

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.3615
Surface Efficeincy =	1.00
Background (cpm) =	229.2
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	122.2

NCD = < 284.4

Alpha Beta Calibration Report

8/298

Date Calibrated: 09/02/2010 2:47:17 PM Order Number: SAIC HARRISBURG20100902-006

Technician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 221834 Manufacturer: Ludlum Model: 43-89 Last Calibrated: 9/24/2009

Reason for recalibration: Due for Calibration

Calibration Instrument

Light Leak Test: Sat

Serial Number: 202423 Inst. Type: 2360 Calibration Due: 9/2/2011

Calibration Sources

4π	Alpha Source ID: SAIC-0002	Isotope: Th-230	Current Activity:	22598.67dpm	Assay Date:	4/6/2004
	Beta Source ID: SAIC-0001	Isotope: SrY-90	Current Activity:	9845.92dpm	Assay Date:	3/23/2004
2π	Alpha Source ID: SAIC-0002	Isotope: Th-230	Current Activity:	11499.32dpm	Assay Date:	4/6/2004
	Beta Source ID: SAIC-0001	Isotope: SrY-90	Current Activity:	6892.14dpm	Assay Date:	3/23/2004

Alpha as Found	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts NA	Background 1 min. counts NA	Background 1 min. counts 1	Background 1 min. counts 180
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 3561	Source 1 min. counts 2674
4π % efficiency: 0	4π % efficiency: 0	4π % efficiency: 15.75	4π % efficiency: 25.33
2π % efficiency: 0	2π % efficiency: 0	2π % efficiency: 30.96	2π % efficiency: 36.19

Alpha Threshold: 120 mV High Voltage: 690 V

Beta Threshold: 35 mV Beta Window: 30 mV Next Calibration Due: 9/2/2011

Comments

HV set with probe attached

Performed By: [signature] Date: 9/2/10

Reviewed By [signature] Date: 9/9/10

Plateau Calibration

Model # 43-89
Serial # 221834
Alpha Source I D SAIC-0002
Beta Source I D SAIC-0001

Alpha Input Senitivity 120mV
Beta Input Senitivity 3 5mV
Beta Window 30mV
Distance Source to Detector source holder

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta
400			/	/
425			/	/
450			/	/
475			/	/
500			/	/
525			/	/
550			/	/
575			/	/
600			/	/
625	2	67	2627 / 455	1333 / 11
650	2	104	3190 / 527	1933 / 6
675	0	162	3328 / 668	2363 / 8
700	2	202	3646 / 1049	2862 / 10
725	0	219	3832 / 1813	3143 / 2
750	2	286	3754 / 3248	3225 / 6
775	2	337	3903 / 6232	3272 / 6
800			/	/
825			/	/
850			/	/
875			/	/
900			/	/
925			/	/
950			/	/
975			/	/
1000			/	/
1025			/	/
1050			/	/
1075			/	/
1100			/	/
1125			/	/
1150			/	/
1175			/	/
1200			/	/
1225			/	/
1250			/	/
1275			/	/
1300			/	/
1325			/	/
1350			/	/
1375			/	/
1400			/	/

High Voltage Set 690 V *HV set with probe attached
Reviewed By [signature] Date 9/9/10

@690 V
Background
Alpha - 1
Beta - 160

source
Alpha - 3561 / 833
Beta - 2674 / 4

B 81214

Scaler/Ratemeter Calibration Report

Date Calibrated: 09/02/2010 2:43:26 PM Order Number: SAIC HARRISBURG20100902-005
Technician: B. French Customer: SAIC HARRISBURG
Temperature (F): 76 Humidity (%): 35 Altitude (asl): 660 Barametric Pressure ("Hg): 29.21

Repair Instrument

Serial Number: 202423 Manufacturer: Ludlum Model: 2360 Meterface: 202-855
Received: Within 10%
Last Calibrated: 9/24/2009 Calibration Interval: 1 yr. Next Calibration Due: 9/2/2011

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [ ] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 690 V at (see comments)mV — Det. Op. 690 V at (see comments)mV — Threshold Dial ratio: N/A
- [x] HV readout — Ref. 1 503Volts Inst. 1 500Volts — Ref. 2 2000Volts Inst. 2 2000 Volts
- [x] Calibrated in accordance with ANSI N323-1997 and the manufacturer's procedure

CTV* Analog Reading

Multiplier	Ref. Cal Point	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other ser. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40002 (0) cpm	39992 (0) cpm
40 K cpm	4000 (0) cpm	3999 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

Comments

For input sensitivities, see detector calibration form

* Conventionally True Value ** Uncertainty within +/- 10% All range(s) calibrated electronically

Performed By: [signature] Date: 9/2/10
Reviewed By [signature] Date: 9/9/10

INSTRUMENTATION QC CHECK LOG

METER : 43-89C

DATE (MO/YR) : July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
202463	6/1/2012	Alpha	Beta	Alpha	Beta	Th - 230	SN-5777-07	14.0%	0.6
Detector		0.0	255	3506	1923	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
199349	6/1/2012	1.2	323	5259	2884	SrY - 90	SN-5781-07	13.8%	289

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	0.4	266	4613	2349	SAT	SAT	R	
7-12-11	0700	0.6	259	4589	2423	SAT	SAT	R	
7-13-11	0645	0.6	265	4365	2322	SAT	SAT	R	
7-14-11	0630	0.4	261	4479	2524	SAT	SAT	R	
7-15-11	0630	0.3	257	4326	2569	SAT	SAT	R	
7-16-11	0630	0.5	260	4313	2496	SAT	SAT	R	
7-17-11	0630	1.0	257	4577	2653	SAT	SAT	R	
					NA				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By: Jenni R Chambers (RPM/Designee) Date : 7/24/11

Initial Instrument Check In (4 Pi Eff.)

Meter Number:	202463	Detector Number:	199349
Meter Model:	2360	Detector Model:	43-89C
Cal. Due:	6/1/2012	Cal. Due:	6/1/2012

ALPHA	Source Type:	Th - 230	Threshold:	120		
ALPHA	Source #:	SN-5777-07	High Voltage:	535		
ALPHA	Source Activity:	31,199				
ALPHA	Source count time:	1	(min) Background count time:	10	(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	0.6		
ALPHA	4,038	0.7	Average Source (GCPM):	4,383		
ALPHA	4,048	0.7	Average Net Source (NCPM):	4,382		
ALPHA	4,011	0.3	Source Range (GCPM):	3,506	to	5,259
ALPHA	4,020	1	Background Range (CPM):	0.0	to	1.2
ALPHA	4,082	0.5	Determined Efficiency:	14.0%		
ALPHA	4,613	0.5				
ALPHA	4,774	0.5	20% of Bkg.	0.1		
ALPHA	4,802	0.4	1 Standard Deviation of Bkg.	0.2		
ALPHA	4,730	0.5	3 Standard Deviations of Bkg.	0.6		
ALPHA	4,710	0.6				

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	120		
BETA	Source #:	SN-5781-07	High Voltage:	535		
BETA	Source Activity:	15,362				
BETA	Source count time:	1	(min) Background count time:	10	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	289		
BETA	2,175	303	Average Source (GCPM):	2,403		
BETA	2,239	294	Average Net Source (NCPM):	2,115		
BETA	2,292	288	Source Range (GCPM):	1,923	to	2,884
BETA	2,236	310	Background Range (CPM):	255	to	323
BETA	2,373	293	Determined Efficiency:	13.8%		
BETA	2,389	282				
BETA	2,465	283	20% of Bkg.	58		
BETA	2,653	282	1 Standard Deviation of Bkg.	11		
BETA	2,551	274	3 Standard Deviations of Bkg.	34		
BETA	2,660	279				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

4 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1405
Surface Efficiency =	1.00
Background (cpm) =	0.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	31.9

NCD = < 6.2

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1377
Surface Efficeincy =	1.00
Background (cpm) =	288.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	358.1

NCD = < 350.2

2 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	2.8001
Surface Efficiency =	1.00
Background (cpm) =	0.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	1.6

NCD = < 6.2

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.2974
Surface Efficeincy =	1.00
Background (cpm) =	288.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	165.7

NCD = < 350.2

Alpha Beta Calibration Report

C

Date Calibrated: 06/02/2011 10:23:11 AM Order Number: SAIC HARRISBURG20110602-002

echnician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 199349 Manufacturer: Ludlum Model: 43-89 Last Calibrated: 4/19/2010

Reason for recalibration: Due for Calibration

Calibration Instrument

Light Leak Test: Sat

Serial Number: 202463 Inst. Type: 2360 Calibration Due: 6/1/2012

Calibration Sources

4π	Alpha Source ID:	SAIC-0053	Isotope:	Th-230	Current Activity:	20298.03dpm	Assay Date:	11/6/2000
	Beta Source ID:	SAIC-0054	Isotope:	SrY-90	Current Activity:	12953.47dpm	Assay Date:	11/15/2000
2π	Alpha Source ID:	SAIC-0053	Isotope:	Th-230	Current Activity:	10099.02dpm	Assay Date:	11/6/2000
	Beta Source ID:	SAIC-0054	Isotope:	SrY-90	Current Activity:	8997.62dpm	Assay Date:	11/15/2000

Alpha as Found	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts NA	Background 1 min. counts NA	Background 1 min. counts 1	Background 1 min. counts 203
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 2884	Source 1 min. counts 3137
4π % efficiency: 0 2π % efficiency: 0	4π % efficiency: 0 2π % efficiency: 0	4π % efficiency: 14.2 2π % efficiency: 28.55	4π % efficiency: 22.65 2π % efficiency: 32.61

Alpha Threshold:	120 mV	High Voltage:	535 V	
Beta Threshold:	3.5 mV	Beta Window:	30 mV	Next Calibration Due: 6/1/2012

Comments

HV set with probe attached

Performed By: [signature] Date: 6/2/11

iewed By [signature] Date: 6-2-11

Scaler/Ratemeter Calibration Report

Date Calibrated: 06/02/2011 10:18:57 AM Order Number: SAIC HARRISBURG20110602-001
Customer: SAIC HARRISBURG
Technician: B. French
Temperature (F): 72 Humidity (%): 31 Altitude (asl): 660 Barametric Pressure ("Hg): 29.53

Repair Instrument

Serial Number: 202463 Manufacturer: Ludlum Model: 2360 Meterface: 202-855
Received: Within 10%
Last Calibrated: 4/19/2010 Calibration Interval: 1 yr. Next Calibration Due: 6/1/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [x] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set 535 V at (see comments)mV Det. Op. 535 V at (see comments)mV Threshold Dial ratio: N/A
- [x] HV readout **Ref. 1** 500Volts **Inst. 1** 500Volts **Ref. 2** 2005Volts **Inst. 2** 2000 Volts
- [x] Calibrated in accordance with ANSI N323-1997 and the manufacturer's procedure

CTV* Analog Reading

Multiplier	Ref. Cal Point	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other ser. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40007 (0) cpm	40025 (0) cpm
40 K cpm	4002 (0) cpm	4001 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

Comments

For input sensitivities, see detector calibration form

*** Conventionally True Value** **** Uncertainty within +/- 10%** **All range(s) calibrated electronically**

Performed By: [signature] Date: 6/2/11
Reviewed By [signature] Date: 6-2-11

Plateau Calibration

Model # 43-89
Serial # 199349
Alpha Source I D SAIC-0053
Beta Source I D SAIC-0054

Alpha Input Senitivity 120mV
Beta Input Senitivity 3 5mV
Beta Window 30mV
Distance Source to Detector source holder

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta
400			/	/
425			/	/
450			/	/
475			/	/
500	0	89	1938 / 567	1928 / 2
525	1	167	2717 / 600	2876 / 1
550	1	248	3141 / 848	3629 / 2
575	1	300	3400 / 1579	4405 / 3
600			/	/
625			/	/
650			/	/
675			/	/
700			/	/
725			/	/
750			/	/
775			/	/
800			/	/
825			/	/
850			/	/
875			/	/
900			/	/
925			/	/
950			/	/
975			/	/
1000			/	/
1025			/	/
1050			/	/
1075			/	/
1100			/	/
1125			/	/
1150			/	/
1175			/	/
1200			/	/
1225			/	/
1250			/	/
1275			/	/
1300			/	/
1325			/	/
1350			/	/
1375			/	/
1400			/	/

High Voltage Set 535V *HV set with probe attached
Reviewed By [signature] Date: 6-2-11

@535

Background
Alpha - 1
Beta - 203

Source
Alpha - 2884/689
Beta - 3137/2

INSTRUMENTATION QC CHECK LOG **METER :** 43-89B **DATE (MO/YR) :** July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
202423	9/2/2011	Alpha	Beta	Alpha	Beta	Th - 230	SN-5777-07	14.5%	1.6
Detector		0.3	209	3625	2240	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
221834	9/2/2011	2.8	249	5438	3359	SrY - 90	SN-5781-07	16.7%	229

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	1.2	239	4663	2888	SAT	SAT	JJ	
7-12-11	0700	1.7	219	4705	2871	SAT	SAT	JJ	
7-13-11	0645	2.0	218	4783	2828	SAT	SAT	JJ	
7-14-11	0630	1.2	218	4696	2926	SAT	SAT	JJ	
7-15-11	0630	1.1	217	4319	2767	SAT	SAT	JJ	Out of service. Mylar pierced.

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : RJC (RPM/Designee) **Date :** 7/24/11

Initial Instrument Check In (4 Pi Eff.)

Meter Number:	202423	Detector Number:	221834
Meter Model:	2360	Detector Model:	43-89B
Cal. Due:	9/2/2011	Cal. Due:	9/2/2011

ALPHA	Source Type:	Th - 230	Threshold:	120			
ALPHA	Source #:	SN-5777-07	High Voltage:	690			
ALPHA	Source Activity:	31,199					
ALPHA	Source count time:	1	(min) Background count time:	10	(min)		
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	1.6			
ALPHA	4,663	1.5	Average Source (GCPM):	4,533			
ALPHA	4,675	1.7	Average Net Source (NCPM):	4,531			
ALPHA	4,612	1.8	Source Range (GCPM):	3,625	to	5,438	
ALPHA	4,634	2.1	Background Range (CPM):	0.3	to	2.8	
ALPHA	4,267	2.3	Determined Efficiency:	14.5%			
ALPHA	4,110	1.7					
ALPHA	4,263	1.1	20% of Bkg.	0.3			
ALPHA	4,707	1.2	1 Standard Deviation of Bkg.	0.4			
ALPHA	4,732	1.3	3 Standard Deviations of Bkg.	1.2			
ALPHA	4,666	1.1					

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	120			
BETA	Source #:	SN-5781-07	High Voltage:	690			
BETA	Source Activity:	15,362					
BETA	Source count time:	1	(min) Background count time:	10	(min)		
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	229			
BETA	2,857	221	Average Source (GCPM):	2,799			
BETA	2,909	224	Average Net Source (NCPM):	2,570			
BETA	2,958	228	Source Range (GCPM):	2,240	to	3,359	
BETA	2,817	242	Background Range (CPM):	209	to	249	
BETA	2,451	237	Determined Efficiency:	16.7%			
BETA	2,462	236					
BETA	2,513	225	20% of Bkg.	46			
BETA	3,055	228	1 Standard Deviation of Bkg.	7			
BETA	2,993	224	3 Standard Deviations of Bkg.	20			
BETA	2,979	226					

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

4 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1452
Surface Efficiency =	1.00
Background (cpm) =	1.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	40.4

NCD = < 8.9

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.1673
Surface Efficeincy =	1.00
Background (cpm) =	229.2
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	264.1

NCD = < 284.4

2 Pi Efficiency

ALPHA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	2.8954
Surface Efficiency =	1.00
Background (cpm) =	1.6
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	2.0

NCD = < 8.9

BETA

For Portable Counters:

Detector Area (cm2) =	125.0
Efficiency (%) =	0.3615
Surface Efficeincy =	1.00
Background (cpm) =	229.2
Background count time =	10.0
Gross count time =	1.0
MDA (dpm/100cm2) =	122.2

NCD = < 284.4

Alpha Beta Calibration Report

8/298

Date Calibrated: 09/02/2010 2:47:17 PM Order Number: SAIC HARRISBURG20100902-006

Technician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 221834 Manufacturer: Ludlum Model: 43-89 Last Calibrated: 9/24/2009

Reason for recalibration: Due for Calibration

Calibration Instrument

Light Leak Test: Sat

Serial Number: 202423 Inst. Type: 2360 Calibration Due: 9/2/2011

Calibration Sources

4π	Alpha Source ID: SAIC-0002	Isotope: Th-230	Current Activity:	22598.67dpm	Assay Date:	4/6/2004
	Beta Source ID: SAIC-0001	Isotope: SrY-90	Current Activity:	9845.92dpm	Assay Date:	3/23/2004
2π	Alpha Source ID: SAIC-0002	Isotope: Th-230	Current Activity:	11499.32dpm	Assay Date:	4/6/2004
	Beta Source ID: SAIC-0001	Isotope: SrY-90	Current Activity:	6892.14dpm	Assay Date:	3/23/2004

Alpha as Found	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts NA	Background 1 min. counts NA	Background 1 min. counts 1	Background 1 min. counts 180
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 3561	Source 1 min. counts 2674
4π % efficiency: 0	4π % efficiency: 0	4π % efficiency: 15.75	4π % efficiency: 25.33
2π % efficiency: 0	2π % efficiency: 0	2π % efficiency: 30.96	2π % efficiency: 36.19

Alpha Threshold: 120 mV High Voltage: 690 V

Beta Threshold: 35 mV Beta Window: 30 mV Next Calibration Due: 9/2/2011

Comments

HV set with probe attached

Performed By: [signature] Date: 9/2/10

Reviewed By [signature] Date: 9/9/10

Plateau Calibration

Model # 43-89
Serial # 221834
Alpha Source I D SAIC-0002
Beta Source I D SAIC-0001

Alpha Input Senitivity 120mV
Beta Input Senitivity 3 5mV
Beta Window 30mV
Distance Source to Detector source holder

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta
400			/	/
425			/	/
450			/	/
475			/	/
500			/	/
525			/	/
550			/	/
575			/	/
600			/	/
625	2	67	2627 / 455	1333 / 11
650	2	104	3190 / 527	1933 / 6
675	0	162	3328 / 668	2363 / 8
700	2	202	3646 / 1049	2862 / 10
725	0	219	3832 / 1813	3143 / 2
750	2	286	3754 / 3248	3225 / 6
775	2	337	3903 / 6232	3272 / 6
800			/	/
825			/	/
850			/	/
875			/	/
900			/	/
925			/	/
950			/	/
975			/	/
1000			/	/
1025			/	/
1050			/	/
1075			/	/
1100			/	/
1125			/	/
1150			/	/
1175			/	/
1200			/	/
1225			/	/
1250			/	/
1275			/	/
1300			/	/
1325			/	/
1350			/	/
1375			/	/
1400			/	/

High Voltage Set 690 V *HV set with probe attached
Reviewed By [signature] Date 9/9/10

@690 V
Background
Alpha - 1
Beta - 160

source
Alpha - 3561 / 833
Beta - 2674 / 4

B 81214

Scaler/Ratemeter Calibration Report

Date Calibrated: 09/02/2010 2:43:26 PM Order Number: SAIC HARRISBURG20100902-005
Technician: B. French Customer: SAIC HARRISBURG
Temperature (F): 76 Humidity (%): 35 Altitude (asl): 660 Barametric Pressure ("Hg): 29.21

Repair Instrument

Serial Number: 202423 Manufacturer: Ludlum Model: 2360 Meterface: 202-855
Received: Within 10%
Last Calibrated: 9/24/2009 Calibration Interval: 1 yr. Next Calibration Due: 9/2/2011

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [ ] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 690 V at (see comments)mV — Det. Op. 690 V at (see comments)mV — Threshold Dial ratio: N/A
- [x] HV readout — Ref. 1 503Volts Inst. 1 500Volts — Ref. 2 2000Volts Inst. 2 2000 Volts
- [x] Calibrated in accordance with ANSI N323-1997 and the manufacturer's procedure

CTV* Analog Reading

Multiplier	Ref. Cal Point	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other ser. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40002 (0) cpm	39992 (0) cpm
40 K cpm	4000 (0) cpm	3999 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

Comments

For input sensitivities, see detector calibration form

* Conventionally True Value ** Uncertainty within +/- 10% All range(s) calibrated electronically

Performed By: [signature] Date: 9/2/10
Reviewed By [signature] Date: 9/9/10

INSTRUMENTATION QC CHECK LOG **METER :** 44-10B **DATE (MO/YR):** July 2011

Source		Acceptance Criteria					Model	Number	Cal. Due
Type	Cs-137	Bkgrd. QC (cpm) range		Source QC (cpm) range		Meter	2221	178108	4/1/2012
Number	SN-5780-07	6,106 to 10,803		225,455 to 338,182		Detector	44-10B	187432	4/1/2012
Date	Time	Pre-use Bkg cpm	Post Bkg cpm[1]	Pre-use Source cpm	Post Source cpm[1]	Bat. Check Sat/Unsat	QC[1] Sat/Unsat	Pre-use HPT Initial	Post HPT Initial
7-11-11	1236	8954	8868	280725	288807	SAT	SAT	R	R
7-12-11	0700	6585	6867	280131	282666	SAT	SAT	R	R
7-13-11	0645	6801	6961	282173	283218	SAT	SAT	R	R
7-14-11	0630	9491	9262	286901	289101	SAT	SAT	R	R
7-15-11	0630	9108	NA	286282	NA	SAT	SAT	R	NA
7-16-11	0630	9756	NA	285899	NA	SAT	SAT	R	NA
7-17-11	0630	9137	9293	290091	286769	SAT	SAT	R	R

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in.

Reviewed By : _____ (RPM/Designee) **Date :** 7/24/11

Initial Instrument Check In

Meter Number:	178108	Detector Number:	187432
Meter Model:	2221	Detector Model:	44-10B
Cal. Due:	4/1/2012	Cal. Due:	4/1/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	#DIV/0!		
ALPHA			Average Source (GCPM):	#DIV/0!		
ALPHA			Average Net Source (NCPM):	#DIV/0!		
ALPHA			Source Range (GCPM):	#DIV/0!	to	#DIV/0!
ALPHA			Background Range (CPM):	#DIV/0!	to	#DIV/0!
ALPHA			Determined Efficiency:	#DIV/0!		
ALPHA						
ALPHA			20% of Bkg.	#DIV/0!		
ALPHA			1 Standard Deviation of Bkg.	#DIV/0!		
ALPHA			3 Standard Deviations of Bkg.	#DIV/0!		
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	Cs-137	Threshold:	10		
BETA	Source #:	SN-5780-07	High Voltage:	1100		
BETA	Source Activity:	0.91 uCi				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	8,455		
BETA	281,941	8872	Average Source (GCPM):	281,818		
BETA	281,661	8876	Average Net Source (NCPM):	273,364		
BETA	280,752	8598	Source Range (GCPM):	225,455	to	338,182
BETA	281,168	7348	Background Range (CPM):	6,106	to	10,803
BETA	281,285	7038	Determined Efficiency:	NA		
BETA	282,464	7758				
BETA	281,701	9100	20% of Bkg.	1691		
BETA	282,722	9311	1 Standard Deviation of Bkg.	783		
BETA	281,747	8778	3 Standard Deviations of Bkg.	2348		
BETA	282,742	8869				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

Designer and Manufacturer of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SAIC ORDER NO. 20172746/361507

1. Ludlum Measurements, Inc. Model 2221 Serial No. 178108
2. Ludlum Measurements, Inc. Model 44-10 Serial No. PR 187432

Cal. Date 1-Apr-11 Cal Due Date 1-Apr-12 Cal. Interval 1 Year Meterface 202-159

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 32 % Alt 694.8 mm Hg

☐ New Instrument Instrument Received ☐ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☑ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☐ Background Subtract ☑ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☑ Window Operation ☑ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 4.4 VDC
☑ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set See Comments V Input Sens. See Comments mV Det. Oper See Comments V at See Comments mV Threshold Dial Ratio 100 = 10 mV

☑ HV Readout (2 points) Ref./Inst. 500 / 495 V Ref./Inst. 2000 / 1995 V

COMMENTS:

	Peak Settings	Gross Counts
High Voltage:	904v	1100v
Threshold Setting:	642	100=10mv
Window Setting:	40	n/a
Window Position:	"in"	"out"
resolution for Cs137:	11.93%	n/a

Firmware:261027
Calibration performed with 5' C cable.
Overload checked but not set.
High Voltage set with 44-10 connected. currently set for Gross counts.

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
x1K	400kcpm	N/A	400
x1K	100kcpm		100
x100	40kcpm		400
x100	10kcpm		100
x10	4kcpm		400
x10	1kcpm		100
x1	400cpm		400
x1	100cpm		100

*Uncertainty within ± 10% C.F. within ± 20%

ALL Range(s) Calibrated Electronically

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Digital Readout	400kcpm	N/A	39959 (0)
	40kcpm		3995
	4kcpm		400
	400cpm		40
	40cpm		4

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Log Scale	500kcpm	N/A	500K
	50kcpm		50K
	5kcpm		5K
	500cpm		500
	50cpm		50

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No LO-1963

Reference Instruments and/or Sources: ☐ 73410 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646 ☐ 70897
Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☑ Other Am241:0.83uci

500 S/N 94940 ☐ Oscilloscope S/N ☑ Multimeter S/N 78401031

Calibrated By: Date 1-APR-11

Reviewed By: Date 1April11

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test ☐ Failed:

Designer and Manufacturer
of
Scientific and Industrial
Instruments

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

Bench Test Data For Detector

Detector 44-10 Serial No. PR187432

Customer SAIC Order #. 20172746/361507

Counter 2221 Serial No. 178108 Counter Input Sensitivity 10 mV

Count Time 6 Sec. Distance Source to Detector Surface

Other H.V. Set with 44-10 Connected.

High Voltage	Background	Isotope Am 241 Size ~0.83uC	Isotope ____ Size ____	Isotope ____ Size ____	Isotope ____ Size ____
900	639	639			
950	674	4757			
1000	731	11667			
1050	785	12399			
1100	787	12395			
1150	781	12487			
1200	803	12888			
1250	818	14393			

Signature _____ Date 1-APR-11

INSTRUMENTATION QC CHECK LOG

METER : 44-9 DATE (MO/YR) : July 2011

Meter		Acceptance Criteria				Alpha			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range		Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
197790	3/28/2012	Alpha	Beta	Alpha	Beta	N/A	N/A	N/A	N/A
Detector		N/A	20	N/A	2366	Beta			
Number	Cal. Due	to	to	to	to	Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
212132	3/28/2012	N/A	75	N/A	3549	SrY - 90	SN-5781-07	18.9%	48

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm)		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7-11-11	1236	NA	51	NA	3091	SAT	SAT	R	
7-12-11	0700	NA	50	NA	2928	SAT	SAT	R	
7-13-11	0645	NA	47	NA	2900	SAT	SAT	R	
7-14-11	0630	NA	49	NA	3028	SAT	SAT	R	
7-15-11	0630	NA	63	NA	2848	SAT	SAT	R	
7-16-11	0630	NA	41	NA	2943	SAT	SAT	R	
7-17-11	0630	NA	44	NA	3043	SAT	SAT	R	
					N/A				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : Rod C (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	197790	Detector Number:	212132
Meter Model:	2221	Detector Model:	44-9
Cal. Due:	3/28/2012	Cal. Due:	3/28/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):			
ALPHA			Average Source (GCPM):			
ALPHA			Average Net Source (NCPM):			
ALPHA			Source Range (GCPM):		to	
ALPHA			Background Range (CPM):		to	
ALPHA			Determined Efficiency:			
ALPHA						
ALPHA			20% of Bkg.			
ALPHA			1 Standard Deviation of Bkg.			
ALPHA			3 Standard Deviations of Bkg.			
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	55		
BETA	Source #:	SN-5781-07	High Voltage:	900		
BETA	Source Activity:	15,362				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	48		
BETA	2,943	41	Average Source (GCPM):	2,957		
BETA	2,942	45	Average Net Source (NCPM):	2,910		
BETA	2,963	52	Source Range (GCPM):	2,366	to	3,549
BETA	2,906	48	Background Range (CPM):	20	to	75
BETA	2,969	41	Determined Efficiency:	18.9%		
BETA	2,875	39				
BETA	2,965	53	20% of Bkg.	10		
BETA	2,969	64	1 Standard Deviation of Bkg.	9		
BETA	3,079	58	3 Standard Deviations of Bkg.	27		
BETA	2,961	35				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

ALPHA

For Portable Counters:

Detector Area (cm2) =	15.5
Efficiency (%) =	
Surface Efficiency =	1.00
Background (cpm) =	
Background count time =	1.0
Gross count time =	
MDA (dpm/100cm2) =	#DIV/0!

NCD = < #DIV/0!

BETA

For Portable Counters:

Detector Area (cm2) =	15.5
Efficiency (%) =	0.1894
Surface Efficeincy =	1.00
Background (cpm) =	47.6
Background count time =	1.0
Gross count time =	1.0
MDA (dpm/100cm2) =	1195.6

NCD = < 82.7

Beta Calibration Report

Date Calibrated: 03/29/2011 1:30:35 PM Order Number: SAIC HARRISBURG20110329-002

Technician: B. French Customer: SAIC HARRISBURG

pair Instrument

Serial Number: 212132 Manufacturer: Ludlum Model: 44-9 Last Calibrated: 4/1/2010

Reason for recalibration: Due for Calibration

Calibration Instrument

Serial Number: 197790 Inst. Type: 2221 Calibration Due: 3/28/2012

Calibration Sources

4π	Beta Source ID: SAIC-0054	Isotope: SrY-90	Current Activity:	13009.13dpm	Assay Date: 11/15/2000
2π	Beta Source ID: SAIC-0054	Isotope: SrY-90	Current Activity:	9036.28cpm	Assay Date: 11/15/2000

Beta as Found	**Beta as Left**
Background 1 min. counts NA	Background 1 min. counts 30
Source 1 min. counts NA	Source 1 min. counts 3104
4π % efficiency: 0	4π % efficiency: 23.63
2π % efficiency: 0	2π % efficiency: 34.02

Beta Threshold: 55mV High Voltage: 900V Next Calibration Due: 3/28/2012

Comments

Performed By: B. French Date: 3/29/11

Reviewed By: [signature] Date: 3/30/11

Scaler/Ratemeter Calibration Report

Date Calibrated: 03/29/2011 1:28:11 PM Order Number: SAIC HARRISBURG20110329-001

Technician: B. French Customer: SAIC HARRISBURG

Temperature (F): 70 Humidity (%): 24 Altitude (asl): 660 Barametric Pressure ("Hg): 29.56

Repair Instrument

Serial Number: 197790 Manufacturer: Ludlum Model: 2221 Meterface: 202-159

Received: Within 10%

Last Calibrated: 4/1/2010 Calibration Interval: 1 yr. Next Calibration Due: 3/28/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [x] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [x] F/S Resp. OK
- [x] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 900 V at 55 mV — Det. Op. 900 V at 55 mV — Threshold Dial ratio: 100 = 10
- [x] HV readout — **Ref. 1** 499 Volts **Inst. 1** 500 Volts — **Ref. 2** 2002 Volts **Inst. 2** 2000 Volts
- [x] Calibrated in accordance with ANSI N323A-1997 and the manufacturers procedure

CTV* Analog Reading

Multiplier	Ref. Cal Poin	Inst. As Found	Inst. As Left
X 1000	400 K cpm	400 K cpm	400 K cpm
X 1000	100 K cpm	100 K cpm	100 K cpm
X 100	40 K cpm	40 K cpm	40 K cpm
X 100	10 K cpm	10 K cpm	10 K cpm
X 10	4 K cpm	4 K cpm	4 K cpm
X 10	1 K cpm	1 K cpm	1 K cpm
X 1	400 cpm	400 cpm	400 cpm
X 1	100 cpm	100 cpm	100 cpm

- [x] Multimeter scr. # 93470436
- [ ] Oscilloscope ser. #
- [x] m500 ser. # 201462
- [ ] Other scr. #

CTV* Digital

Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	40011 (0) cpm	40013 (0) cpm
40 K cpm	4002 (0) cpm	4001 (0) cpm
4 K cpm	400 (0) cpm	400 (0) cpm
400 cpm	40 (0) cpm	40 (0) cpm
40 cpm	4 (0) cpm	4 (0) cpm

CTV* Log Scale

Reference Pt.	Inst. as Found	Inst. as Left
500 K cpm	500 K cpm	500 K cpm
50 K cpm	50 K cpm	50 K cpm
5 K cpm	5 K cpm	5 K cpm
500 cpm	500 cpm	500 cpm
50 cpm	50 cpm	50 cpm

*** Conventionally True Value** **** Uncertainty within +/- 10%** **All range(s) calibrated electronically**

Comments

Performed By: B. French Date: 3/29/11

Reviewed By: [signature] Date: 3/30/11

ASST #16131

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Gamma Standard

S.O.# 6620
P.O.# 20077000355

Description of Standard:

Model No. CS-7D Serial No. 5780-07 Isotope Cs-137

The source of gamma radiation is mounted on a 5.08 cm diameter PLASTIC disc, 3 mm thick and sealed in a PLASTIC RESIN.

Measurement Method:

The gamma ray emission rate was compared with a similar standard, which was calibrated by NIST S/N 2752-91. The comparison of relative gama ray emission rates was accomplished using a high resolution gamma-ray detector (nominal active volume 100 cm³) and a multichannel pulse height analyzer.

Measurement Result:

The gamma ray activity of the standard on 4-17-2007 was 1.0 µCi. The uncertainty of the measurement is 2.2 %, which is the sum of the uncertainty assigned to the NIST reference (2.4 %), random counting error at the 99% confidence level, and the estimated upper limit of systematic errors.

Calibrated by: ART REUST Reviewed by:

Calibration Technician: Art Reust for Q.A. Manager: Karen Schroeder

Calibration Date: 4-17-2007 Reviewed Date: 4-18-07

7021 Pan American Freeway NE
Albuquerque, New Mexico 87109-4238
(505) 262-2694 Fax (505) 262-2698
www.eberlineservices.com

16/32

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Electroplated Alpha Standard

S.O.# 6620
P.O.# 2007000355

Description of Standard:

Model No. DNS-4 Serial No. 5777-07 Isotope Th-230

Electroplated on polished SS disc, 0.79 mm thick.

Total diameter of 2.23 cm and an active diameter of 1.91 cm.

The radioactive material is permanently fixed to the disc by heat treatment without any covering over the active surface.

Measurement Method:

The 2pi alpha emission rate was measured using an internal gas flow proportional chamber. Absolute counting of alpha particles emitted in the hemisphere above the active surface was verified by counting above, below, and at the operative voltage. The calibration is traceable to NIST by reference to an NIST calibrated alpha source S/N 4001-02.

Measurement Result:

The observed alpha particles emitted from the surface of the disc per minute (cpm) on the calibration date was:

15,800 ± 475

The total disintegration rate (dpm) assuming 1.5% backscatter of alpha particles from the surface of the disc, was:

31,200 ± 936 (0.0141 μCi)

The uncertainty of the measurement is 3 %, which is the sum of random counting error at the 99% confidence level, and the estimated upper limit of systematic error in this measurement.

Calibrated by: ART REUST Reviewed by: Steven Sanchez

Calibration Technician: Art Reust for Q.A. Manager: Karen Wehrenberg

Calibration Date: 4-17-2007 Reviewed Date: 4-18-2007

7021 Pan American Freeway NE
Albuquerque, New Mexico 87109-4238
(505) 262-2694 Fax (505) 262-2698
www.eberlineservices.com

ASST #16134

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Electroplated Beta Standard

S.O.# 6620
P.O.# 2007000355

Description of Standard:

Model No. DNS-14 Serial No. 5781-07 Isotope SrY-90

Electroplated on polished Ni disc, 0.79 mm thick.

Total diameter of 4.77 cm and an active diameter of 4.45 cm.

The radioactive material is permanently fixed to the disc by heat treatment without any covering over the active surface.

Measurement Method:

The 2pi beta emission rate was measured using an internal gas flow proportional chamber. Absolute counting of beta particles emitted in the hemisphere above the active surface was verified by counting above, below, and at the operative voltage. The calibration is traceable to NIST by reference to an NIST calibrated beta source S/N 4002-02.

Measurement Result:

The observed beta count rate from the surface of the disc per minute (cpm) on the calibration date was:

11,900 ± 357

The total disintegration rate (dpm) assuming 40 % backscatter of beta particles from the surface of the disc, was:

17,000 ± 511 (0.00768 μCi)

The uncertainty of the measurement is 3 %, which is the sum of random counting error at the 99% confidence level, and the estimated upper limit of systematic error in this measurement.

Calibrated by: ART REUST Reviewed by:

Calibration Technician: Art Reust for Q.A. Manager:

Calibration Date: 4-17-2007 Reviewed Date: 4-18-2007

7021 Pan American Freeway NE
Albuquerque, New Mexico 87109-4238
(505) 262-2694 Fax (505) 262-2698
www.eberlineservices.com

INSTRUMENTATION QC CHECK LOG

METER : 43-10-1

DATE (MO/YR) : July 2011

Meter		Acceptance Criteria			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range	
166716	4/26/2012	Alpha	Beta	Alpha	Beta
Detector		0.0	40	9290	3689
Number	Cal. Due	to	to	to	to
170380	4/26/2012	0.5	54	13935	5533

Alpha			
Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
Th - 230	SN-5777-07	37.2%	0.1
Beta			
Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
SrY - 90	SN-5781-07	29.7%	47

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7/11/11	1236	0	41	11552	4670	SAT	SAT	R	
7/12/11	0200	0.3	44	11244	4494	SAT	SAT	R	
7/13/11	0645	0.1	41	11626	4696	SAT	SAT	R	
7/14/11	0630	0.3	48	11442	4620	SAT	SAT	R	
7/15/11	0630	0	47	11091	4637	SAT	SAT	R	
7/16/11	0630	0	48	11200	4593	SAT	SAT	R	
7/17/11	0630	0.1	51	11431	4615	SAT	SAT	R	
					NA				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : _____ (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	166716	Detector Number:	170380
Meter Model:	2929	Detector Model:	43-10-1
Cal. Due:	4/26/2012	Cal. Due:	4/26/2012

ALPHA	Source Type:	Th - 230	Threshold:	175			
ALPHA	Source #:	SN-5777-07	High Voltage:	825			
ALPHA	Source Activity:	31,199					
ALPHA	Source count time:	1	(min) Background count time:	10	(min)		
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	0.1			
ALPHA	11,675	0.0	Average Source (GCPM):	11,613			
ALPHA	11,650	0.1	Average Net Source (NCPM):	11,613			
ALPHA	11,604	0.2	Source Range (GCPM):	9,290	to	13,935	
ALPHA	11,526	0.0	Background Range (CPM):	0.0	to	0.5	
ALPHA	11,569	0.1	Determined Efficiency:	37.2%			
ALPHA	11,813	0.0					
ALPHA	11,386	0.1	20% of Bkg.	0.0			
ALPHA	11,716	0.1	1 Standard Deviation of Bkg.	0.1			
ALPHA	11,602	0.4	3 Standard Deviations of Bkg.	0.4			
ALPHA	11,589	0.0					

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	4			
BETA	Source #:	SN-5781-07	High Voltage:	825			
BETA	Source Activity:	15,362					
BETA	Source count time:	1	(min) Background count time:	10	(min)		
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	47			
BETA	4,660	49	Average Source (GCPM):	4,611			
BETA	4,661	49	Average Net Source (NCPM):	4,563			
BETA	4,616	46	Source Range (GCPM):	3,689	to	5,533	
BETA	4,644	43	Background Range (CPM):	40	to	54	
BETA	4,575	51	Determined Efficiency:	29.7%			
BETA	4,540	48					
BETA	4,581	49	20% of Bkg.	9			
BETA	4,667	48	1 Standard Deviation of Bkg.	2			
BETA	4,587	47	3 Standard Deviations of Bkg.	7			
BETA	4,576	45					

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

ALPHA

MDA for Benchtop Counters:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	10
Gross count time =	1.0
MDA (dpm/100cm2) =	11.0

NCD = < 4.2

MDC for Air Samples:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	720
Gross count time =	92
Volume =	720
Collection Efficiency =	0.99
MDC =	2.5E-13

MDC for AE Air Samples:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	720
Gross count time =	60
Volume =	30000
Collection Efficiency =	0.99
MDC =	7.7E-15

BETA

MDA for Benchtop Counters:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	10
Gross count time =	1.0
MDA (dpm/100cm2) =	90.0

NCD = < 74.0

MDC for Air Samples:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	720
Gross count time =	60.0
Volume =	720.00
Collection Efficiency =	0.99
MDC =	6.6E-12

MDC for AEAir Samples:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	720
Gross count time =	60.0
Volume =	30000.00
Collection Efficiency =	0.99
MDC =	0.0

Alpha Beta Calibration Report

"B"

Date Calibrated: 04/27/2011 1:49:40 PM Order Number: SAIC HARRISBURG20110427-004

Technician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 170380 Manufacturer: Ludlum Model: 43-10-1 Last Calibrated: 1/25/2011

Reason for recalibration: Due for Calibration

Calibration Instrument

Serial Number: 166716 Inst. Type: 2929 Calibration Due: 4/26/2012

Calibration Sources

Alpha Source ID: SAIC-0053 Isotope: Th-230 Current Activity: 20298.05 dpm Assay Date: 11/6/2000

Beta Source ID: SAIC-0054 Isotope: SrY-90 Current Activity: 12984.27 dpm Assay Date: 11/15/2000

Alpha as Foun	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts	Background 1 min. counts	Background 1 min. counts 0	Background 1 min. counts 37
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 7464	Source 1 min. counts 5555
% efficiency: 0	% efficiency: 0	% efficiency: 36.77	% efficiency: 42.5

Alpha Threshold: * 175mV High Voltage: 825V

Beta Threshold: * 4mV Beta Window: * 50mV Next Calibration Due: 4/26/2012

* **Recommended Manufacturer Value**

Comments

Performed By: B. French Date: 4/27/11

Reviewed By Date: 4/27/11

Scaler/Ratemeter Calibration Report

Date Calibrated: 04/27/2011 1:45:21 PM Order Number: SAIC HARRISBURG20110427-003
Technician: B. French Customer: SAIC HARRISBUI
Temperature (F): 68 Humidity (%): 32 Altitude (asl): 660 Barametric Pressure ("Hg): 28.88

Repair Instrument

Serial Number: 166716 Manufacturer: Ludlum Model: 2929 Meterface: 202-014
Received: Within 10%
Last Calibrated: 1/25/2011 Calibration Interval: 1 yr. Next Calibration Due: 4/26/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [ ] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [ ] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 825 V at (see comments)mV — Det. Op. 825 V at (see comments)mV — Threshold Dial ratio: N/A
- [x] HV readout — Ref. 1 498Volts Inst. 1 500Volts — Ref. 2 2013Volts Inst. 2 2000 Volts
- [x] Calibrated in accordance with ANSI N323A-1997 and the manufacturer's procedure

- [x] m500 ser. # 201462
- [ ] Other ser. #
- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #

CTV* Digital Alpha / CTV* Digital Beta

Reference Pt.	Inst. as Found	Inst. as Left	Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	399946 cpm	399988 cpm	400 K cpm	399920 cpm	400060 cpm
40 K cpm	39999 cpm	39993 cpm	40 K cpm	39990 cpm	40008 cpm
4 K cpm	4000 cpm	4000 cpm	4 K cpm	4000 cpm	4000 cpm
400 cpm	400 cpm	400 cpm	400 cpm	400 cpm	400 cpm
40 cpm	40 cpm	40 cpm	40 cpm	40 cpm	40 cpm

* Conventionally True Value ** Uncertainty within +/- 10% All range(s) calibrated electronically

Comments

Performed By: [signature] Date: 4/27/11
Reviewed By [signature] Date: 4/27/11

Plateau Calibration

Model # 43-10-1
Serial # 170380
Alpha Source I.D SAIC-0053
Beta Source I D. SAIC-0054

Alpha Input Senitivity 175mV
Beta Input Senitivity 4mV
Beta Window 50mV
Distance Source to Detector tray

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta	Pot Setting
500			/	/	
525			/	/	
550			/	/	
575			/	/	
600			/	/	
625			/	/	
650			/	/	
675			/	/	
700			/	/	
725			/	/	
750	0	34	7072 / 438	4712 / 4	2.94
775	0	39	7410 / 460	5352 / 2	3.04
800	0	40	7500 / 534	5588 / 3	3.14
825	0	37	7464 / 678	5555 / 2	3.24
850	0	41	7617 / 806	5735 / 7	3.34
875	0	63	7718 / 976	5647 / 10	3.44
900	0	49	7578 / 1287	5405 / 29	3.54
925	1	88	7833 / 1600	5167 / 46	3.64
950			/	/	
975			/	/	
1000			/	/	
1025			/	/	
1050			/	/	
1075			/	/	
1100			/	/	
1125			/	/	
1150			/	/	
1175			/	/	
1200			/	/	
1225			/	/	
1250			/	/	
1275			/	/	
1300			/	/	
1325			/	/	
1350			/	/	
1375			/	/	
1400			/	/	
1425			/	/	
1450			/	/	
1475			/	/	
1500			/	/	

High Voltage Set 825 V
Reviewed By [signature] Date: 4/27/11

INSTRUMENTATION QC CHECK LOG

METER : 44-62 DATE (MO/YR): July 2011

Source		Acceptance Criteria					Model	Number	Cal. Due
Type	Cs-137	Bkgrd. QC (cpm) range		Source QC (cpm) range		Meter	2221	138377	7/7/2012
Number	SN-5780-07	745 to 870		43,286 to 64,929		Detector	44-62	260807	7/7/2012
Date	Time	Pre-use Bkg cpm	Post Bkg cpm[1]	Pre-use Source cpm	Post Source cpm[1]	Bat. Check Sat/Unsat	QC[1] Sat/Unsat	Pre-use HPT Initial	Post HPT Initial
7-11-11	1236	823	NA	54008	NA	SAT	SAT	R	NA
7-12-11	0700	808	769	51968	53277	SAT	SAT	R	R
7-13-11	0645	842	799	52136	52996	SAT	SAT	R	R
7-14-11	0630	773	784	52657	51732	SAT	SAT	R	R
7-15-11	0630	756	801	53581	52848	SAT	SAT	R	R
7-16-11	0630	761	NA	52319	NA	SAT	SAT	R	NA
7-17-11	0630	755	NA	54826	NA	SAT	SAT	R	NA

NA

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in

Reviewed By : [signature] (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	138377	Detector Number:	260807
Meter Model:	2221	Detector Model:	44-62
Cal. Due:	7/7/2012	Cal. Due:	7/7/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	#DIV/0!		
ALPHA			Average Source (GCPM):	#DIV/0!		
ALPHA			Average Net Source (NCPM):	#DIV/0!		
ALPHA			Source Range (GCPM):	#DIV/0!	to	#DIV/0!
ALPHA			Background Range (CPM):	#DIV/0!	to	#DIV/0!
ALPHA			Determined Efficiency:	#DIV/0!		
ALPHA						
ALPHA			20% of Bkg.	#DIV/0!		
ALPHA			1 Standard Deviation of Bkg.	#DIV/0!		
ALPHA			3 Standard Deviations of Bkg.	#DIV/0!		
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	Cs-137	Threshold:	10		
BETA	Source #:	SN-5780-07	High Voltage:	700		
BETA	Source Activity:	0.91 uCi				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	807		
BETA	53,989	816	Average Source (GCPM):	54,108		
BETA	54,221	811	Average Net Source (NCPM):	53,300		
BETA	54,079	764	Source Range (GCPM):	43,286	to	64,929
BETA	54,241	795	Background Range (CPM):	745	to	870
BETA	53,817	840	Determined Efficiency:	NA		
BETA	54,137	809				
BETA	54,131	792	20% of Bkg.	161		
BETA	54,044	824	1 Standard Deviation of Bkg.	21		
BETA	54,275	820	3 Standard Deviations of Bkg.	62		
BETA	54,143	802				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

Certificate of Calibration

Calibration and Voltage Plateau

Environmental Restoration Group, Inc.
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224
www.ERGoffice.com

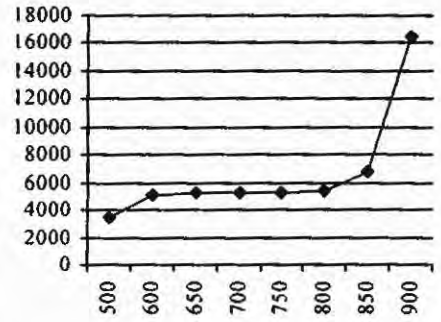
Meter:	Manufacturer:	Ludlum	Model Number:	2221r	Serial Number:	138377
Detector:	Manufacturer:	Ludlum	Model Number:	44-62	Serial Number:	PR260807

✔ Mechanical Check ✔ Geotropism ✔ THR/WIN Operation ✔ Audio Check ✔ Battery Check (Min 4.4 VDC)
✔ F/S Response Check ✔ Meter Zeroed ✔ Reset Check HV Check (+/- 2.5%): ✔ 500 V ✔ 1000 V ✔ 1500 V
Source Distance: ☐ Contact ✔ 6 inches ☐ Other: Cable Length: ☐ 39-inch ☐ 72-inch ✔ Other: 15'
Source Geometry: ✔ Side ☐ Below ☐ Other: Temperature: 73 °F Relative Humidity 20 %
Threshold: 10 mV Window: Barometric Pressure: 24.6 inches Hg
Instrument found within tolerance: ✔ Yes ☐ No

Range/Multiplier	Reference Setting	"As Found Reading"	Meter Reading	Integrated 1-Min. Count	Log Scale Count
x 1000	400	400	400	399701	400
x 1000	100	100	100		100
x 100	40	400	400	39983	400
x 100	10	100	100		100
x 10	4	400	400	399	400
x 10	1	100	100		100
x 1	400	400	400	400	400
x 1	100	100	100		100

High Voltage	Source Counts	Background
500	3512	
600	5104	
650	5207	
700	5311	871
750	5300	
800	5397	
850	6731	
900	16454	

Voltage Plateau



Comments: HV Plateau Scaler Count Time = 1-min. Recommended HV = 700

Reference Instruments and/or Sources:

Ludlum pulser serial number: ☐ 97743 ✔ 201932 Fluke multimeter serial number: ☐ 8749012
☐ Alpha Source: Th-230 @ 13,000 dpm (1/13/10) sn: 4098-03 ✔ Gamma Source Cs-137 @ 5.37 uCi (1/13/10) sn: 4097-03
☐ Beta Source: Tc-99 @ 7,700 dpm (1/13/10) sn: 4099-03 ☐ Other Source:

Calibrated By: Calibration Date: 7-7-11 Calibration Due: 7-7-12

Reviewed By: Review Date: 7/7/11

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.
NMRCB Registration No. 921-3 * Calibration of Radiation Detection Instrument Devices

Environmental Restoration Group, Inc.
8809 Washington NE, Ste. 150
Albuquerque, NM 87113

ph: 505.298.4224
fax: 505.797-1404
web: www.ERGOffice.com

EQUIPMENT PACKING SLIP

Company Name: SAIC
Order Number: 2040
Contact Name: Bob French
P.O. or Reference Number:
Contact Telephone:

Date Ordered: 07/07/11
Shipping Method:
Date Shipped: 07/08/11
Shipping Number: ERG FedEx Number
Date of Delivery: 07/09/11

Ship To Information:
Bob French
SAIC
13397 Lakefront Dr.
Suite 100
Earth City, MO 63045

Billing Address:
SAIC - C.C.
Candace Martinez

Equipment Enclosed:

Instrument	*Serial Number*
Ludlum 2221r	138377
Ludlum 44-62	PR260807

Special Instructions:

None

Daily Check-In of Dose Rate Instruments

METER : Micro R 'C'

DATE (MO/YR): July 2011

Source		Acceptance Criteria			
Type	Cs-137	Source QC (micro-R/hr)		Scale	
Number	SN-5780-07	192	to 288	x 500	

	Model	Number	Cal. Due
Meter	19	209723	5/17/2012
Detector	na	na	na

Date	Time	Reading	Pre-op Check	Bat Check	Initial	Comments
7-11-11	1236	240	SAT	SAT	R	On contact.
7-12-11	0700	240	SAT	SAT	R	On contact.
7-13-11	0645	230	SAT	SAT	R	On contact.
7-14-11	0630	220	SAT	SAT	R	On contact.
7-15-11	0630	220	SAT	SAT	R	On contact.
7-16-11	0630	220	SAT	SAT	R	On contact.
7-17-11	0630	240	SAT	SAT	R	On contact.
					N/A	

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in.

Reviewed By : _____ (RPM/Designee)

Date : 2/24/11

Exposure Rate Meter Setup Record

Date : 7/11/2011 Location : Staten Island

Instrument Type : Mircro R Instrument Serial Number : 209723

Instrument Range	Source	Source Position	Observed Exposure Rate[1] mR/hr uR/hr	Acceptance Criteria[1,2] mR/hr uR/hr
x25	BKG	na	10	8-12
x500	SN-5780-07	contact	240	192-288
		N/A		

[1] Circle correct units.
[2] ± 20% of observed exposure rate.

Comments/Restrictions: N/A

Calculated By : _____ Date : 7/11/11

Approved By : _____ Date: 7/24/11

of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SAIC ORDER NO. 20176000/363307

Mfg. Ludlum Measurements, Inc. Model 19 Serial No. 209723

Model Serial No.

Cal. Date 17-May-11 Cal Due Date 17-May-12 Cal. Interval 1 Year Meterface 202-1070

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 73 °F RH 28 % Alt 700.8 mm Hg

☐ New Instrument Instrument Received ☑ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☑ Background Subtract ☐ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☐ Window Operation ☑ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 2.2 VDC

☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 740 V Input Sens. 30 mV Det. Oper. V at mV Threshold Dial Ratio = mV

☐ HV Readout (2 points) Ref./Inst. / V Ref./Inst. / V

COMMENTS:

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
5000	4000µR/hr	4400	4000
5000	1000µR/hr	1100	1000
500	400µR/hr = 75200cpm	400	400
500	100µR/hr	100	100
250	200µR/hr = 38500cpm	210	200
250	100µR/hr	105	100
50	7520 cpm	40	40
50	1880 cpm	10	10
25	3850 cpm	21	20
25	962 cpm	5.2	5

*Uncertainty within ± 10% C.F. within ± 20%

Range(s) Calibrated Electronically

Digital Readout: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	Log Scale: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: ☐ 73410 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646 ☐ 70897

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☑ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☐ Other

☑ m 500 S/N 190566 ☐ Oscilloscope S/N ☑ Multimeter S/N 86250390

Calibrated By: Date 17-May-11

Reviewed By: Date 17 May 11

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test Failed:

INSTRUMENTATION QC CHECK LOG

METER : 43-10-1

DATE (MO/YR) : July 2011

Meter		Acceptance Criteria			
Number	Cal. Due	Bkgrd. QC (cpm) range		Source QC (ncpm) range	
166716	4/26/2012	Alpha	Beta	Alpha	Beta
Detector		0.0	40	9290	3689
Number	Cal. Due	to	to	to	to
170380	4/26/2012	0.5	54	13935	5533

Alpha			
Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
Th - 230	SN-5777-07	37.2%	0.1
Beta			
Source Type	Source Number	Inst. Efficiency	Inst. Avg. Bkgrd.
SrY - 90	SN-5781-07	29.7%	47

Date	Time	Bkgrd. QC (cpm)		Source QC (ncpm) range		Bat. Check	QC[1]	HPT	Comment
		Alpha	Beta	Alpha	Beta	Sat/Unsat	Sat/Unsat	Initial	
7/11/11	1236	0	41	11552	4670	SAT	SAT	R	
7/12/11	0200	0.3	44	11244	4494	SAT	SAT	R	
7/13/11	0645	0.1	41	11626	4696	SAT	SAT	R	
7/14/11	0630	0.3	48	11442	4620	SAT	SAT	R	
7/15/11	0630	0	47	11091	4637	SAT	SAT	R	
7/16/11	0630	0	48	11200	4593	SAT	SAT	R	
7/17/11	0630	0.1	51	11431	4615	SAT	SAT	R	
					NA				

[1] An unsatisfactory QC check requires recording the result in the comment column and repeating the evaluation. Tag the instrument out of service and notify the HP Supervisor upon failing the QC check two times in succession.

Reviewed By : _____ (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	166716	Detector Number:	170380
Meter Model:	2929	Detector Model:	43-10-1
Cal. Due:	4/26/2012	Cal. Due:	4/26/2012

ALPHA	Source Type:	Th - 230	Threshold:	175			
ALPHA	Source #:	SN-5777-07	High Voltage:	825			
ALPHA	Source Activity:	31,199					
ALPHA	Source count time:	1	(min) Background count time:	10	(min)		
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	0.1			
ALPHA	11,675	0.0	Average Source (GCPM):	11,613			
ALPHA	11,650	0.1	Average Net Source (NCPM):	11,613			
ALPHA	11,604	0.2	Source Range (GCPM):	9,290	to	13,935	
ALPHA	11,526	0.0	Background Range (CPM):	0.0	to	0.5	
ALPHA	11,569	0.1	Determined Efficiency:	37.2%			
ALPHA	11,813	0.0					
ALPHA	11,386	0.1	20% of Bkg.	0.0			
ALPHA	11,716	0.1	1 Standard Deviation of Bkg.	0.1			
ALPHA	11,602	0.4	3 Standard Deviations of Bkg.	0.4			
ALPHA	11,589	0.0					

Beta / Gamma (circle one)

BETA	Source Type:	SrY - 90	Threshold:	4			
BETA	Source #:	SN-5781-07	High Voltage:	825			
BETA	Source Activity:	15,362					
BETA	Source count time:	1	(min) Background count time:	10	(min)		
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	47			
BETA	4,660	49	Average Source (GCPM):	4,611			
BETA	4,661	49	Average Net Source (NCPM):	4,563			
BETA	4,616	46	Source Range (GCPM):	3,689	to	5,533	
BETA	4,644	43	Background Range (CPM):	40	to	54	
BETA	4,575	51	Determined Efficiency:	29.7%			
BETA	4,540	48					
BETA	4,581	49	20% of Bkg.	9			
BETA	4,667	48	1 Standard Deviation of Bkg.	2			
BETA	4,587	47	3 Standard Deviations of Bkg.	7			
BETA	4,576	45					

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

ALPHA

MDA for Benchtop Counters:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	10
Gross count time =	1.0
MDA (dpm/100cm2) =	11.0

NCD = < 4.2

MDC for Air Samples:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	720
Gross count time =	92
Volume =	720
Collection Efficiency =	0.99
MDC =	2.5E-13

MDC for AE Air Samples:

Efficiency (%) =	0.3722
Background (cpm) =	0.1
Background count time =	720
Gross count time =	60
Volume =	30000
Collection Efficiency =	0.99
MDC =	7.7E-15

BETA

MDA for Benchtop Counters:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	10
Gross count time =	1.0
MDA (dpm/100cm2) =	90.0

NCD = < 74.0

MDC for Air Samples:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	720
Gross count time =	60.0
Volume =	720.00
Collection Efficiency =	0.99
MDC =	6.6E-12

MDC for AEAir Samples:

Efficiency (%) =	0.2971
Background (cpm) =	47.3
Background count time =	720
Gross count time =	60.0
Volume =	30000.00
Collection Efficiency =	0.99
MDC =	0.0

Alpha Beta Calibration Report

"B"

Date Calibrated: 04/27/2011 1:49:40 PM Order Number: SAIC HARRISBURG20110427-004

Technician: B. French Customer: SAIC HARRISBURG

Repair Instrument

Serial Number: 170380 Manufacturer: Ludlum Model: 43-10-1 Last Calibrated: 1/25/2011

Reason for recalibration: Due for Calibration

Calibration Instrument

Serial Number: 166716 Inst. Type: 2929 Calibration Due: 4/26/2012

Calibration Sources

Alpha Source ID: SAIC-0053 Isotope: Th-230 Current Activity: 20298.05 dpm Assay Date: 11/6/2000

Beta Source ID: SAIC-0054 Isotope: SrY-90 Current Activity: 12984.27 dpm Assay Date: 11/15/2000

Alpha as Foun	Beta as Found	Alpha as Left	Beta as Left
Background 1 min. counts	Background 1 min. counts	Background 1 min. counts 0	Background 1 min. counts 37
Source 1 min. counts NA	Source 1 min. counts NA	Source 1 min. counts 7464	Source 1 min. counts 5555
% efficiency: 0	% efficiency: 0	% efficiency: 36.77	% efficiency: 42.5

Alpha Threshold: * 175mV High Voltage: 825V

Beta Threshold: * 4mV Beta Window: * 50mV Next Calibration Due: 4/26/2012

* **Recommended Manufacturer Value**

Comments

Performed By: B. French Date: 4/27/11

Reviewed By Date: 4/27/11

Scaler/Ratemeter Calibration Report

Date Calibrated: 04/27/2011 1:45:21 PM Order Number: SAIC HARRISBURG20110427-003
Technician: B. French Customer: SAIC HARRISBUI
Temperature (F): 68 Humidity (%): 32 Altitude (asl): 660 Barametric Pressure ("Hg): 28.88

Repair Instrument

Serial Number: 166716 Manufacturer: Ludlum Model: 2929 Meterface: 202-014
Received: Within 10%
Last Calibrated: 1/25/2011 Calibration Interval: 1 yr. Next Calibration Due: 4/26/2012

- [x] Mechanical OK
- [x] Meter Zeroed
- [ ] Battery Ck. - Min. Volt.
- [ ] Input Sens. Linearity
- [ ] F/S Resp. OK
- [ ] Reset OK
- [x] Geotropism
- [x] Window Operation
- [x] Audio OK
- [ ] Alarm Setting OK
- [ ] Background Subtract
- [x] Voltage Set — 825 V at (see comments)mV — Det. Op. 825 V at (see comments)mV — Threshold Dial ratio: N/A
- [x] HV readout — Ref. 1 498Volts Inst. 1 500Volts — Ref. 2 2013Volts Inst. 2 2000 Volts
- [x] Calibrated in accordance with ANSI N323A-1997 and the manufacturer's procedure

- [x] m500 ser. # 201462
- [ ] Other ser. #
- [x] Multimeter ser. # 93470436
- [ ] Oscilloscope ser. #

CTV* Digital Alpha / CTV* Digital Beta

Reference Pt.	Inst. as Found	Inst. as Left	Reference Pt.	Inst. as Found	Inst. as Left
400 K cpm	399946 cpm	399988 cpm	400 K cpm	399920 cpm	400060 cpm
40 K cpm	39999 cpm	39993 cpm	40 K cpm	39990 cpm	40008 cpm
4 K cpm	4000 cpm	4000 cpm	4 K cpm	4000 cpm	4000 cpm
400 cpm	400 cpm	400 cpm	400 cpm	400 cpm	400 cpm
40 cpm	40 cpm	40 cpm	40 cpm	40 cpm	40 cpm

* Conventionally True Value ** Uncertainty within +/- 10% All range(s) calibrated electronically

Comments

Performed By: [signature] Date: 4/27/11
Reviewed By [signature] Date: 4/27/11

Plateau Calibration

Model # 43-10-1
Serial # 170380
Alpha Source I.D SAIC-0053
Beta Source I D. SAIC-0054

Alpha Input Senitivity 175mV
Beta Input Senitivity 4mV
Beta Window 50mV
Distance Source to Detector tray

High Voltage	Background Alpha	Background Beta	Source Alpha	Source Beta	Pot Setting
500			/	/	
525			/	/	
550			/	/	
575			/	/	
600			/	/	
625			/	/	
650			/	/	
675			/	/	
700			/	/	
725			/	/	
750	0	34	7072 / 438	4712 / 4	2.94
775	0	39	7410 / 460	5352 / 2	3.04
800	0	40	7500 / 534	5588 / 3	3.14
825	0	37	7464 / 678	5555 / 2	3.24
850	0	41	7617 / 806	5735 / 7	3.34
875	0	63	7718 / 976	5647 / 10	3.44
900	0	49	7578 / 1287	5405 / 29	3.54
925	1	88	7833 / 1600	5167 / 46	3.64
950			/	/	
975			/	/	
1000			/	/	
1025			/	/	
1050			/	/	
1075			/	/	
1100			/	/	
1125			/	/	
1150			/	/	
1175			/	/	
1200			/	/	
1225			/	/	
1250			/	/	
1275			/	/	
1300			/	/	
1325			/	/	
1350			/	/	
1375			/	/	
1400			/	/	
1425			/	/	
1450			/	/	
1475			/	/	
1500			/	/	

High Voltage Set 825 V
Reviewed By [signature] Date: 4/27/11

INSTRUMENTATION QC CHECK LOG

METER : 44-62 DATE (MO/YR): July 2011

Source		Acceptance Criteria					Model	Number	Cal. Due
Type	Cs-137	Bkgrd. QC (cpm) range		Source QC (cpm) range		Meter	2221	138377	7/7/2012
Number	SN-5780-07	745 to 870		43,286 to 64,929		Detector	44-62	260807	7/7/2012
Date	Time	Pre-use Bkg cpm	Post Bkg cpm[1]	Pre-use Source cpm	Post Source cpm[1]	Bat. Check Sat/Unsat	QC[1] Sat/Unsat	Pre-use HPT Initial	Post HPT Initial
7-11-11	1236	823	NA	54008	NA	SAT	SAT	R	NA
7-12-11	0700	808	769	51968	53277	SAT	SAT	R	R
7-13-11	0645	842	799	52136	52996	SAT	SAT	R	R
7-14-11	0630	773	784	52657	51732	SAT	SAT	R	R
7-15-11	0630	756	801	53581	52848	SAT	SAT	R	R
7-16-11	0630	761	NA	52319	NA	SAT	SAT	R	NA
7-17-11	0630	755	NA	54826	NA	SAT	SAT	R	NA

NA

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in

Reviewed By : [signature] (RPM/Designee) Date : 7/24/11

Initial Instrument Check In

Meter Number:	138377	Detector Number:	260807
Meter Model:	2221	Detector Model:	44-62
Cal. Due:	7/7/2012	Cal. Due:	7/7/2012

ALPHA	Source Type:		Threshold:			
ALPHA	Source #:		High Voltage:			
ALPHA	Source Activity:					
ALPHA	Source count time:		(min) Background count time:		(min)	
ALPHA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	#DIV/0!		
ALPHA			Average Source (GCPM):	#DIV/0!		
ALPHA			Average Net Source (NCPM):	#DIV/0!		
ALPHA			Source Range (GCPM):	#DIV/0!	to	#DIV/0!
ALPHA			Background Range (CPM):	#DIV/0!	to	#DIV/0!
ALPHA			Determined Efficiency:	#DIV/0!		
ALPHA						
ALPHA			20% of Bkg.	#DIV/0!		
ALPHA			1 Standard Deviation of Bkg.	#DIV/0!		
ALPHA			3 Standard Deviations of Bkg.	#DIV/0!		
ALPHA						

Beta / Gamma (circle one)

BETA	Source Type:	Cs-137	Threshold:	10		
BETA	Source #:	SN-5780-07	High Voltage:	700		
BETA	Source Activity:	0.91 uCi				
BETA	Source count time:	1	(min) Background count time:	1	(min)	
BETA	**Source GCPM**	**BKG CPM**	Average Bkg. (CPM):	807		
BETA	53,989	816	Average Source (GCPM):	54,108		
BETA	54,221	811	Average Net Source (NCPM):	53,300		
BETA	54,079	764	Source Range (GCPM):	43,286	to	64,929
BETA	54,241	795	Background Range (CPM):	745	to	870
BETA	53,817	840	Determined Efficiency:	NA		
BETA	54,137	809				
BETA	54,131	792	20% of Bkg.	161		
BETA	54,044	824	1 Standard Deviation of Bkg.	21		
BETA	54,275	820	3 Standard Deviations of Bkg.	62		
BETA	54,143	802				

Performed By: _____ Date: 7/11/11

Reviewed By: _____ Date: 7/24/11
(RPM / Asst. RPM)

Certificate of Calibration

Calibration and Voltage Plateau

Environmental Restoration Group, Inc.
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224
www.ERGoffice.com

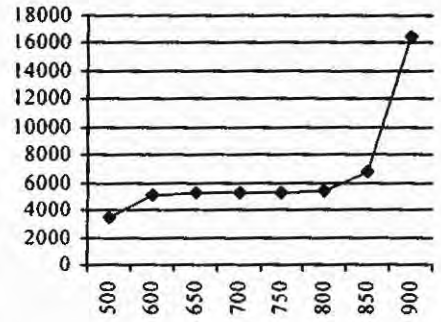
Meter:	Manufacturer:	Ludlum	Model Number:	2221r	Serial Number:	138377
Detector:	Manufacturer:	Ludlum	Model Number:	44-62	Serial Number:	PR260807

✔ Mechanical Check ✔ Geotropism ✔ THR/WIN Operation ✔ Audio Check ✔ Battery Check (Min 4.4 VDC)
✔ F/S Response Check ✔ Meter Zeroed ✔ Reset Check HV Check (+/- 2.5%): ✔ 500 V ✔ 1000 V ✔ 1500 V
Source Distance: ☐ Contact ✔ 6 inches ☐ Other: Cable Length: ☐ 39-inch ☐ 72-inch ✔ Other: 15'
Source Geometry: ✔ Side ☐ Below ☐ Other: Temperature: 73 °F Relative Humidity 20 %
Threshold: 10 mV Window: Barometric Pressure: 24.6 inches Hg
Instrument found within tolerance: ✔ Yes ☐ No

Range/Multiplier	Reference Setting	"As Found Reading"	Meter Reading	Integrated 1-Min. Count	Log Scale Count
x 1000	400	400	400	399701	400
x 1000	100	100	100		100
x 100	40	400	400	39983	400
x 100	10	100	100		100
x 10	4	400	400	399	400
x 10	1	100	100		100
x 1	400	400	400	400	400
x 1	100	100	100		100

High Voltage	Source Counts	Background
500	3512	
600	5104	
650	5207	
700	5311	871
750	5300	
800	5397	
850	6731	
900	16454	

Voltage Plateau



Comments: HV Plateau Scaler Count Time = 1-min. Recommended HV = 700

Reference Instruments and/or Sources:

Ludlum pulser serial number: ☐ 97743 ✔ 201932 Fluke multimeter serial number: ☐ 8749012
☐ Alpha Source: Th-230 @ 13,000 dpm (1/13/10) sn: 4098-03 ✔ Gamma Source Cs-137 @ 5.37 uCi (1/13/10) sn: 4097-03
☐ Beta Source: Tc-99 @ 7,700 dpm (1/13/10) sn: 4099-03 ☐ Other Source:

Calibrated By: Calibration Date: 7-7-11 Calibration Due: 7-7-12

Reviewed By: Review Date: 7/7/11

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.
NMRCB Registration No. 921-3 * Calibration of Radiation Detection Instrument Devices

Environmental Restoration Group, Inc.
8809 Washington NE, Ste. 150
Albuquerque, NM 87113

ph: 505.298.4224
fax: 505.797-1404
web: www.ERGOffice.com

EQUIPMENT PACKING SLIP

Company Name: SAIC
Order Number: 2040
Contact Name: Bob French
P.O. or Reference Number:
Contact Telephone:

Date Ordered: 07/07/11
Shipping Method:
Date Shipped: 07/08/11
Shipping Number: ERG FedEx Number
Date of Delivery: 07/09/11

Ship To Information:
Bob French
SAIC
13397 Lakefront Dr.
Suite 100
Earth City, MO 63045

Billing Address:
SAIC - C.C.
Candace Martinez

Equipment Enclosed:

Instrument	*Serial Number*
Ludlum 2221r	138377
Ludlum 44-62	PR260807

Special Instructions:

None

Daily Check-In of Dose Rate Instruments

METER : Micro R 'C'

DATE (MO/YR): July 2011

Source		Acceptance Criteria			
Type	Cs-137	Source QC (micro-R/hr)		Scale	
Number	SN-5780-07	192	to 288	x 500	

	Model	Number	Cal. Due
Meter	19	209723	5/17/2012
Detector	na	na	na

Date	Time	Reading	Pre-op Check	Bat Check	Initial	Comments
7-11-11	1236	240	SAT	SAT	R	On contact.
7-12-11	0700	240	SAT	SAT	R	On contact.
7-13-11	0645	230	SAT	SAT	R	On contact.
7-14-11	0630	220	SAT	SAT	R	On contact.
7-15-11	0630	220	SAT	SAT	R	On contact.
7-16-11	0630	220	SAT	SAT	R	On contact.
7-17-11	0630	240	SAT	SAT	R	On contact.
					N/A	

[1] Gamma scan Instruments used for confirmation or verification surveys require a post check-in.

Reviewed By : _____ (RPM/Designee)

Date : 2/24/11

Exposure Rate Meter Setup Record

Date : 7/11/2011 Location : Staten Island

Instrument Type : Mircro R Instrument Serial Number : 209723

Instrument Range	Source	Source Position	Observed Exposure Rate[1] mR/hr uR/hr	Acceptance Criteria[1,2] mR/hr uR/hr
x25	BKG	na	10	8-12
x500	SN-5780-07	contact	240	192-288
		N/A		

[1] Circle correct units.
[2] ± 20% of observed exposure rate.

Comments/Restrictions: N/A

Calculated By : _____ Date : 7/11/11

Approved By : _____ Date: 7/24/11

of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER SAIC ORDER NO. 20176000/363307

Mfg. Ludlum Measurements, Inc. Model 19 Serial No. 209723

Model Serial No.

Cal. Date 17-May-11 Cal Due Date 17-May-12 Cal. Interval 1 Year Meterface 202-1070

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 73 °F RH 28 % Alt 700.8 mm Hg

☐ New Instrument Instrument Received ☑ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☑ Background Subtract ☐ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☐ Window Operation ☑ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 2.2 VDC

☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☐ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 740 V Input Sens. 30 mV Det. Oper. V at mV Threshold Dial Ratio = mV

☐ HV Readout (2 points) Ref./Inst. / V Ref./Inst. / V

COMMENTS:

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
5000	4000µR/hr	4400	4000
5000	1000µR/hr	1100	1000
500	400µR/hr = 75200cpm	400	400
500	100µR/hr	100	100
250	200µR/hr = 38500cpm	210	200
250	100µR/hr	105	100
50	7520 cpm	40	40
50	1880 cpm	10	10
25	3850 cpm	21	20
25	962 cpm	5.2	5

*Uncertainty within ± 10% C.F. within ± 20%

Range(s) Calibrated Electronically

Digital Readout: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*	Log Scale: REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: ☐ 73410 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646 ☐ 70897

Cs-137 Gamma S/N ☐ 1162 ☐ G112 ☑ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☐ Other

☑ m 500 S/N 190566 ☐ Oscilloscope S/N ☑ Multimeter S/N 86250390

Calibrated By: Date 17-May-11

Reviewed By: Date 17 May 11

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test Failed:

F1G190456

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: Staten Island, NY FUSRAP Site

Analytical Due Date: 2011-08-09

PO#: | Report to: Barry Kinsall

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 14

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	SIW-SS-DUP-001			2011-07-15 / 0	MK1PV	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	SIW-SS-DUP-002			2011-07-16 / 0	MK1PX	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	SIW-SS-DUP-003			2011-07-16 / 0	MK1P1	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	SIW-SS-DUP-004			2011-07-16 / 0	MK1P3	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	SIW-SS-DUP-005			2011-07-17 / 0	MK1P7	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
6	SIW-SS-037P-0.0-2.0			2011-07-17 / 925	MK1P8	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190456

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: Staten Island, NY FUSRAP Site

PO#: | Report to: Barry Kinsall

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 14

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
7	SIW-SS-038P-0.0-2.0			2011-07-17 / 947	MK1P9	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
8	SIW-SS-039P-0.0-2.0			2011-07-17 / 1240	MK1QA	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
9	SIW-SS-040P-0.0-2.0			2011-07-17 / 1140	MK1QC	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
10	SIW-SS-041P-0.0-2.0			2011-07-17 / 1120	MK1QD	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
11	SIW-SS-042P-0.0-2.0			2011-07-17 / 1013	MK1QE	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
12	SIW-SS-043P-0.0-2.0			2011-07-17 / 1200	MK1QF	SOLID

SAMPLE COMMENTS:

F1G190456

CLIENT ANALYSIS SUMMARY

Storage Loc: **RAD**

Project Manager: LMF
Quote #: 89198 SDG:
Project: Staten Island, NY FUSRAP Site
PO#: Report to: Barry Kinsall
Client: 509018 GEO Consultants LLC
#SMPS in LOT: 14

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
EDD Code: 00

CRM DOE #6d Rev 1

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
13	SIW-SS-044P-0.0-2.0			2011-07-17 / 1230	MK1QG	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
14	SIW-SS-045P-0.0-2.0			2011-07-17 / 1155	MK1QH	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GEO Consultants LLC	Todd Buchanan		189479
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 2
375 Kentucky Ave	2704623982 / 2704623887		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Kevil / KY / 42053			
Project Name and Location (State)	**Carrier/Waybill Number**		
SIW - Staten Island, New York			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: RAD	Special Instructions/ Conditions of Receipt
SIW-SS-037P-0.0-2.0	7-17-11	0925				X	X						X	1X500P
SIW-SS-038P-0.0-2.0	7-17-11	0947				X	X						X	
SIW-SS-039P-0.0-2.0	7-17-11	1240				X	X						X	
SIW-SS-040P-0.0-2.0	7-17-11	1140				X	X						X	
SIW-SS-041P-0.0-2.0	7-17-11	1120				X	X						X	
SIW-SS-042P-0.0-2.0	7-17-11	1013				X	X						X	1X500G
SIW-SS-043P-0.0-2.0	7-17-11	1200				X	X						X	1X500P
SIW-SS-044P-0.0-2.0	7-17-11	1230				X	X						X	1X500G
SIW-SS-045P-0.0-2.0	7-17-11	1155				X	X						X	1X500P

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By			1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

L-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189480
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
City / State / Zip Code	Site Contact	Lab Contact	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: RAD	Special Instructions/ Conditions of Receipt
SIW-SS-025MS-0.0-2.0	7-16-11	1645				X	X						X	1X500P
SIW-SS-025MSD-0.0-2.0	7-16-11	1645				X	X						X	
SIW-SS-033MS-0.0-2.0	7-16-11	1422				X	X						X	
SIW-SS-033MSD-0.0-2.0	7-16-11	1422				X	X						X	
SIW-SS-039MS-0.0-2.0	7-17-11	1240				X	X						X	
SIW-SS-039MSD-0.0-2.0	7-17-11	1240				X	X						X	
SIW-SS-DUP-001	7-15-11	—				X	X						X	
SIW-SS-DUP-002	7-16-11	—				X	X						X	
SIW-SS-DUP-003	7-16-11	—				X	X						X	
SIW-SS-DUP-004	7-16-11	—				X	X						X	
SIW-SS-DUP-005	7-17-11	—				X	X						X	1X500G

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
				7/19/11	0920
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO Consultants
Quote No: 89198
COC/RFA No: SEE BELOW
Initiated By: MVD Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 7973 1271 4970
2. 4672
3. 4937
4. 4558
5. 4801
6. 7973 1271 5072
7. 4591
8. 4709
9. 4812
10.

Sample Temperature (s):**

1. AMBIENT
2.
3.
4.
5.
6. AMBIENT
7.
8.
9. 2
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189477, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

UF = Unfiltered F = filtered
09F-01, -02, -03, -04 – These are the same pt totally 4 liters. This is across the board.
P = Primary. P, MS & MSD are same sample.
010 & 010 Are the same sample.
LMF 7/19/11

SW GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:
Client Contact Name: _____ Informed by: _____
Sample(s) processed "as is"
Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: [illegible] Date: ~~7/19~~ 7/21/11 LMF

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

F1G190461

CLIENT ANALYSIS SUMMARY

Storage Loc: R139/144

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | Staten Island, NY FUSRAP Site

Analytical Due Date: 2011-08-09

D#: | Report to: Barry Kinsall

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 14

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	SIW-GW-16F			2011-07-17 / 1345	MK1P4	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	SIW-GW-16UF			2011-07-17 / 1345	MK1QJ	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	SIW-GW-FDUP			2011-07-17 / 0	MK1QK	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	SIW-GW-UFDUP			2011-07-17 / 0	MK1QR	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	SIW-GW-026UF			2011-07-17 / 1046	MK1QT	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	SIW-GW-026F			2011-07-17 / 1058	MK1QW	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	SIW-GW-023UF			2011-07-17 / 955	MK1Q0	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	SIW-GW-023F			2011-07-17 / 1018	MK1Q1	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	SIW-GW-05UF			2011-07-17 / 900	MK1Q2	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1G190461

CLIENT ANALYSIS SUMMARY

Storage Loc: R139/144

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | Staten Island, NY FUSRAP Site

Analytical Due Date: 2011-08-09

)#: | Report to: Barry Kinsall

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 14 EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	SIW-GW-05F			2011-07-17 / 916	MK1Q3	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
11	SIW-GW-09F			2011-07-17 / 1415	MK1Q4	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
12	SIW-GW-09UF			2011-07-17 / 1415	MK1Q8	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	SIW-GW-010UF			2011-07-17 / 1205	MK1Q9	WATER

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
S	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1G190461

CLIENT ANALYSIS SUMMARY

Storage Loc: R139/144

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: Staten Island, NY FUSRAP Site

Analytical Due Date: 2011-08-09

#: Report to: Barry Kinsall

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS In LOT: 14

EDD Code: 00

CRM DOE #6d Rev 1

S	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	SIW-GW-010F			2011-07-17 / 1206	MK1RD	WATER

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
D	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
S	XX	Y9	EPA	900.0 MOD	WATER, 900.0 MOD, Gross A/B	FR	Evaporative Preparation, Total	01	STANDARD TEST SET	PROT: B	WRK LOC	06
S	XX	Z4	EPA	904 MOD	WATER, 904 MOD, Radium 228	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	ZY	EPA	903.0 MOD	WATER, 903.0 MOD, Radium 226	G2	Precipitate, Separation - 21 day Ingrowth	01	STANDARD TEST SET	PROT: B	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06

Y2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. PAH
PM/ Quote#		Work Order		B.
Company	GEO Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-016FP-02	7-17-11	1345	Water	1L Plastic	HNO3	1	X									
2	SIW-GW-FDUP-08		—					X									
3	SIW-GW-UFDUP-04		—					X									
4	SIW-GW-FDUP-07		—					X									
5	SIW-GW-FDUP-05		—					X									
6	SIW-GW-FDUP-016		—					X									
7	SIW-GW-UFDUP-01		—					X									
8	SIW-GW-UFDUP-02		—					X									
9	SIW-GW-UFDUP-03		—					X									
10	SIW-GW-05UFP-04		0900					X									

Shipment Method: FedEx | Airbill No.: | Required Turnaround:

Relinquished by:	Date: 7-18-11	Relinquished by:	Date	Relinquished by:	Date
Company Name: GEO Consultants LLC	Time: 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date: 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TASL	Time: 0925

2/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. RAD
PM/ Quote#		Work Order		B.
Company	GEO Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-005UFP-03	7-17-11	0900	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-005UFP-01	"	0900	"	"	"	"	X									
3	SIW-GW-005FP-06	"	0916	"	"	"	"	X									
4	SIW-GW-005UFP-02	"	0900	"	"	"	"	X									
5	SIW-GW-005FP-07	"	0916	"	"	"	"	X									
6	SIW-GW-005FP-08	"	0916	"	"	"	"	X									
7	SIW-GW-005FP-05	"	0916	"	"	"	"	X									
8	SIW-GW-016FP-01	↓	1345	↓	↓	↓	↓	X									
9																	
10																	

Shipment Method: FedEx | Airbill No.: | Required Turnaround:

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GEO Consultants LLC	Time 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TASL	Time 0928

1/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. RAD
PM/ Quote#		Work Order		B.
Company	GEO Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kewl KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-009UFP-01	7-17-11	1415	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-016FP-03	7-17-11	1345	Water	"	"	"	X									
3	SIW-GW-016UFP-04	7-17-11	1345	Water	"	"	"	X									
4	SIW-GW-009UFP-04	7-17-11	1415	Water	"	"	"	X									
5	SIW-GW-016FP-04	7-17-11	1345	Water	"	"	"	X									
6	SIW-GW-010FMS-04	7-17-11	1206	Water	"	"	"	X									
7	SIW-GW-009FP-02	7-17-11	1415	Water	"	"	"	X									
8	SIW-GW-009UFP-03	7-17-11	1415	Water	"	"	"	X									
9	SIW-GW-009UFP-02	7-17-11	1415	Water	"	"	"	X									
10	SIW-GW-009FP-04	7-17-11	1415	Water	"	"	"	X									

Shipment Method: FedEx | Airbill No.: | Required Turnaround:

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GEO Consultants LLC	Time 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TMSL	Time 0920

2/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. Pest
PM/ Quote#		Work Order		B.
Company	GSD Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kenil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-009FD-03	7-17-11	1415	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-009FP-01		1415					X									
3	SIW-GW-016UFP-02		1345					X									
4	SIW-GW-010FMSD-01		1206					X									
5	SIW-GW-010FMSD-04		1706					X									
6	SIW-GW-016UFP-01		1345					X									
7	SIW-GW-010FMSD-03		1206					X									
8	SIW-GW-016UFP-03	↓	1345	↓	↓	↓	↓	X									
9																	
10																	

RJ 8/17/11

Shipment Method:	Airbill No.:	Required Turnaround:
FedEx		

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GSD Consultants LLC	Time 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TASL	Time 0920

1/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. Rad
PM/ Quote#		Work Order		B.
Company	GEO Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-026FP-08	7-17-11	1058	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-026UFP-03		1046					X									
3	SIW-GW-023FP-08		1018					X									
4	SIW-GW-023FP-06		1018					X									
5	SIW-GW-023FP-05		1018					X									
6	SIW-GW-026FP-05		1058					X									
7	SIW-GW-026FP-06		1058					X									
8	SIW-GW-026UFP-01		1046					X									
9	SIW-GW-023FP-07		1018					X									
10	SIW-GW-023UFP-04	↓	0955	↓	↓	↓	↓	X									

	Shipment Method:	Airbill No.:	Required Turnaround:
	FedEx		

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name:	Time	Company Name:	Time	Company Name:	Time
GEO Consultants LLC	0900				
Received by:	Date	Received by:	Date	Received by:	Date
					7.19.11
Company Name:	Time	Company Name:	Time	Company Name:	Time
				TBT	0920

2/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. RAD
PM/ Quote#		Work Order		B.
Company	GSD Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-023UFP-03	7-17-11	0955	Water	1L Plastic	HNO3	1	X									
2	SIW-GW-023UFP-01		0955					X									
3	SIW-GW-023UFP-02		0955					X									
4	SIW-GW-026UFP-04		1046					X									
5	SIW-GW-026UFP-02		1046					X									
6	SIW-GW-010FMS-03		1206					X									
7	SIW-GW-026FP-07	↓	1058	↓	↓	↓	↓	X									
8																	
9																	
10																	

Shipment Method:	Airbill No.:	Required Turnaround:
FEDEX		

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GSD Consultants LLC	Time 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TASL	Time 0920

1/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. RAD
PM/ Quote#		Work Order		B.
Company	GEO Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-010FMS-02	7-17-11	1206	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-010UFMSD-02	↓	↓	↓	↓	↓	↓	X									
3	SIW-GW-010UFMS-02	↓	↓	↓	↓	↓	↓	X									
4	SIW-GW-010UFMS-03	↓	↓	↓	↓	↓	↓	X									
5	SIW-GW-010UFP-02	↓	↓	↓	↓	↓	↓	X									
6	SIW-GW-010UFP-04	↓	↓	↓	↓	↓	↓	X									
7	SIW-GW-010UFMS-04	↓	↓	↓	↓	↓	↓	X									
8	SIW-GW-010UFMSD-01	↓	↓	↓	↓	↓	↓	X									
9	SIW-GW-010FMSD-02	↓	↓	↓	↓	↓	↓	X									
10	SIW-GW-010FMS-01	↓	↓	↓	↓	↓	↓	X									

	Shipment Method: FEDEX	Airbill No.:		Required Turnaround:	
Relinquished by: [signature]	Date 7-18-11	Relinquished by:	Date	Relinquished by:	Date
Company Name: GEO Consultants LLC	Time 0900	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by: [signature]	Date 7-19-11
Company Name:	Time	Company Name:	Time	Company Name: TMSL	Time 0920

2/2

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. PLAD
PM/ Quote#		Work Order		B.
Company	GSD Consultants LLC	Bill To		C.
Send Report To:	Todd Buchanan	Invoice Attn		D.
Address:	325 Kentucky Ave	Address:		E.
				F.
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-GW-010FP-04	7-17-11	1206	Water	1L Plastic	HNO_3	1	X									
2	SIW-GW-010FP-02	↓	↓	↓	↓	↓	↓	X									
3	SIW-GW-010UFMSD-03							X									
4	SIW-GW-010UFP-03							X									
5	SIW-GW-010 UFP-01							X									
6	SIW-GW-010UFMS-01							X									
7	SIW-GW-010UFMSD-04							X									
8	SIW-GW-010FP-01							X									
9	SIW-GW-010FP-03	↓	↓	↓	↓	↓	↓	X									
10																	BS 8/15/11

Shipment Method: FedEx | Airbill No.: | Required Turnaround:

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GSD Consultants LLC	Time 0930	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TBSL	Time 0820

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO CONSULTANTS
Quote No: 89198
COC/RFA No: SEE BELOW
Initiated By: NVO Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 7973 1271 4970
2. 4672
3. 4937
4. 4558
5. 4801
6. 7973 1271 5072
7. 4591
8. 4709
9. 4812
10.

Sample Temperature (s):**

1. AMBIENT
2.
3.
4.
5.
6. AMBIENT
7.
8.
9. 2
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189477, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

UF = UnFiltered F = filtered
09F-01, -02, -03, -04 - These are the samples - totally 4 liters. This is across the board.
P = Primary. P, MS & MSD are same sample.
100 & 010 Are the same sample
LMF 7/19/11

SW-GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:
Client Contact Name: _____ Informed by: _____
Sample(s) processed "as is"
Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 7/21/11

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

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF
Quote #: 89198 SDG: 08302011
Project: 20110007 SIW Staten Island, NY
PO#: Report to: Todd Buchanan
Client: 509018 GEO Consultants LLC
#SMPS in LOT: 36

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	SIW-SS-001P-0.0-2.0	797312714591		2011-07-16 / 838	MK1RJ	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	SIW-SS-002P-0.0-2.0	797312714591		2011-07-16 / 900	MK1RK	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	SIW-SS-003P-0.0-2.0	797312714591		2011-07-15 / 1810	MK1RL	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	SIW-SS-004P-0.0-2.0	797312714591		2011-07-15 / 1600	MK1RM	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	SIW-SS-005P-0.0-2.0	797312714591		2011-07-16 / 840	MK1RN	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
6	SIW-SS-006P-0.0-2.0	797312714591		2011-07-15 / 1606	MK1RP	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG: 08302011

Project: 20110007 | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
7	SIW-SS-007P-0.0-2.0	797312714591		2011-07-15 / 1802	MK1RR	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
8	SIW-SS-008P-0.0-2.0	797312714591		2011-07-16 / 1050	MK1RT	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
9	SIW-SS-009P-0.0-2.0	797312714591		2011-07-16 / 1105	MK1RV	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
10	SIW-SS-010P-0.0-2.0	797312714591		2011-07-15 / 1745	MK1RW	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
11	SIW-SS-011P-0.0-2.0	797312714591		2011-07-16 / 815	MK1RX	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
12	SIW-SS-012P-0.0-2.0	797312714591		2011-07-16 / 825	MK1R0	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG: 08302011

Project: 20110007 | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
13	SIW-SS-013P-0.0-2.0	797312714591		2011-07-16 / 1030	MK1R1	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
14	SIW-SS-014P-0.0-2.0	797312714591		2011-07-16 / 850	MK1R5	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
15	SIW-SS-015P-0.0-2.0	797312714591		2011-07-16 / 1045	MK1R6	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
16	SIW-SS-016P-0.0-2.0	797312714591		2011-07-16 / 1038	MK1R7	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
17	SIW-SS-017P-0.0-2.0	797312714591		2011-07-16 / 910	MK1R8	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
18	SIW-SS-018P-0.0-2.0	797312714591		2011-07-16 / 1112	MK1R9	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG: 08302011

Project: 20110007 | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
19	SIW-SS-019P-0.0-2.0	797312714591		2011-07-15 / 1800	MK1TA	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
20	SIW-SS-020P-0.0-2.0	797312714591		2011-07-16 / 830	MK1TC	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
21	SIW-SS-021P-0.0-2.0	797312714591		2011-07-15 / 1650	MK1TF	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
22	SIW-SS-022P-0.0-2.0	797312714591		2011-07-16 / 815	MK1TG	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
23	SIW-SS-023P-0.0-2.0	797312714591		2011-07-16 / 900	MK1TH	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG: 08302011

Date Received: 2011-07-19

Project: 20110007 | SIW Staten Island, NY

Analytical Due Date: 2011-08-09

PO#: | Report to: Todd Buchanan

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 36

EDD Code: 00

CRM DOE #6d Rev 1

XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
24	SIW-SS-024P-0.0-2.0	797312714591		2011-07-16 / 1100	MK1TJ	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
25	SIW-SS-025P-0.0-2.0	797312714591		2011-07-16 / 1645	MK1TK	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
26	SIW-SS-026P-0.0-2.0	797312714591		2011-07-15 / 1740	MK1TM	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
27	SIW-SS-027P-0.0-2.0	797312714591		2011-07-15 / 1625	MK1TR	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
28	SIW-SS-028P-0.0-2.0	797312714591		2011-07-15 / 1640	MK1TT	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day In-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A

F1G190465 CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG: 08302011

Project: 20110007 | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

29 SIW-SS-029P-0.0-2.0 797312714591 2011-07-16 / 1640 MK1TV SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # CLIENT SAMPLE ID Site ID Client Matrix DATE/TIME SAMPLED WORKORDER A

30 SIW-SS-030P-0.0-2.0 797312714591 2011-07-16 / 1715 MK1TW SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # CLIENT SAMPLE ID Site ID Client Matrix DATE/TIME SAMPLED WORKORDER A

31 SIW-SS-031P-0.0-2.0 797312714591 2011-07-16 / 1725 MK1T0 SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # CLIENT SAMPLE ID Site ID Client Matrix DATE/TIME SAMPLED WORKORDER A

32 SIW-SS-032P-0.0-2.0 797312714591 2011-07-16 / 1240 MK1T1 SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # CLIENT SAMPLE ID Site ID Client Matrix DATE/TIME SAMPLED WORKORDER A

33 SIW-SS-033P-0.0-2.0 797312714591 2011-07-16 / 1422 MK1T2 SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # CLIENT SAMPLE ID Site ID Client Matrix DATE/TIME SAMPLED WORKORDER A

34 SIW-SS-034P-0.0-2.0 797312714591 2011-07-16 / 1548 MK1T3 SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190465

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF
Quote #: 89198
SDG: 08302011
Date Received: 2011-07-19

Project: 20110007
SIW Staten Island, NY
Analytical Due Date: 2011-08-09

PO#:
Report to: Todd Buchanan
Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC
#SMPS in LOT: 36
Report Type: D Expanded Deliverable
EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
35	SIW-SS-035P-0.0-2.0	797312714591		2011-07-16 / 1705	MK1T5	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
36	SIW-SS-036P-0.0-2.0	797312714591		2011-07-17 / 935	MK1T6	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

L-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GEO Consultants LLC	Todd Buchanan	7-18-11	189481
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 **of** 3
325 Kentucky Ave	2704623882 / 2704623887		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Kewil / KY / 42053			
Project Name and Location (State)	**Carrier/Waybill Number**		
SIW - Staten Island, New York			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Lead	Special Instructions/ Conditions of Receipt
SIW-SS-001P-0.0-2.0	7-16-11	0838				X	X						X	1X 500P
SIW-SS-002P-0.0-2.0	7-16-11	0900				X	X						X	
SIW-SS-003P-0.0-2.0	7-15-11	1810				X	X						X	
SIW-SS-004P-0.0-2.0	7-15-11	1600				X	X						X	
SIW-SS-005P-0.0-2.0	7-16-11	0840				X	X						X	
SIW-SS-006P-0.0-2.0	7-15-11	1606				X	X						X	
SIW-SS-007P-0.0-2.0	7-15-11	1802				X	X						X	
SIW-SS-008P-0.0-2.0	7-16-11	0950				X	X						X	
SIW-SS-009P-0.0-2.0	7-16-11	1105				X	X						X	
SIW-SS-010P-0.0-2.0	7-15-11	1745				X	X						X	
SIW-SS-011P-0.0-2.0	7-16-11	0815				X	X						X	
SIW-SS-012P-0.0-2.0	7-16-11	0825				X	X						X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
	7-18-11	0900		7/19/11	0920
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189477
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 3
City / State / Zip Code	Site Contact	Lab Contact	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 2540	Special Instructions/ Conditions of Receipt
SLW-SS-013P-0.0-2.0	7-16-11	1030				X	X						X	1X500-P
SLW-SS-014P-0.0-2.0	7-16-11	0850				X	X						X	
SLW-SS-015P-0.0-2.0	7-16-11	1045				X	X						X	
SLW-SS-016P-0.0-2.0	7-16-11	1038				X	X						X	
SLW-SS-017P-0.0-2.0	7-16-11	0910				X	X						X	
SLW-SS-018P-0.0-2.0	7-16-11	1112				X	X						X	
SLW-SS-019P-0.0-2.0	7-15-11	1800				X	X						X	
SLW-SS-020-0.0-2.0	7-16-11	0830				X	X						X	
SLW-SS-021-0.0-2.0	7-15-11	1650				X	X						X	
SLW-SS-022-0.0-2.0	7-16-11	0815				X	X						X	
SLW-SS-023-0.0-2.0	7-16-11	0900				X	X						X	
SLW-SS-024-0.0-2.0	7-16-11	1100				X	X						X	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189478
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 3 of 3

City	State	Zip Code	Site Contact	Lab Contact

Project Name and Location (State)	Carrier/Waybill Number

Contract/Purchase Order/Quote No.

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): RAD	Special Instructions/ Conditions of Receipt
SIW-SS-025P-0.0-2.0						X	X						X	1X500P
SIW-SS-026P-0.0-2.0						X	X						X	
SIW-SS-027P-0.0-2.0						X	X						X	
SIW-SS-028P-0.0-2.0						X	X						X	
SIW-SS-029P-0.0-2.0						X	X						X	
SIW-SS-030P-0.0-2.0						X	X						X	
SIW-SS-031P-0.0-2.0						X	X						X	
SIW-SS-032P-0.0-2.0						X	X						X	
SIW-SS-033P-0.0-2.0						X	X						X	
SIW-SS-034P-0.0-2.0						X	X						X	
SIW-SS-035P-0.0-2.0						X	X						X	
SIW-SS-036P-0.0-2.0						X	X						X	

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By [signature]	7-18-11	0900	1. Received By [signature]	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO Consultants
Quote No: 89198
COC/RFA No: SEE BELOW

Initiated By: NWD Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 7973 1271 4970
2. 4672
3. 4937
4. 4558
5. 4801
6. 7973 1271 5072
7. 4591
8. 4709
9. 4812
10.

Sample Temperature (s):**

1. AMBIENT
2.
3.
4.
5.
6. AMBIENT
7.
8.
9. 2
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable).

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189472, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

VF = Unfiltered F = filtered
09F-01, -02, -03, -04 = These are the samples — totally 4 liters. This is across the board.
P = primary, P, MS & MSD are same sample.
10 & 010 Are the same sample
LMF 7/19/11

SW GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:
Client Contact Name: _____ Informed by: _____
Sample(s) processed "as is"
Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 7/21/11

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

F1G190473

CLIENT ANALYSIS SUMMARY

Storage Loc: ENCORE,1-103

Project Manager: LMF
Quote #: 89198 SDG:
Project: SIW Staten Island, NY
PO#: Report to: Barry Kinsall
Client: 509018 GEO Consultants LLC

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
#SMPS in LOT: 5 EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	SIW-SS-043PC-0.0-2.0			2011-07-17 / 1200	MK1VC	SOLID

SAMPLE COMMENTS: LIMITED VOLUME

	XX	QH	SW846	8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	XX	QJ	SW846	8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	XX	QS	SW846	8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	AS	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	BA	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	CD	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	CR	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	PB	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	SE	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	AG	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	HG	O9	SW846	7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	XX	QL	SW846	8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
	XX	QK	SW846	8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
	XX	QK	SW846	8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
	XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	XX	QH	SW846	8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	XX	QJ	SW846	8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	XX	QS	SW846	8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	PB	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	AS	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	AG	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	CD	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	SE	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	BA	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	CR	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	HG	O9	SW846	7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
D	XX	QL	SW846	8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
D	XX	QK	SW846	8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
D	XX	QK	SW846	8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
S	XX	QH	SW846	8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
S	XX	QJ	SW846	8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
S	XX	QS	SW846	8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
S	PB	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

F1G190473

CLIENT ANALYSIS SUMMARY

Storage Loc: ENCORE,1-103

Project Manager: LMF
Quote #: 89198 SDG:
Project: SIW Staten Island, NY
PO#: Report to: Barry Kinsall
Client: 509018 GEO Consultants LLC

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
#SMPS in LOT: 5 EDD Code: 00

CRM DOE #6d Rev 1

S	BA	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	SE	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	CD	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	AS	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	AG	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	CR	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	HG	O9	SW846 7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
S	XX	QL	SW846 8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N		
S	XX	QK	SW846 8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N		
S	XX	QK	SW846 8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	SIW-SS-041PC-0.0-2.0			2011-07-17 / 1120	MK1VQ	SOLID

SAMPLE COMMENTS: LIMITED VOLUME

XX	QH	SW846 8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	QJ	SW846 8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	QS	SW846 8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
SE	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
AS	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
BA	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
CD	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
CR	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
PB	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
AG	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
HG	O9	SW846 7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	QL	SW846 8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N			
XX	QK	SW846 8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N			
XX	QK	SW846 8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N			
XX	ZV	RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	WM	MCAW 160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06				

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	SIW-SS-044PC-0.0-2.0			2011-07-17 / 1230	MK1V0	SOLID

SAMPLE COMMENTS: LIMITED VOLUME

XX	QH	SW846 8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	QJ	SW846 8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
XX	QS	SW846 8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
AG	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				
PB	I&	SW846 6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06				

F1G190473

CLIENT ANALYSIS SUMMARY

Storage Loc: ENCORE,1-103

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | SIW Staten Island, NY

Analytical Due Date: 2011-08-09

PO#: | Report to: Barry Kinsall

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

#SMPS in LOT: 5

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SE	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
BA	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CR	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
AS	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CD	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
HG	O9	SW846	7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QL	SW846	8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	SIW-SS-042PC-0.0-2.0			2011-07-17 / 1013	MK1V4	SOLID

SAMPLE COMMENTS: LIMITED VOLUME

XX	QH	SW846	8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QJ	SW846	8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QS	SW846	8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
PB	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
AG	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
SE	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CR	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CD	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
AS	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
BA	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
HG	O9	SW846	7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QL	SW846	8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	SIW-SS-CDUP-001			2011-07-17 / 0	MK1V6	SOLID

SAMPLE COMMENTS: LIMITED VOLUME

XX	QH	SW846	8082	SOLID, 8082, PCBs	71	SONICATION w/ACID STRIP (PCB)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QJ	SW846	8081A	SOLID, 8081A, Pesticides	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QS	SW846	8151A	SOLID, 8151A, Herbicides	0V	SONICATION -> DERIVATIZATION	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
PB	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

F1G190473

CLIENT ANALYSIS SUMMARY

Storage Loc: ENCORE,1-103

Project Manager: LMF
Quote #: 89198 SDG:
Project: SIW Staten Island, NY
PO#: Report to: Barry Kinsall
Client: 509018 GEO Consultants LLC
#SMPS in LOT: 5

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
EDD Code: 00

CRM DOE #6d Rev 1

SE	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
BA	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CD	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
AS	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
AG	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CR	I&	SW846	6020A	SOLID, 6020 RCRA METALS	GK	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
HG	O9	SW846	7471A	SOLID, RCRA MERCURY	70	METALS, TOTAL (Method Exclusive) - Solids	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	QL	SW846	8270C	SOLID, 8270C, SVOC	13	SONICATION - Low Level	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, MEOH 1 OF 2	4B	PURGE AND TRAP - Lab MEOH Ext. (Solids or Wastes)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, 8260B, DI 2 OF 2	4P	ENCORE (COLD PRESERVATION)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

Y1

TestAmerica St. Louis Chain-of-Custody Record

13715 Rider Trial North
Earth City, MO 63045
Phone: 314-298-8566 Fax: 314-298-8757

Customer Information		Project Information		Analyses / Method Requested
Project Name	Staten Island Warehouse	Purchase Order		A. VOCs
PM/ Quote#		Work Order		B. SVOCs
Company	GEO Consultants LLC	Bill To		C. Pesticides
Send Report To:	Todd Buchanan	Invoice Attn		D. Herbicides
Address:	325 Kentucky Ave	Address:		E. PCBs
				F. RCRA Metals
City/State/Zip	Kevil KY 42053	City/State/Zip		G.
Phone	270 462 3882	Phone		H.
Fax	270 462 3887	Fax		I.

Sx No.	Sample Description	Sample Date	Sample Time	Sample Matrix	Container Type	Preservative	No. of Bottles	A	B	C	D	E	F	G	H	I	Comments
1	SIW-SS-043PC-0.0-2.0	7-17-11	0925	Soil	Multiple	Multiple	4	X	X	X	X	X	X				Other Preservatives
2	SIW-SS-041PC-0.0-2.0		1120					X	X	X	X	X	X				Methanol
3	SIW-SS-044PC-0.0-2.0		1230					X	X	X	X	X	X				Sodium
4	SIW-SS-042PC-0.0-2.0		1013					X	X	X	X	X	X				Bisulfate
5	SIW-SS-043MSC-0.0-2.0		1200					X	X	X	X	X	X				
6	SIW-SS-043MSDC-0.0-2.0		1200					X	X	X	X	X	X				
7	SIW-SS-CDUP-001		-					X	X	X	X	X	X				
8																	
9																	
10																	

8/15/11

Shipment Method: FedEx

Airbill No.:

Required Turnaround:

Relinquished by:	Date	Relinquished by:	Date	Relinquished by:	Date
	7-18-11				
Company Name: GEO Consultants LLC	Time 0930	Company Name:	Time	Company Name:	Time
Received by:	Date	Received by:	Date	Received by:	Date 7.19.11
Company Name:	Time	Company Name:	Time	Company Name: TMSTL	Time 0920

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO CONSULTANTS
Quote No: 89198
COC/RFA No: SEE BELOW
Initiated By: MVD Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 7973 1271 4970
2. 4672
3. 4937
4. 4558
5. 4801
6. 7973 1271 5072
7. 4591
8. 4709
9. 4812
10.

Sample Temperature (s):**

1. AMBIENT
2.
3.
4.
5.
6. AMBIENT
7.
8. ↓
9. 2
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189477, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

VF = Unfiltered F = filtered
09F-01, -02, -03, -04 - These are the samples - totally 4 Liters. This is across the board.
P - Primary, P, MS & MSD are same sample.
10 & 010 Are the same sample
LMF 7/19/11

SW GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:
Client Contact Name: _____ Informed by: _____
Sample(s) processed "as is"
Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: [signature] Date: 7/20/11

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

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	SIW-SB-001P-0.0-5.0			2011-07-12 / 1400	MK1VG	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	SIW-SB-001P-5.0-10.0			2011-07-12 / 1400	MK1VJ	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	SIW-SB-002P-0.0-5.0			2011-07-12 / 1430	MK1VK	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	SIW-SB-003P-0.0-5.0			2011-07-12 / 1508	MK1VM	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	SIW-SB-003P-5.0-8.0			2011-07-12 / 1508	MK1VN	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
6	SIW-SB-004P-0.0-5.0			2011-07-12 / 1530	MK1VP	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | SIW Staten Island, NY

Analytical Due Date: 2011-08-09

PO#: | Report to: Todd Buchanan

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 36 EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
7	SIW-SB-004P-5.0-10.0			2011-07-12 / 1530	MK1VT	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
8	SIW-SB-005P-0.0-5.0			2011-07-13 / 1031	MK1VW	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
9	SIW-SB-005P-5.0-8.0			2011-07-13 / 1036	MK1VX	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
10	SIW-SB-006P-0.0-5.0			2011-07-13 / 1410	MK1V2	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
11	SIW-SB-006P-5.0-8.0			2011-07-13 / 1410	MK1V3	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
12	SIW-SB-007P-0.0-5.0			2011-07-13 / 1345	MK1V5	SOLID

SAMPLE COMMENTS:

F1G190474 CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | SIW Staten Island, NY

Analytical Due Date: 2011-08-09

PO#: | Report to: Todd Buchanan

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 36 EDD Code: 00

CRM DOE #6d Rev 1

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
13	SIW-SB-007P-5.0-8.0			2011-07-13 / 1345	MK1V7	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
14	SIW-SB-008P-0.0-5.0			2011-07-14 / 1450	MK1V9	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
15	SIW-SB-008P-5.0-8.0			2011-07-14 / 1450	MK1WD	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
16	SIW-SB-009P-0.0-5.0			2011-07-14 / 1605	MK1WF	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
17	SIW-SB-009P-5.0-8.0			2011-07-14 / 1605	MK1WG	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Date Received: 2011-07-19

Project: | SIW Staten Island, NY

Analytical Due Date: 2011-08-09

PO#: | Report to: Todd Buchanan

Report Due Date: 2011-08-10

Client: 509018 GEO Consultants LLC

Report Type: D Expanded Deliverable

#SMPS in LOT: 36 | EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
18	SIW-SB-010P-0.0-5.0			2011-07-15 / 1115	MK1WH	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
19	SIW-SB-010P-5.0-8.0			2011-07-15 / 1115	MK1WJ	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
20	SIW-SB-011P-0.0-5.0			2011-07-13 / 1105	MK1WK	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
21	SIW-SB-011P-5.0-8.0			2011-07-13 / 1105	MK1WM	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
22	SIW-SB-012P-0.0-5.0			2011-07-13 / 1140	MK1WN	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
23	SIW-SB-012P-5.0-8.0			2011-07-13 / 1140	MK1WP	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
24	SIW-SB-013P-0.0-5.0			2011-07-14 / 1110	MK1WQ	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
25	SIW-SB-013P-5.0-8.0			2011-07-14 / 1110	MK1WR	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
26	SIW-SB-014P-0.0-5.0			2011-07-13 / 1555	MK1WT	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
27	SIW-SB-014P-5.0-8.0			2011-07-13 / 1555	MK1WV	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
28	SIW-SB-015P-0.0-5.0			2011-07-14 / 1500	MK1WW	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
29	SIW-SB-016P-0.0-5.0			2011-07-14 / 1200	MK1WX	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: **RAD**

Project Manager: LMF | Quote #: 89198 | SDG:

Project: | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
36	SIW-SB-020P-5.0-8.0			2011-07-14 / 1015	MK1W6	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GEO CONSULTANTS LLC	TODD BUCHANAN	7-18-11	189474
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 3**
325 Kentucky AVE	270 462 3882 / 2704623887		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
KEVIL / KY / 42053			
Project Name and Location (State)	**Carrier/Waybill Number**		
SIW STATEN ISLAND, NEW YORK			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): RAD	Special Instructions/ Conditions of Receipt
SIW-SB-001P-0.0-5.0	7-12-11	1400				X	X						X	1 X 500P
SIW-SB-001P-5.0-8.0	7-12-11	1400				X	X						X	
SIW-SB-002P-0.0-5.0	7-12-11	1430				X	X						X	
SIW-SB-003P-0.0-5.0	7-12-11	1508				X	X						X	
SIW-SB-003P-5.0-8.0	7-12-11	1508				X	X						X	
SIW-SB-004P-0.0-5.0	7-12-11	1530				X	X						X	
SIW-SB-004P-5.0-10.0	7-12-11	1530				X	X						X	
SIW-SB-005P-0.0-5.0	7-13-11	1031				X	X						X	
SIW-SB-005P-5.0-8.0	7-13-11	1036				X	X						X	
SIW-SB-006P-0.0-5.0	7-13-11	1410				X	X						X	
SIW-SB-006P-5.0-8.0	7-13-11	1410				X	X						X	
SIW-SB-007P-0.0-5.0	7-13-11	1345				X	X						X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189475
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 3
City / State / Zip Code	Site Contact / Lab Contact	Analysis (Attach list if more space is needed)	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.	Matrix / Containers & Preservatives		Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	RAD	
SIW-SB-007P-5.0-8.0	7-13-11	1345				X	X						X	1X500P
SIW-SB-008P-0.0-5.0	7-14-11	1450				X	X						X	
SIW-SB-008P-5.0-8.0	7-14-11	1450				X	X						X	
SIW-SB-009P-0.0-5.0	[redacted]	1605				X	X						X	
SIW-SB-009P-5.0-8.0	7-14-11	1605				X	X						X	
SIW-SB-010P-0.0-5.0	7-15-11	1115				X	X						X	
SIW-SB-010P-5.0-8.0	7-15-11	1115				X	X						X	
SIW-SB-011P-0.0-5.0	7-13-11	1105				X	X						X	
SIW-SB-011P-5.0-8.0	7-13-11	1105				X	X						X	
SIW-SB-012P-0.0-5.0	7-13-11	1140				X	X						X	
SIW-SB-012P-5.0-8.0	7-13-11	1140				X	X						X	
SIW-SB-013P-0.0-5.0	7-14-11	1110				X	X						X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

F1G190474

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: | SIW Staten Island, NY

PO#: | Report to: Todd Buchanan

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 36

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
30	SIW-SB-016P-5.0-8.0			2011-07-14 / 1200	MK1W0	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
31	SIW-SB-017P-0.0-5.0			2011-07-14 / 1240	MK1W1	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
32	SIW-SB-018P-0.0-5.0			2011-07-14 / 1525	MK1W2	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
33	SIW-SB-019P-0.0-5.0			2011-07-13 / 1520	MK1W3	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
34	SIW-SB-019P-5.0-8.0			2011-07-13 / 1520	MK1W4	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
35	SIW-SB-020P-0.0-5.0			2011-07-14 / 1015	MK1W5	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189476
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 3 of 3
City / State / Zip Code	Site Contact	Lab Contact	
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	RAP	Special Instructions/ Conditions of Receipt
SIW-SB-013P-5.0-8.0	7-14-11	1110				X	X						X	1 X 500P
SIW-SB-014P-0.0-5.0	7-13-11	1555				X	X						X	
SIW-SB-014P-5.0-8.0	7-13-11	1555				X	X						X	
SIW-SB-015P-0.0-5.0	7-14-11	1500				X	X						X	
SIW-SB-016P-0.0-5.0	7-14-11	1200				X	X						X	
SIW-SB-016P-5.0-8.0	7-14-11	1200				X	X						X	
SIW-SB-017P-0.0-5.0	7-14-11	1240				X	X						X	
SIW-SB-018P-0.0-5.0	7-14-11	1525				X	X						X	
SIW-SB-019P-0.0-5.0	7-13-11	1520				X	X						X	
SIW-SB-019P-5.0-8.0	7-13-11	1520				X	X						X	
SIW-SB-020P-0.0-5.0	7-14-11	1015				X	X						X	
SIW-SB-020P-5.0-8.0	7-14-11	1015				X	X						X	

Analysis (Attach list if more space is needed)

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO CONSULTANTS
Quote No: 89198
COC/RFA No: SEE BELOW
Initiated By: MVD Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: Multiple Packages: (Y) N

Shipping # (s):*

1. 7973 1271 4970
2. 4672
3. 4937
4. 4558
5. 4801
6. 7973 1271 5072
7. 4591
8. 4709
9. 4812
10.

Sample Temperature (s):**

1. AMBIENT
2.
3.
4.
5.
6. AMBIENT
7.
8.
9. 2
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189477, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

UF = Unfiltered F = filtered
09F-01, -02, -03, -04 - These are the samples - totally 4 liters. This is across the board.
P - primary. P, MS & MSD are same sample.
10 & 010 are the same sample
LMF 7/19/11

SW GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:
Client Contact Name: Informed by:
Sample(s) processed "as is"
Sample(s) on hold until: If released, notify:
Project Management Review: Date: 7/21/11

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

F1G190479

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF
Quote #: 89198 SDG:
Project: SIW Staten Island, NY
PO#: Report to: Barry Kinsall
Client: 509018 GEO Consultants LLC

Date Received: 2011-07-19
Analytical Due Date: 2011-08-09
Report Due Date: 2011-08-10
Report Type: D Expanded Deliverable
#SMPS in LOT: 14 EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	SIW-SB-021P-0.0-5.0			2011-07-15 / 1210	MK1XF	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	SIW-SB-021P-5.0-8.0			2011-07-15 / 1210	MK17H	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	SIW-SB-022P-0.0-5.0			2011-07-14 / 1035	MK17J	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	SIW-SB-022P-5.0-8.0			2011-07-14 / 1035	MK17K	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	SIW-SB-023P-0.0-5.0			2011-07-15 / 950	MK17M	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
6	SIW-SB-023P-5.0-8.0			2011-07-15 / 950	MK17N	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F1G190479

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: SIW Staten Island, NY

PO#: | Report to: Barry Kinsall

Client: 509018 GEO Consultants LLC

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

#SMPS in LOT: 14 EDD Code: 00

CRM DOE #6d Rev 1

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
7	SIW-SB-024P-0.0-5.0			2011-07-15 / 1030	MK17P	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
8	SIW-SB-025P-0.0-5.0			2011-07-15 / 1135	MK17Q	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
9	SIW-SB-026P-0.0-5.0			2011-07-15 / 1230	MK17R	SOLID

SAMPLE COMMENTS:

	XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
10	SIW-SB-DUP-001			2011-07-12 / 0	MK17V	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
11	SIW-SB-DUP-002			2011-07-13 / 0	MK17W	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
12	SIW-SB-DUP-003			2011-07-14 / 0	MK170	SOLID

SAMPLE COMMENTS:

F1G190479

CLIENT ANALYSIS SUMMARY

Storage Loc: RAD

Project Manager: LMF | Quote #: 89198 | SDG:

Project: SIW Staten Island, NY

PO#: | Report to: Barry Kinsall

Client: 509018 GEO Consultants LLC | #SMPS in LOT: 14

Date Received: 2011-07-19

Analytical Due Date: 2011-08-09

Report Due Date: 2011-08-10

Report Type: D Expanded Deliverable

EDD Code: 00

CRM DOE #6d Rev 1

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
13	SIW-SB-DUP-004			2011-07-15 / 0	MK171	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
14	SIW-SB-DUP-005			2011-07-15 / 0	MK172	SOLID

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	0B	EML	GA-01-R MOD	SOLID, GA-01-R MOD, Gamma Ra-226 & Hits	J9	Dry, Grind, and Fill Geometry -> 21 day in-growth	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GPD Consultants LLC	Todd Buchanan	7-18-11	189483
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 2**
325 Kentucky Ave	2704623882 / 2704623887		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Kevil / KY / 42053			
Project Name and Location (State)	**Carrier/Waybill Number**		
SIW Staten Island, New York			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	RAD	Special Instructions/ Conditions of Receipt
SIW-SB-021P-0.0-5.0	7-15-11	1210				X	X						X	1X500P
SIW-SB-021P-5.0-8.0	7-15-11	1210				X	X						X	
SIW-SB-022P-0.0-5.0	7-14-11	1035				X	X						X	
SIW-SB-022P-5.0-8.0	7-14-11	1035				X	X						X	
SIW-SB-023P-0.0-5.0	7-15-11	0950				X	X						X	
SIW-SB-023P-5.0-8.0	7-15-11	0950				X	X						X	
SIW-SB-024P-0.0-5.0	7-15-11	1030				X	X						X	
SIW-SB-025P-0.0-5.0	7-15-11	1135				X	X						X	
SIW-SB-026P-0.0-5.0	7-15-11	1230				X	X						X	
SIW-SB-006MS-5.0-8.0	7-13-11	1410				X	X						X	
SIW-SB-006MSD-5.0-8.0	7-13-11	1410				X	X						X	
SIW-SB-008MS-0.0-5.0	7-14-11	1450				X	X						X	

Analysis (Attach list if more space is needed)

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
			189482
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
City / State / Zip Code	Site Contact	Lab Contact	Analysis (Attach list if more space is needed)
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	RCRA	Special Instructions/ Conditions of Receipt
SIW-SB-008MSD-0.0-5.0	7-14-11	1450				X	X						X	1X500P
SIW-SB-026MS-0.0-5.0	7-15-11	1230				X	X						X	
SIW-SB-026MSD-0.0-5.0	7-15-11	1230				X	X						X	
SIW-SB-DUP-001	7-12-11	—				X	X						X	
SIW-SB-DUP-002	7-13-11	—				X	X						X	
SIW-SB-DUP-003	7-14-11	—				X	X						X	
SIW-SB-DUP-004	7-15-11	—				X	X						X	
SIW-SB-DUP-005	7-15-11	—				X	X						X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	7-18-11	0900	1. Received By	7/19/11	0920
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 247

Lot #(s): FIG190461, 473
FIG190456, 479
465
474

CONDITION UPON RECEIPT FORM

Client: GEO CONSULTANTS

Quote No: 89198

COC/RFA No: SEE BELOW

Initiated By: NVO Date: 7/19/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: Multiple Packages: (Y) N

Shipping # (s):*		Sample Temperature (s):**	
1. 7973 1271 4970	6. 7973 1271 5072	1. AMBIENT	6. AMBIENT
2. 4672	7. 4591	2.	7.
3. 4937	8. 4709	3.	8.
4. 4558	9. 4812	4.	9. 2
5. 4801	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes: 197114, 197115, 189479, 189480, 197120, 197118, 189478, 189477, 189481, 189474, 189475, 189476, 197117, 197121, 189483, 189482, 197123, 197119, 197116

UF = Unfiltered F = filtered
09F-01, -02, -03, -04 - These are the sample - totally 4 liters. This is across the board.
P - primary. P, MS & MSD are same sample.
10 & 010 Are the same sample.
LMF 7/19/11

SW GW-05F-02 is unfiltered there is sediment in the bottle & says unfiltered on the back. LMF 7/19/11

Corrective Action:

Client Contact Name: Informed by:

Sample(s) processed "as is"

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

Project Management Review: Date: 7/21/11

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

APPENDIX B

BORING LOGS

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HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 001
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.55 ft (msl)
	10. DATE STARTED: 7/12/11 / 11. DATE COMPLETED: 7/12/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.2 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 10 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			47%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 001

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00	ML, clayey, sandy, silt fill, brown, dry, with scattered small gravel				Background = 38 cpm, Core = 58 cpm (1 min scan)
4.80						
	1.00	ML, clayey, sandy, silt fill, black, dry, with cinder				Sample collected at 1.2' - 1.6'
4.40						
4.00		ML, clayey, sandy, silt fill, rust brown, dry, crystals				
3.60	2.00					
3.20				66% (3.3' of 5.0')		
2.80		ML, clayey, sandy, silt fill, dark gray, granular, scattered cinder				
	3.00					
2.40						
2.00						
1.60	4.00	ML, clayey, sandy, silt fill, dark gray, wet, granular	▽ 4.2			
1.20						
0.80						
	5.00	ML, clayey, sandy, silt fill, dark, moist, granular				Background = 38 cpm, Core = 50 cpm (1 min scan)
0.40						
-0.00						
-0.40	6.00					
-0.80				28% (1.4' of 5.0')		
-1.20		ML, clayey, sandy, silt fill, dark brown, wet, muddy				
	7.00					
-1.60						
-2.00						
-2.40	8.00					

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 002
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 6.982 ft (msl)
	10. DATE STARTED: 7/12/11 / 11. DATE COMPLETED: 7/12/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			70%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 002

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
6.80	0.00	ML, clayey, sandy, silt fill, brown, dry, hard		70% (3.5' of 5.0')		Background = 38 cpm, Core = 40 cpm (1 min scan)
6.40						
6.00	1.00					
5.60						
5.20		ML, clayey, sandy, silt fill, brown/black, dry, hard				
	2.00					
4.80						
4.40						Sample collected at 2.0' - 3.3'
4.00	3.00	ML, clayey, sandy, silt fill, brown/black, moist, soft				
3.60		GP, large gravel, grey, brown fill, moist				
3.20						
	4.00					
2.80						
2.40						
2.00	5.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 003
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 6.398 ft (msl)
	10. DATE STARTED: 7/12/11 / 11. DATE COMPLETED: 7/12/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: NA
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			63%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
	BENTONITE			

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 003

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
6.00	0.00	ML/topsoil, clayey, sandy, silt fill, brown, organic				Background = 38 cpm, Core = 62 cpm (1 min scan)
5.60	1.00					
5.20						
4.80						
4.40	2.00	ML, clayey, sandy, silt fill, brown/tan, fine, dry, hard		50% (2.5' of 5.0')		
4.00						
3.60						
3.20	3.00					
2.80						
2.40	4.00	ML, clayey, sandy, silt fill, red, dry, soft, with brick				Sample collected at 3.6' - 5.0'
2.00						
1.60		ML, clayey, sandy, silt fill, brown, moist, soft				
1.20	5.00	ML, clayey, sandy, silt fill, brown, dry, soft				Background = 38 cpm, Core = 62 cpm (1 min scan)
0.80						
0.40	6.00	ML, clayey, gravelly, silt fill, dark brown, moist		83% (2.5' of 3.0')		
-0.00						
-0.40						
-0.80	7.00	ML, clayey, gravelly, silt fill, black, wet, soft				Strong diesel fuel odor. Appeared to be soaked in diesel fuel (6.8' - 8.0')
-1.20						Sample collected at 7.3' - 8.0'
-1.60	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 004
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 7.480 ft (msl)
	10. DATE STARTED: 7/12/11 / 11. DATE COMPLETED: 7/12/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8.8 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 10 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			40%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 004

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
7.00	0.00					Background = 38 cpm, Core = 66 cpm (1 min scan)
6.50	1.00	ML, clayey, sandy, silt fill, brown, moist, soft				
6.00						
5.50	2.00					
5.00				34% (1.7' of 5.0')		Sample collected using the entire core.
4.50	3.00					
4.00						SIW-SB-DUP-001 collected from this core.
3.50	4.00	ML, clayey, sandy, silt fill, tan, dry, medium				
3.00		ML, clayey, sandy, silt fill, brown/red, dry, hard, with brick and concrete				
2.50	5.00					
2.00		ML, clayey, sandy, silt fill, brown, dry, hard				Background = 38 cpm, Core = 51 cpm (1 min scan)
1.50	6.00					
1.00		ML, clayey, sandy, silt fill, tan, dry, hard				
0.50	7.00					
0.00		ML, clayey, sandy, silt fill, red, dry, with brick		46% (2.3' of 5.0')		
-0.50	8.00	ML, clayey, sandy, silt fill, black/brown, dry, hard				
-1.00						
-1.50	9.00	ML, clayey, sandy, silt fill, red, dry, hard, with brick	▽ 8.9			Sample collected at 8.3' - 10.0'
-2.00		ML, clayey, sandy, silt fill, brown/black, wet, soft, with cinder				
-2.50	10.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 005
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.263 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.3 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.05 ft (7/17/11 – 0850)
14. TOTAL DEPTH OF HOLE: 9 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			60%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 005

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.00	0.00					Background = 44 cpm, Core = 58 cpm (1 min scan)
4.50	1.00	ML, clayey, sandy, silt fill, brown, dry, loose, soft, with organics				
4.00						
3.50	2.00					
3.00				58% (2.9' of 5.0')		
2.50						
2.00	3.00	ML, clayey, sandy, silt fill, red, dry, loose, with brick				
1.50						
1.00	4.00					Sample collected at 3.4' - 5.0'
0.50		ML, clayey, sandy, silt fill, brown, wet, rusty	▽ 4.5			
0.00	5.00	ML, clayey, sandy, silt fill, brown/black, moist, loose, fine				
-0.50						
-1.00	6.00					
-1.50				63% (2.5' of 4.0')		
-2.00	7.00	GM, silty, sandy, gravel fill, brown, wet, loose				Samples collected at 5.8'-9'
-2.50						
-3.00	8.00					
-3.50						Background = 44 cpm, Core = 53 cpm (1 min scan)
	9.00					

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 006
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 6.470 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			84%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 006

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
6.40	0.00					Background = 44 cpm, Core = 65 cpm (1 min scan)
6.00						
5.60	1.00	asphalt				
5.20						
4.80						
4.40	2.00					
4.00		CL, clay, brown, wet, with gravel		74% (3.7' of 5.0')		
3.60	3.00					
3.20						
2.80						
2.40	4.00	asphalt, brn/black				
2.00		SP, sand, brown, moist, loose, with gravel				Strong diesel fuel odor. Appeared to be soaked in diesel fuel (3.6' - 8.0').
1.60	5.00					
1.20						Background = 44 cpm, Core = 77 cpm (1 min scan)
0.80						
0.40	6.00					
-0.00		SP, sand, brown, moist, loose, with gravel		100% (3.0' of 3.0')		
-0.40						MS/MSD pair taken from this core.
-0.80	7.00					
-1.20						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 007
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.381 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			50%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 007

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00	ML, clayey, sandy, silt fill, brown/black, dry with asphalt		60% (3.0' of 5.0')		Background = 44 cpm, Core = 64 cpm (1 min scan)
4.80						
4.40	1.00					
4.00						
3.60		asphalt				
	2.00					
3.20						
2.80		SP, sand, dark brown, moist, with gravel				
2.40	3.00					
2.00		GP, gravel, dry, loose				
1.60		timber, wet				
	4.00					Sample collected at 3.3' - 5.0'
1.20		timber, wet				
0.80						
0.40	5.00					Strong diesel fuel odor. Appeared to be soaked in diesel fuel (4.2' - 8.0'). Background = 44 cpm, Core = 73 cpm (1 min scan)
-0.00						
-0.40						
	6.00					
-0.80						
-1.20		timber, wet		33% (1.0' of 3.0')		
-1.60	7.00					
-2.00						Sample collected at 5.0' - 8.0'
-2.40						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 008
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.781 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			63%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 008

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.60	0.00					Background = 46 cpm, Core = 51 cpm (1 min scan)
5.20						
4.80	1.00					
4.40						
4.00						
3.60	2.00	ML, clayey, sandy, silt fill, brown, dry		70% (3.5' of 5.0')		
3.20						
2.80	3.00					MS/MSD pair taken from this core.
2.40						
2.00						
1.60	4.00					
1.20						
0.80	5.00	CL, clayey fill, brown, dry, plastic				Background = 46 cpm, Core = 64 cpm (1 min scan)
0.40						
-0.00						
-0.40	6.00			50% (1.5' of 3.0')		
-0.80						
-1.20	7.00	ML, clayey, sandy, silt fill, black, wet, with gravel				
-1.60						
-2.00						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 009
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 4.958 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 7.5 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.94 ft (7/17/11 – 1409)
14. TOTAL DEPTH OF HOLE: 7.5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			44%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

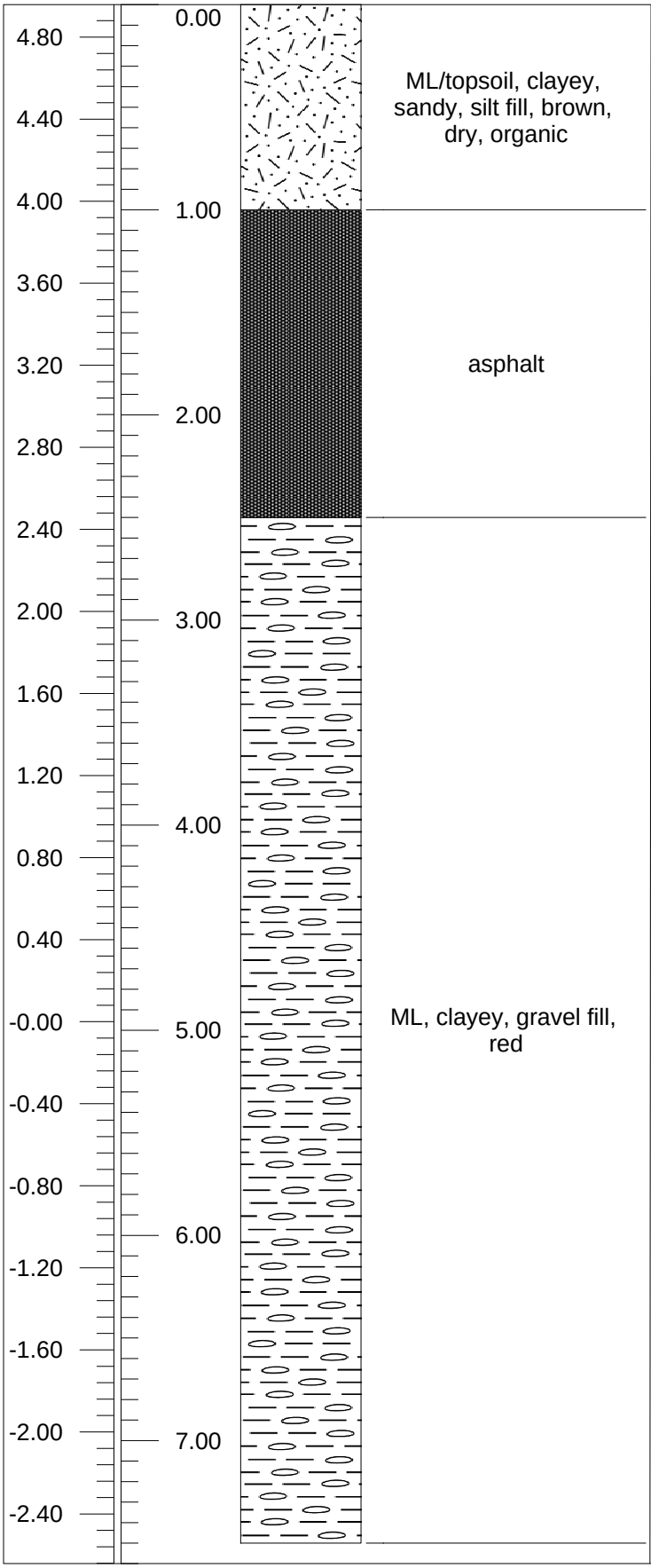
HOLE NUMBER: 009

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
4.80	0.00	ML/topsoil, clayey, sandy, silt fill, brown, dry, organic				Background = 46 cpm, Core = 385 cpm (1 min scan)
4.40						
4.00	1.00					
3.60		asphalt				
3.20						
2.80	2.00					
2.40				52% (2.6' of 5.0')		
2.00	3.00					
1.60						
1.20						
0.80	4.00					
0.40						
-0.00	5.00	ML, clayey, gravel fill, red				Background = 46 cpm, Core = 71 cpm (1 min scan)
-0.40						
-0.80						
-1.20	6.00			28% (0.7' of 2.5')		
-1.60						
-2.00	7.00					
-2.40						



HTRW DRILLING LOG

	DISTRICT: CENWK	HOLE NUMBER 010
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 3.246 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 0.0 ft
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 0.17 ft (7/17/11 – 1155)
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY 58%
			RAD			

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 010

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
3.20	0.00		0.0			Background = 44 cpm, Core = 43 cpm (1 min scan)
2.80						
2.40						
	1.00					SIW-SB-DUP-005 collected from this core.
2.00						
		SC, clayey sand, coarse, wet, brown				
1.60						
1.20	2.00					
				32% (1.6' of 5.0')		
0.80						
0.40						
	3.00					
-0.00						
-0.40						
		SM, silty sand, brown, wet, organic				
-0.80	4.00					
-1.20						
-1.60						
	5.00					Background = 44 cpm, Core = 57 cpm (1 min scan)
-2.00						
-2.40						
-2.80	6.00					
		SM, silty sand, black, wet		100% (3.0' of 3.0')		Strong diesel fuel odor. Appeared to be soaked in diesel fuel (5.0' - 8.0').
-3.20						
-3.60						
	7.00					
-4.00						
-4.40						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 011
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.565 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.2 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			64%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 011

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00					Background = 44 cpm, Core = 70 cpm (1 min scan)
4.80		ML, clayey, sandy, silt fill, brown, dry, loose, organic				
4.40	1.00					
4.00						
3.60	2.00					
3.20				66% (3.3' of 5.0')		
2.80		ML, clayey, sandy, silt fill, black/brown/red, dry, loose				Possible ash layer
2.40	3.00					
2.00						
1.60	4.00		▽ 4.1			
1.20						Sample collected at 3.8' - 5.0'
0.80						
0.40	5.00					Background = 44 cpm, Core = 54 cpm (1 min scan)
-0.00						
-0.40	6.00	CL, clay, brown/red, plastic, moist				
-0.80				60% (1.8' of 3.0')		
-1.20	7.00					
-1.60						
-2.00						
-2.40	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 012
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.421 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 5.5 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			55%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 012

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00	ML, clayey, sandy, silt fill, brown, dry, organic				Background = 44 cpm, Core = 48 cpm (1 min scan)
4.40	1.00	ML, clayey, sandy, silt fill, tan, dry, loose				
3.60	2.00	ML, clayey, sandy, silt fill, dark brown, dry, loose				
3.20				46% (2.3' of 5.0')		
2.40	3.00	ML, clayey, sandy, silt fill, tan/brown/black, dry, loose				Possible ash layer
1.60	4.00					
1.20						
0.80						Sample collected at 3.3' - 5.0'
0.40	5.00					Background = 44 cpm, Core = 62 cpm (1 min scan)
-0.00						
-0.40	6.00	CL, clay, red, moist, with cinder	▽ 6.0			
-0.80				70% (2.1' of 3.0')		
-1.20	7.00					Sample collected at 6.9' - 8.0'
-1.60						
-2.00						
-2.40	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 013
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.336 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.8 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			41%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 013

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00					Background = 46 cpm, Core = 407 cpm (1 min scan)
4.80						
4.40	1.00					
4.00		ML, clayey, sandy, silt fill, dark brown, moist, loose, organic				Sample collected at 0.0' - 2.5'
3.60						
3.20	2.00					
2.80				40% (2.0' of 5.0')		
2.40	3.00					
2.00		ML, clayey, sandy, silt fill, tan/gray, moist				
1.60						
1.20	4.00					
0.80						
0.40	5.00		▽ 5.0			Removed ~4" of slough at top of core
-0.00						Background = 46 cpm, Core = 118 cpm (1 min scan)
-0.40						
-0.80	6.00					
-1.20		SP, sand, wet, brown, scattered gravel/brick		43% (1.3' of 3.0')		Sample collected at 5.0' - 7.3'
-1.60	7.00					
-2.00						
-2.40						
	8.00					

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 014
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.650 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 6.7 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			45%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 014

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.60	0.00	ML, clayey, sandy, silt fill, brown, dry, loose, organic				Background = 44 cpm, Core = 55 cpm (1 min scan)
4.80	1.00					
4.40		ML, clayey, sandy, silt fill, dry, loose, with gravel				
4.00						
3.60	2.00					
3.20				52% (2.6' of 5.0')		
2.80	3.00					
2.40		ML, clayey, sandy, silt fill, brown/red, loose, dry				
2.00						
1.60	4.00					Sample collected at 3.1' - 5.0'
1.20						
0.80						
0.40	5.00	CL, clay, brown/grey, plastic, wet	▽ 6.2	33% (1.0' of 3.0')		Background = 44 cpm, Core = 46 cpm (1 min scan)
-0.00						
-0.40	6.00					
-0.80						Sample collected at 5.0' - 8.0'
-1.20						
-1.60	7.00					
-2.00						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 015
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.001 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 6 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			23%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 015

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
4.80	0.00					Background = 46 cpm, Core = 1185 cpm (1 min scan)
4.40						
4.00	1.00					
3.60						
3.20						
2.80	2.00	ML/topsoil, clayey, sandy, silt fill, dry, brown, organics		28% (1.4' of 5.0')		
2.40						
2.00	3.00					
1.60						
1.20						
0.80	4.00					
0.40						
-0.00	5.00					
-0.40				0% (0.0' of 1.0')		No recovery from second push
-0.80						
	6.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 016
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 4.617 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 6.1 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.58 ft (7/17/11 – 1332)
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			21%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 016

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
4.40	0.00					Background = 46 cpm, Core = 77 cpm (1 min scan)
4.00						
3.60	1.00					
3.20						
2.80	2.00					
2.40		ML, clayey, sandy, silt fill, dry, brown, organics, with gravel		26% (1.3' of 5.0')		
2.00						
1.60	3.00					
1.20						
0.80	4.00					
0.40						
-0.00						
-0.40	5.00		▽ 5.0			Background = 46 cpm, Core = 56 cpm (1 min scan)
-0.80						
-1.20						
-1.60	6.00			13% (0.4' of 3.0')		
-2.00						
-2.40	7.00					Sleeve was full of water. Poured back into hole. Shoe on drill bent.
-2.80						
-3.20	8.00					

HTRW DRILLING LOG

	DISTRICT: CENWK	HOLE NUMBER 017
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.378 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 4.5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			53%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 017

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00	ML, clayey, sandy, silt fill, dry, topsoil, organic				Background = 46 cpm, Core = 68 cpm (1 min scan)
4.80						
4.40	1.00					Hit refusal at 3', moved 3' east and tried another push.
4.00						
3.60						
3.20	2.00			53% (2.4' of 4.5')		Sample collected from topsoil.
2.80						
2.40	3.00	ML, clayey, sandy, silt fill, with rock/brick				
2.00						
1.60						
1.20	4.00					
0.80						

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 018
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.280 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 5.5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			53%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 018

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00	ML/topsoil, clayey, sandy, silt fill, brown, dry				Background = 46 cpm, Core = 360 cpm (1 min scan)
4.80						
4.40	1.00					
4.00						SIW-SB-DUP-003 collected from this core.
3.60						
3.20	2.00	ML, clayey, sandy, silt fill, black, dry				
2.80				48% (2.4' of 5.0')		
2.40	3.00					
2.00						
1.60						
1.20	4.00	ML, clayey, sandy, silt fill, clayey, plastic, moist				
0.80						
0.40						
0.00	5.00			100% (0.5' of 0.5')		No sample collected from this core.

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 019
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.686 ft (msl)
	10. DATE STARTED: 7/13/11 / 11. DATE COMPLETED: 7/13/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			81%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 019

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.60	0.00	ML, clayey, sandy, silt fill, brown/black, dry, with asphalt				Background = 44 cpm, Core = 50 cpm (1 min scan)
4.40	1.00	ML, clayey, sandy, silt fill, brown speckled with red, dry, loose, with gravel				Tire rubber recovered
3.60	2.00	ML, clayey, sandy, silt fill, tan, dry, loose, with gravel		70% (3.5' of 5.0')		Sample collected at 2.4' - 3.9'
1.60	4.00	timber				
0.80	5.00	ML, clayey, sandy, silt fill, tan, dry, loose, with gravel				Background = 44 cpm, Core = 53 cpm (1 min scan)
-0.40	6.00	ML, clayey, sandy, silt fill, black, moist		100% (3.0' of 3.0')		Strong diesel fuel odor. Appeared to be soaked in diesel fuel (6.0' - 8.0').
-1.60	7.00					Sample collected at 7.0' - 8.0'
-2.00	8.00					

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 020
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.414 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.3 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			33%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 020

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00					Background = 46 cpm, Core = 76 cpm (1 min scan)
4.80		ML, clayey, sandy, silt fill, dark brown, dry, organic				
4.40	1.00					
4.00						
3.60						
3.20	2.00			36% (1.8' of 5.0')		
2.80		ML, clayey, sandy, silt fill, red, moist, with gravel and brick				
2.40	3.00					
2.00						Sample collected at 2.2' - 5.0'
1.60			▽ 3.9			
1.20	4.00	ML, clayey, sandy, silt fill, dark brown, wet, with gravel				
0.80						
0.40	5.00					Background = 46 cpm, Core = 37 cpm (1 min scan)
-0.00						
-0.40						
-0.80	6.00	GP, gravel, brown, wet		27% (0.8' of 3.0')		
-1.20						Sample collected from 5.0' - 8.0'
-1.60	7.00					
-2.00						
-2.40	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 021
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: -2.022 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: N/A
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			56%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 021

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
-2.40	0.00					Background = 44 cpm, Core = 52 cpm (1 min scan)
-2.80						
-3.20	1.00	SP, sand, black, wet, loose, coarse				Sample collected from 0.0' - 2.4'
-3.60						
-4.00	2.00					
-4.40				42% (2.1' of 5.0')		
-4.80						
-5.20	3.00					Strong diesel fuel odor. Appeared to be soaked in diesel fuel (2.4' - 8.0').
-5.60						
-6.00	4.00					
-6.40						
-6.80						
-7.20	5.00	SM, silty sand, black, wet, loose				Background = 44 cpm, Core = 50 cpm (1 min scan)
-7.60						
-8.00	6.00					Sample collected at 5.0' - 6.3'
-8.40				8.0% (2.4' of 3.0')		
-8.80						
-9.20	7.00					
-9.60						
10.00	8.00					

HTRW DRILLING LOG	DISTRICT: CENWK	HOLE NUMBER 022
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 6.565 ft (msl)
	10. DATE STARTED: 7/14/11 / 11. DATE COMPLETED: 7/14/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 5.5 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			55%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 022

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
6.40	0.00	ML, clayey, sandy, silt fill, red/tan, dry, with brick				Background = 46 cpm, Core = 63 cpm (1 min scan)
6.00						
5.60	1.00					
5.20		asphalt				
4.80						
4.40	2.00			44% (2.2' of 5.0')		
4.00						
3.60	3.00					
3.20						
2.80						Sample collected at 2.7' - 5.0'
2.40	4.00					
2.00						
1.60	5.00					Background = 46 cpm, Core = 62 cpm (1 min scan)
1.20						
0.80						
0.40	6.00		▽ 6.1			
-0.00				73% (2.2' of 3.0')		
-0.40	7.00	CL, clay, red, plastic, red, wet, soft, with gravel				Sample collected at 6.6' - 8.0'
-0.80						
-1.20						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 023
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.385 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.8 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 4.26 ft (7/17/11 – 1000)
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			31%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 023

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00					Background = 44 cpm, Core = 74 cpm (1 min scan)
4.80		ML/topsoil, clayey, sandy, silt fill, brown, dry, loose				
4.40	1.00					
4.00						
3.60						
2.00	2.00					
3.20				34% (1.7' of 5.0')		
2.80		asphalt				Sample collected at 2.9' - 5.0'
2.40	3.00					
2.00						
1.60						
4.00	4.00					
1.20						
		CL, clayey fill, red/brown, plastic, moist	▽ 4.4			
0.80						
0.40	5.00					Background = 44 cpm, Core = 48 cpm (1 min scan)
-0.00						
-0.40						
6.00	6.00					
-0.80						
		GC, clayey, gravel fill, red/brown, plastic, moist		27% (0.8' of 3.0')		
-1.20						Sample collected at 5.0' - 8.0'
-1.60	7.00					
-2.00						
-2.40						
	8.00					

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 024
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 5.477 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 4.1 ft (estimated)
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			34%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 024

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
5.20	0.00					Background = 44 cpm, Core = 81 cpm (1 min scan)
4.80		ML/topsoil, clayey, sandy, silt fill, brown, moist, with gravel				Hit refusal at 2', moved 3' south and tried another push.
4.40	1.00					
4.00						
3.60						
3.20	2.00	asphalt		34% (1.7' of 5.0')		SIW-SB-DUP-004 collected from this core.
2.80						
2.40	3.00					
2.00						
1.60						
1.20	4.00	CL clayey fill, red/brown, plastic, wet	▽ 4.1			No second push. Hit refusal.
0.80						
0.40	5.00					

HTRW DRILLING LOG

	DISTRICT: CENWK	HOLE NUMBER 025
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: -0.906 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 0.0 ft
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: N/A
14. TOTAL DEPTH OF HOLE: 5 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			38%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 025

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
-1.20	0.00		0.0			Background = 44 cpm, Core = 48 cpm (1 min scan)
-1.60						
	1.00	SP, sand, black, wet, coarse, wet, loose				
-2.00						
-2.40						
-2.80	2.00					
-3.20				38% (1.9' of 5.0')		
-3.60						
	3.00	CL, clay, red, plastic, wet				
-4.00						
-4.40						
-4.80	4.00					
-5.20						No second push. Hit refusal.
-5.60						
	5.00					
-6.00						

HTRW DRILLING LOG

DISTRICT: CENWK		HOLE NUMBER 026
1. COMPANY NAME: GEO Consultants, LLC	2. DRILL SUBCONTRACTOR: Enviroprobe Services Inc	SHEET 1 OF 2

3. PROJECT: Staten Island Warehouse	4. LOCATION: Staten Island, NY
5. NAME OF DRILLER: Howard Hammel	6. MANUFACTURERS DESIGNATION OF DRILL: Geoprobe 6610 DT
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: 5' Geoprobe DPT soil sampler with acetate liners	8. HOLE LOCATION: See aerial photo below
	9. SURFACE ELEVATION: 1.373 ft (msl)
	10. DATE STARTED: 7/15/11 / 11. DATE COMPLETED: 7/15/11
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 0.0 ft
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 0.23 ft (7/17/11 – 1041)
14. TOTAL DEPTH OF HOLE: 8 ft	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): N/A

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES: N/A

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
			RAD			75%

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
		TEMPORARY MW INSTALLED		

LOCATION SKETCH/COMMENTS

SCALE:

HTRW DRILLING LOG

HOLE NUMBER: 026

PROJECT: Staten Island Warehouse

INSPECTOR: BG

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	DEPTH TO GROUNDWATER (D)	PERCENT RECOVERY (E)	PID SCREENING RESULTS (F)	REMARKS (G)
1.20	0.00		0.0			Background = 44 cpm, Core = 52 cpm (1 min scan)
0.80		SP, sand, brown/red, wet, loose, with gravel				
0.40	1.00					
0.00						
-0.40						
	2.00					
-0.80		SC, clayey sand, red, wet		60% (3.0' of 5.0')		
-1.20						MS/MSD pair taken from this core.
-1.60	3.00					
-2.00						
-2.40						
	4.00					
-2.80		SP, sand, brown/red, wet, loose, with gravel				
-3.20						
-3.60	5.00					Background = 44 cpm, Core = 48 cpm (1 min scan)
-4.00						
-4.40						
	6.00					
-4.80						
-5.20		SM, silty sand, black, wet, organic		100% (3.0' of 3.0')		No sample collected from this push.
-5.60	7.00					
-6.00						
-6.40						
	8.00					

APPENDIX C

QUALITY CONTROL SUMMARY REPORTS

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QUALITY CONTROL SUMMARY REPORT FOR RADIOLOGICAL SAMPLES

1. SAMPLING AND ANALYSIS QUALITY CONTROL

Analytical test methods and sample volume, preservation, holding time, and Quality Control requirements were met, as presented in the Quality Assurance Project Plan (QAPP). Standard methodology was used for sample collection, identification, documentation, handling, packaging, shipping, and chain-of-custody. An assessment of the data for quality and usability is presented in the tables located at the end of this document. The overall quality of this data meets or exceeds the established project objectives. Through proper implementation of the project data verification, validation, and assessment process, project information has been determined to be acceptable for use.

To confirm the quality of sampling and analysis techniques used for this investigation, precision and accuracy of data were evaluated and described below.

1.1 PRECISION AND REPRESENTATIVENESS

Precision is defined as the degree to which two or more measurements are in agreement. Field precision is measured by comparing field duplicate results, and analytical precision is measured by comparing laboratory duplicate results.

1.1.1 Field Precision

Precision and representativeness for radiological results were evaluated by calculating the relative percent difference (RPD), and/or normalized absolute difference (NAD), which accounts for uncertainty in the laboratory results. The calculated RPD results were compared to a performance criteria of less than, or equal to, 50% for soil samples, and less than, or equal to, 30% for groundwater samples. Where RPD values cannot be calculated, or were greater than 50% for soil samples, or greater than 30% for groundwater samples, precision and representativeness were evaluated by calculating the NAD. NAD values of less than 1.96 are considered acceptable. NAD and RPD are calculated as follows:

$$NAD = \left[\frac{|S-D|}{\sqrt{\sigma_S^2 + \sigma_D^2}} \right] \times 100$$

$$RPD = \left[\frac{|S-D|}{\frac{S+D}{2}} \right] \times 100$$

Where:

S = Parent Sample Result
D = Duplicate Sample Result
σ^2_S = Parent Sample Uncertainty
σ^2_D = Duplicate Sample Uncertainty

The calculated NAD results were compared to a performance criteria of less than or equal to 1.96. Calculated NAD values less than 1.96 were considered acceptable. Values greater than 1.96 were

investigated for possible discrepancies in analytical precision or sources of disagreement with the following assumptions of the test:

- The sample measurement and duplicate or replicate measurement are of the same normally-distributed population; and
- The standard deviations represent the true standard deviation of the measured population. NADs for all field duplicates analyzed during this effort were less than 1.96, thus meeting the requirement of the QAPP.

The RPD is calculated for all samples if a detectable result is reported for both the parent and field duplicate. The RPD is not calculated when the analyte in one or both of the samples is not detected. In cases where both the NAD and RPD equation cannot be used, the comparison is counted as acceptable in the overall number of comparisons.

The parent and field duplicate samples were compared for 190 analytes for soil samples, with 5 analytes exceeding the RPD acceptance criteria. This represents a 2.63 exceedance rate. This falls within the acceptable exceedance rate of less than 5%. All comparisons were met for the ground water samples, at 100% acceptance. The RPD values demonstrating acceptable field duplicate precision are presented in Tables C-1 through C-2. Based on the evaluation of this field duplicate data, precision was deemed adequate for the data generated in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.1.2 Laboratory Precision

Laboratory precision was evaluated through calculating the RPD between results for laboratory replicate samples and its associated parent sample. Laboratory replicates were analyzed at a rate of one replicate set per analytical batch. Laboratory replicate samples were considered acceptable if the RPD for groundwater was less than 30%, or less than 50% for soil samples, or if the NAD was less than 1.96. There were no laboratory replicate analyses that fell outside of the acceptance criteria. Acceptable laboratory replicate analyses are presented in Tables C-3 through C-5. Based on the evaluation of this laboratory duplicate data, laboratory precision was deemed adequate for the data generated, in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2 ACCURACY

Accuracy is defined as the degree to which the reported measurement represents the true value. Analytical accuracy is assessed through the evaluation of laboratory blanks, laboratory control samples (LCSs), and matrix spike (MS) recoveries. Based on the evaluation of these samples, the overall analytical accuracy was deemed adequate for the data generated in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.1 Laboratory Method Blanks

Laboratory blanks are analyzed to evaluate the potential contamination of samples due to preparation and analytical procedures. Laboratory method blanks are prepared and analyzed exactly like the field samples and are designed to represent the matrix of interest as closely as possible. Laboratory method blanks were prepared and analyzed with each analytical batch. All laboratory blank results were less than the laboratory minimum detection compounds (MDCs) or reporting limits in all analyses associated with the data generated. Tables C-6 through C-10 demonstrate acceptable blank results for all sample analyses in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.2 Laboratory Control Samples

The LCS is a laboratory spike sample that originates from a source other than the source of the calibration standards and serves as a zero-blind check on the laboratory's accuracy. The LCSs were prepared and analyzed along with each analytical batch. Acceptable LCS results are presented in Tables C-11 through C-14, in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.3 Matrix Spike and Matrix Spike Duplicates

MS/matrix spike duplicate (MSD) analyses are performed by the laboratory on groundwater samples to estimate the extent of bias in the analytical measurements of radiological constituents. The analytical laboratory performed MS/MSD analyses by adding a known quality of each analyte to representative media, and analyzing the spiked media. Bias in the result was quantified by determining the percent recovery of the spike amount. Acceptable MS/MSD results are presented in Tables C-15 through C-17, in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.3 REPRESENTATIVENESS

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program. The representativeness criteria are best satisfied by making certain that sampling locations are properly selected and a sufficient number of samples are collected. Representativeness is addressed by describing sampling techniques and rationale used to select sampling locations. Representativeness is also evaluated through the review of the field precision as described in Section 1.1.1.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The comparability of the data, a relative measure, is influenced by sampling and analytical procedures. By providing specific protocols to be used for obtaining and analyzing samples, data sets should be comparable regardless of who obtains the sample or performs the analysis. The analytical laboratory was responsible for enhancing comparability using the following controls:

- Use of current, standard U.S. Environmentla Protection Agency (EPA) approved methodology for sample preservation, holding, and analysis
- Consistent reporting units for each parameter in similar matrices
- USEPA-traceable standards, when available
- Analysis of USEPA Quality Control (QC) samples, when available
- Participation in inter-laboratory performance evaluation studies

By following these controls, the data obtained during this Site Inspection has met the objectives outlined in the QAPP.

1.5 COMPLETENESS

Completeness is a measure of the degree to which the amount of sample data collected meets the scope. It is also a measure of the relative number of analytical data points that meet the acceptance criteria, including accuracy, precision, and any other criteria required by the specific analytical method used. Completeness is defined as a comparison of the actual numbers of valid data points and expected numbers of points expressed as a percentage. The Quality Assurance objectives for completeness will be based upon a project goal of 90%. If data cannot be reported without qualifications, project completion goals may still be met if the qualified data (i.e., data of known quality even if not perfect) are suitable for the specified project goals. The completeness for this project was 100%, which exceeded the goal of 90%, as specified in the QAPP.

2. DATA MANAGEMENT AND DOCUMENTATION

Management of the field and analytical data generated during the characterization effort was conducted in accordance with the general requirements of the Project Work Plan (USACE 2011a).

2.1 FIELD DATA

Field and QC data was recorded in logbooks and/or field sheets, scanned, and included in Appendix A.

During the field investigation, a Daily Quality Control Report (DQCR) was prepared daily. Each original paper copy was dated and signed by the Field Operations Manager. Copies of the DQCRs are included in Appendix A. DQCRs served to document the daily activities occurring on the project, including the weather for each day and any additional environmental conditions or observations pertinent to field activities. Also recorded on the DQCR were the names and roles of team members' present on-site, as well as visitors to the immediate investigation area. Any changes or delays in the project were discussed and recorded, as well as any safety issues that arose.

2.2 ANALYTICAL DATA

Samples collected during the characterization effort were identified by a unique number code that accompanied the sample from collection through analysis and data review. Standardized chain-of-custody procedures were followed from sample collection through sample analysis. The condition of shipping coolers and enclosed sample containers were documented upon receipt at the analytical laboratory. The laboratory transmitted the completed chain-of-custody form and cooler receipt checklist to the Project Manager (PM) to confirm each sample shipment.

Analytical data reports containing results of the requested analyses were transmitted to the PM. Each data package contained an electronic data deliverable (EDD) spreadsheet summarizing the analytical results, as well as an electronic file containing the entire case narrative and supporting data. The electronic files were uploaded to the corporate server and backed up on a CD. Laboratory data reports are included in Appendix E.

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TABLES

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Table C-1. Alpha and Gamma Spec Field Duplicate Precision for Soil Samples

	Alpha Spec					
	Uranium 234		Uranium 235/236		Uranium 238	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-SS-016P-0.0-2.0/SIW-SS-DUP-002	0.84	0.06	20.80	0.65	2.58	0.19
SIW-SS-018P-0.0-2.0/SIW-SS-DUP-004	42.32	3.03	32.13	0.91	40.34	2.90
SIW-SS-021P-0.0-2.0/SIW-SS-DUP-001	6.70	0.34	5.00	0.06	11.11	0.58
SIW-SS-024P-0.0-2.0/SIW-SS-DUP-003	10.11	0.55	41.10	0.54	3.99	0.22
SIW-SS-040P-0.0-2.0/SIW-SS-DUP-005	14.01	0.77	11.06	0.16	31.58	1.69
SIW-SB-004P-0.0-5.0/SIW-SB-DUP-001	9.40	0.40	55.56	0.53	20.98	0.85
SIW-SB-005P-5.0-8.0/SIW-SB-DUP-002	2.86	0.12	49.75	0.56	11.94	0.49
SIW-SB-010P-5.0-8.0/SIW-SB-DUP-005	**82.26**	**3.99**	30.30	0.37	**94.40**	**4.55**
SIW-SB-018P-0.0-5.0/SIW-SB-DUP-003	33.50	2.60	50.35	1.83	35.05	2.68
SIW-SB-024P-0.0-5.0/SIW-SB-DUP-004	13.87	0.75	10.69	0.14	11.17	0.63

	Gamma Spec															
	Actinium 227		Actinium 228		Bismuth 212		Bismuth 214		Lead 210		Lead 212		Lead 214		Potassium 40	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-SS-016P-0.0-2.0/SIW-SS-DUP-002	40.88	0.65	0.00	0.00	20.69	0.18	23.40	2.47	36.02	0.96	11.07	0.53	19.78	2.20	16.87	0.47
SIW-SS-018P-0.0-2.0/SIW-SS-DUP-004	90.91	0.39	38.16	0.97	44.44	0.23	3.63	0.38	29.91	0.57	16.96	0.76	5.82	0.65	25.48	0.82
SIW-SS-021P-0.0-2.0/SIW-SS-DUP-001	24.39	0.08	31.70	1.12	102.78	0.93	19.94	0.79	59.46	0.34	16.57	0.88	1.16	0.05	9.52	0.40
SIW-SS-024P-0.0-2.0/SIW-SS-DUP-003	-121.57	0.74	14.55	0.43	19.61	0.06	16.05	0.69	46.15	0.13	17.14	0.72	8.60	0.45	3.89	0.17
SIW-SS-040P-0.0-2.0/SIW-SS-DUP-005	161.90	0.17	11.03	0.40	8.57	0.08	10.19	0.39	190.24	0.96	9.61	0.44	3.49	0.17	8.47	0.37
SIW-SB-004P-0.0-5.0/SIW-SB-DUP-001	128.00	0.99	18.49	0.30	78.79	0.39	14.04	0.49	80.00	0.33	2.87	0.12	10.26	0.42	29.83	1.16
SIW-SB-005P-5.0-8.0/SIW-SB-DUP-002	14.29	0.02	5.78	0.18	152.74	1.76	7.32	0.29	69.09	0.59	25.86	1.26	13.65	0.48	12.20	0.53
SIW-SB-010P-5.0-8.0/SIW-SB-DUP-005	-400.00	0.05	6.50	0.18	66.67	0.40	**96.55**	**2.88**	66.67	0.43	49.28	2.02	**79.85**	**2.62**	0.87	0.03
SIW-SB-018P-0.0-5.0/SIW-SB-DUP-003	21.67	0.22	11.25	0.34	31.58	0.39	24.03	2.39	31.25	0.85	2.86	0.13	30.06	3.10	4.42	0.21
SIW-SB-024P-0.0-5.0/SIW-SB-DUP-004	115.56	1.12	12.29	0.45	30.57	0.41	0.00	0.00	77.97	0.74	0.54	0.03	0.53	0.03	6.78	0.28
	Protactinium 231		Radium (226)		Radium 228		Thallium 208		Thorium 232		Thorium 234		Uranium 235		Uranium 238	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-SS-016P-0.0-2.0/SIW-SS-DUP-002	60.32	0.44	23.40	2.47	0.00	0.00	14.01	0.31	0.00	0.00	12.50	0.25	8.70	0.05	12.50	0.25
SIW-SS-018P-0.0-2.0/SIW-SS-DUP-004	108.57	0.52	3.63	0.38	38.16	0.97	26.37	0.59	38.16	0.97	22.73	0.81	10.53	0.16	22.73	0.81
SIW-SS-021P-0.0-2.0/SIW-SS-DUP-001	117.65	0.70	19.94	0.79	31.70	1.12	21.14	0.71	31.70	1.12	16.95	0.16	92.31	0.54	16.95	0.16
SIW-SS-024P-0.0-2.0/SIW-SS-DUP-003	38.10	0.12	16.05	0.69	14.55	0.43	7.87	0.20	14.55	0.43	79.33	0.75	136.45	0.31	79.33	0.75
SIW-SS-040P-0.0-2.0/SIW-SS-DUP-005	13.33	0.07	10.19	0.39	11.03	0.40	12.66	0.31	11.03	0.40	28.26	0.39	25.45	0.13	28.26	0.39
SIW-SB-004P-0.0-5.0/SIW-SB-DUP-001	49.18	0.39	14.04	0.49	18.49	0.30	7.41	0.21	18.49	0.30	27.37	0.14	6.45	0.03	27.37	0.14
SIW-SB-005P-5.0-8.0/SIW-SB-DUP-002	227.91	1.48	7.32	0.29	5.78	0.18	31.11	0.99	5.78	0.18	96.00	1.35	300.00	0.13	96.00	1.35
SIW-SB-010P-5.0-8.0/SIW-SB-DUP-005	24.76	0.16	**96.55**	**2.88**	6.50	0.18	63.82	1.67	6.50	0.18	52.63	0.44	104.76	0.32	52.63	0.44
SIW-SB-018P-0.0-5.0/SIW-SB-DUP-003	53.85	0.46	24.03	2.39	11.25	0.34	0.00	0.00	11.25	0.34	45.85	1.60	74.88	0.99	45.85	1.60
SIW-SB-024P-0.0-5.0/SIW-SB-DUP-004	57.73	0.56	0.00	0.00	12.29	0.45	13.33	0.41	12.29	0.45	3.39	0.03	46.81	0.19	3.39	0.03

Table C-2. Field Duplicate Precision for Groundwater Samples

	Gross Alpha		Gross Beta		Radium (226)		Radium 228		Uranium 234		Uranium 235/236		Uranium 238	
Sample Name	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD
SIW-GW-05FP/SIW-GW-FDUP	72.34	0.26	53.33	0.65	15.93	0.33	19.05	0.20	4.08	0.13	35.56	0.25	9.20	0.30
SIW-GW-05UFP/SIW-GW-UFDUP	174.19	0.24	63.08	0.94	87.38	1.70	148.15	1.01	32.56	1.18	10.53	0.07	35.29	1.26

Table C-3. Laboratory Replicate Results for Alpha Spec

	Uranium 234		Uranium 235/236		Uranium 238	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-GW-010UFP	28	0.87	2	0.01	8	0.24
SIW-SB-006P-5.0-8.0	19	0.67	38	0.26	13	0.44
SIW-SB-008P-0.0-5.0	32	1.44	2	0.02	12	0.55
SIW-SS-018P-0.0-2.0	0.5	0.04	28	0.67	4	0.28
SIW-SS-033P-0.0-2.0	4	0.23	76	0.96	16	0.92

Table C-4. Laboratory Replicate Results for Gamma Spec

	Actinium 227		Actinium 228		Bismuth 212		Bismuth 214		Lead 210		Lead 212		Lead 214		Potassium 40	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-SB-006P-5.0-8.0	63	0.69	47	0.97	69	0.62	2	0.08	63	0.47	25	0.79	7	0.25	26	1.08
SIW-SB-017P-0.0-5.0	54	0.18	27	0.85	4	0.03	4	0.26	0.9	0.00	11	0.50	6	0.40	6	0.31
SIW-SS-007P-0.0-2.0	462	1.03	43	0.88	110	1.19	11	0.26	226	0.92	24	0.75	10	0.25	2	0.10
SIW-SS-027P-0.0-2.0	44	0.43	16	0.57	57	0.80	5	0.13	162	0.70	12	0.59	11	0.43	10	0.51
SIW-SS-DUP-001	104	0.20	0.04	0.00	36	0.60	21	0.85	17	0.12	11	0.58	12	0.47	5	0.22
	Protactinium 231		**Radium (226)**		**Radium 228**		**Thallium 208**		**Thorium 232**		**Thorium 234**		**Uranium 235**		**Uranium 238**	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**	**RPD**	**NAD**
SIW-SB-006P-5.0-8.0	330	0.46	2	0.08	47	0.97	24	0.48	47	0.97	109	0.94	8	0.03	109	0.94
SIW-SB-017P-0.0-5.0	24	0.16	4	0.26	27	0.85	0.05	0.00	27	0.85	47	0.43	63	0.25	47	0.43
SIW-SS-007P-0.0-2.0	205	0.58	11	0.26	43	0.88	10	0.22	43	0.88	9	0.09	376	0.76	9	0.09
SIW-SS-027P-0.0-2.0	6240	0.73	5	0.13	16	0.57	5	0.14	16	0.57	41	0.29	6	0.04	41	0.29
SIW-SS-DUP-001	115	1.05	21	0.85	0.04	0.00	3	0.10	0.04	0.00	8	0.06	21	0.08	8	0.06

Table C-5. Laboratory Replicate Results for Gross Alpha/Beta

	Gross Alpha		Gross Beta	
Sample Name	**RPD**	**NAD**	**RPD**	**NAD**
SIW-GW-010FP	1040	0.15	18	0.28
SIW-GW-010UFP	118	0.20	15	0.30

Table C-6. Gross Alpha/Beta Blank Results

	Gross Alpha			Gross Beta		
LAB SAMPLE ID	**Result**	**Units**	**Qualifier**	**Result**	**Units**	**Qualifier**
F1G250000128B	0.38	pCi/L	U	0.3	pCi/L	U
F1H010000091B	0.06	pCi/L	U	-0.43	pCi/L	U

Table C-7. Radium 226 Blank Results

	Radium (226)		
LAB SAMPLE ID	**Result**	**Units**	**Qualifier**
F1G190000160B	0.12	pCi/L	U

Table C-8. Radium 228 Blank Results

	Radium 228		
LAB SAMPLE ID	**Result**	**Units**	**Qualifier**
F1G190000162B	0.33	pCi/L	U

Table C-9. Alpha Spec Blank Results

	Uranium 234			Uranium 235/236			Uranium 238		
LAB SAMPLE ID	**Result**	**Units**	**Qualifier**	**Result**	**Units**	**Qualifier**	**Result**	**Units**	**Qualifier**
F1H080000094B	0.015	pCi/g	U	0.004	pCi/g	U	-0.002	pCi/g	U
F1H080000118B	0.008	pCi/g	U	0	pCi/g	U	0.008	pCi/g	U
F1H090000094B	0.012	pCi/g	U	0	pCi/g	U	0.011	pCi/g	U
F1H090000095B	0.003	pCi/g	U	-0.0012	pCi/g	U	0.006	pCi/g	U
F1H100000106B	0.013	pCi/g	U	-0.0011	pCi/g	U	0	pCi/g	U
F1H110000136B	0.014	pCi/g	U	-0.0011	pCi/g	U	0.009	pCi/g	U
F1H110000151B	-0.002	pCi/g	U	0	pCi/g	U	-0.002	pCi/g	U
F1H110000174B	0.003	pCi/g	U	0.008	pCi/g	U	-0.0018	pCi/g	U
F1H250000147B	0.005	pCi/g	U	0	pCi/g	U	-0.0009	pCi/g	U

Table C-10. Gamma Spec Blank Results

	Actinium 227			Actinium 228			Bismuth 212			Bismuth 214			Lead 210			Lead 212			Lead 214			Potassium 40		
LAB SAMPLE ID	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**
F1G250000061B	0.002	pCi/g	U	0.011	pCi/g	U	0	pCi/g	U	0.03	pCi/g	U	-0.2	pCi/g	U	0.03	pCi/g	U	0.1	pCi/g	U	0.09	pCi/g	U
F1G250000064B	0.033	pCi/g	U	0.025	pCi/g	U	0	pCi/g	U	0.03	pCi/g	U	-0.1	pCi/g	U	0.03	pCi/g	U	0.126	pCi/g	U	-0.3	pCi/g	U
F1G250000066B	-0.014	pCi/g	U	0	pCi/g	U	0	pCi/g	U	7E-05	pCi/g	U	-0.12	pCi/g	U	0.032	pCi/g	U	0.096	pCi/g	U	-0.2	pCi/g	U
F1G250000067B	-0.04	pCi/g	U	0.11	pCi/g	U	0.13	pCi/g	U	0.048	pCi/g	U	0.4	pCi/g	U	0.093	pCi/g	U	0.075	pCi/g	U	-0.1	pCi/g	U
F1G250000068B	0.006	pCi/g	U	0.15	pCi/g	U	0.03	pCi/g	U	0.13	pCi/g	U	0.54	pCi/g	U	0.044	pCi/g	U	0.128	pCi/g	U	-0.04	pCi/g	U
	Protactinium 231			**Radium (226)**			**Radium 228**			**Thallium 208**			**Thorium 232**			**Thorium 234**			**Uranium 235**			**Uranium 238**		
LAB SAMPLE ID	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**	**Result**	**Units**	**Qual**
F1G250000061B	-0.002	pCi/g	U	0.03	pCi/g	U	0.011	pCi/g	U	-0.01	pCi/g	U	0.011	pCi/g	U	-0.3	pCi/g	U	-0.013	pCi/g	U	-0.3	pCi/g	U
F1G250000064B	0.03	pCi/g	U	0.03	pCi/g	U	0.025	pCi/g	U	0.008	pCi/g	U	0.025	pCi/g	U	0.22	pCi/g	U	-0.04	pCi/g	U	0.22	pCi/g	U
F1G250000066B	0.05	pCi/g	U	7E-05	pCi/g	U	0	pCi/g	U	-0.01	pCi/g	U	0	pCi/g	U	0.15	pCi/g	U	0.03	pCi/g	U	0.15	pCi/g	U
F1G250000067B	0.13	pCi/g	U	0.048	pCi/g	U	0.11	pCi/g	U	0.025	pCi/g	U	0.11	pCi/g	U	0.3	pCi/g	U	0.03	pCi/g	U	0.3	pCi/g	U
F1G250000068B	0.09	pCi/g	U	0.13	pCi/g	U	0.15	pCi/g	U	0.037	pCi/g	U	0.15	pCi/g	U	0.73	pCi/g	U	-0.05	pCi/g	U	0.73	pCi/g	U

Table C-11. LCS Results for Radium 226 and Radium 228

LAB SAMPLE ID	Radium (226)	Radium 228	
F1G190000160C	75		
F1G190000162C		86	
Control Limits	64-125	65-126	

Table C-12. LCS Results for Gross Alpha/Beta

LAB SAMPLE ID	Gross Alpha	Gross Beta
F1G250000128C	100	106
F1H010000091C	77	101
Control Limits	74-138	75-125

Table C-13. LCS Results for Gamma Spec

LAB SAMPLE ID	Radium (226)	Thorium 232
F1G250000061C	94	107
F1G250000064C	99	114
F1G250000066C	94	120
F1G250000067C	90	107
F1G250000068C	96	109
Control Limits	83-110	90-123

Table C-14. LCS Results for Alpha Spec

LAB SAMPLE ID	Uranium 234	Uranium 238
F1H080000094C	101	107
F1H080000118C	98	90
F1H090000094C	99	95
F1H090000095C	102	99
F1H100000106C	98	104
F1H110000136C	111	112
F1H110000151C	93	98
F1H110000174C	94	103
F1H250000147C	98	100
Control Limits	74-139	75-140

Table C-15. Matrix Spike Results for Gross Alpha/Beta

	Gross Alpha	Gross Beta
LAB SAMPLE ID	**Percent Recovery**	**Percent Recovery**
F1G190461013SREA	114	102
F1G190461014S	106	100
Control Limits	40-150	68-150

Table C-16. Matrix Spike Results for Radium 226

	Radium (226)
LAB SAMPLE ID	**Percent Recovery**
F1G190461013S	77
F1G190461014S	97
Control Limits	68-129

Table C-17. Matrix Spike Duplicate Results for Radium 226

	Radium (226)	
LAB SAMPLE ID	**Relative Percent Difference**	
F1G190461013D	5	
F1G190461014D	16	
Control Limits	0-40	

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Comprehensive Data Validation

Project: Staten Island
SDG Number: F1G190456
Laboratory: Test America
Analysis: Alpha Spec; Gamma Spec
Matrix: Soil

The above data package has been reviewed and the analytical quality control/quality assurance performance data have been summarized. The general criteria used to assess the analytical integrity of the data were based on an examination of the following:

Case Narrative
Analytical Holding Times
Sample Preservation
Method Calibration
Method and Project Blanks
Method Calibration Verification
Analytical Surrogate Recoveries
MS/MSD Recoveries and Differences
LCS/LCSD Recoveries and Differences
Re-analysis and Secondary Dilution
Internal Standards Performance
Tuning Standard
Endrin/DDT Breakdown

Definition of EPA Qualifiers:

"U" - Not detected at the associated level
"UJ" - Not detected and associated value estimated
"J" - Associated value estimated
"R" - Associated value unusable or analyte identity unfounded
"=" - Compound properly identified and value positive (Optional for FUSRAP only)

Overall Remarks:

The relative percent difference for Bi-212 lab replicates were greater than 35% for sample SIW-SS-DUP-001. Since the NAD is less than 1.96, no qualification is needed.

MS and MSD samples were taken, but not checked in or analyzed by the lab. Please see the attached email for additional information.

Please see the attached worksheet for further information relating to the RL.

Reviewed by: (print) Jessica Mattison Date: 9/12/2011
(Sign) _____

Peer Reviewed by: (print) Jay Wilkins Date: 9/15/2011
(Sign) _____

I. Sample Name cross-reference

Enter the names of the project sample(s) and Lab Sample name(s) associated with the sample(s):

Project sample name	Phase	Lab sample name	additional lab sample names (if any)
SIW-SS-DUP-001	Solid	F1G190456-001	MK1PV
SIW-SS-DUP-002	Solid	F1G190456-002	MK1PX
SIW-SS-DUP-003	Solid	F1G190456-003	MK1P1
SIWSS-DUP-004	Solid	F1G190456-004	MK1P3
SIW-SS-DUP-005	Solid	F1G190456-005	MK1P7
SIW-SS-037P-0.0-2.0	Solid	F1G190456-006	MK1P8
SIW-SS-038P-0.0-2.0	Solid	F1G190456-007	MK1P9
SIW-SS-039P-0.0-2.0	Solid	F1G190456-008	MK1QA
SIW-SS-040P-0.0-2.0	Solid	F1G190456-009	MK1QC
SIW-SS-041P-0.0-2.0	Solid	F1G190456-010	MK1QD
SIW-SS-042P-0.0-2.0	Solid	F1G190456-011	MK1QE
SIW-SS-043P-0.0-2.0	Solid	F1G190456-012	MK1QF
SIW-SS-044P-0.0-2.0	Solid	F1G190456-013	MK1QG
SIW-SS-045P-0.0-2.0	Solid	F1G190456-014	MK1QH

II. Case Narrative

Direct statement(s) from the lab of problems and/or unusual occurrences. Note disagreements and reasons for the disagreement with the Laboratory Statement.

Remarks:

There were no issues noted on the Case Narrative. Case Narrative was found to be complete and accurate.

III. Re-analysis and Secondary Dilutions

Verify that re-analysis and secondary dilutions were performed and reported as necessary.
Determine appropriate results to report.

No reanalyses or secondary dilutions required. Acceptable.

IV. Holding Times

Remarks: (Maximum holding time is set for a particular analysis, if the holding time exceeds twice the max limit, then qualify all analytes with 'R' for rejected data point.)

Acceptable.

V. Calibration

Remarks:

Acceptable.

Required MDAs:

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0
Th-232	0.5 pCi/g

VI. Blanks

Remarks:

Acceptable.

VII. Surrogate Recoveries and Radiological Tracer Recoveries

Remarks:

Acceptable

VIII. Internal Standards Performance

Remarks:

NA

IX. Instrument Performance Checks

Remarks:

NA

X. Matrix Spike and Matrix Spike Duplicates

Remarks:

NA

XI. Duplicate Analysis

Radiochemical Duplicate Information

Identify the method utilized to evaluate duplicate analyses; duplicate error ratio (DER), relative percent difference (RPD), or normalized absolute difference (NAD).
Duplicate actions should apply to all samples associated with the duplicate pair.

Deviations:

Duplicate Sample(s)				
Radionuclide	**DER / RER**	**RPD**	**NAD**	**Samples Affected**
Bi-212		36	0.6	SIW-SS-DUP-001

Remarks:

The relative percent difference for Bi-212 lab replicates were greater than 35% for sample SIW-SS-DUP-001. Since the NAD is less than 1.96, no qualification is needed.

XII. Laboratory Control Sample

General Laboratory Control Sample Criteria, percent recovery (use Lab provided criteria when available):

VOC	SVOC	Pesticides	PCB	Aqueous	Solid
80-120	60-120	50-130	50-130	80-120	70-130

Deviations:

Compound	Method	Date	Percent Recovery	Recovery Limits	RC	Samples Affected

Remarks:

Acceptable.

Radiological LCS limits
70% - 130%

XIII. Analytical Method Specific Information

LAB SAMPLE ID	STYPE	CLIENT SAMPLE DESCRIPTION	COMPOUND NAME	UNITS	RESULT	QUALIFIERS	TOTAL UNCERTAINTY	RPT LIMIT/MDC
F1G190456001	SO	SIW-SS-DUP-001	Uranium 235	pCi/g	0.14	U	0.28	0.52
F1G190456001	SO	SIW-SS-DUP-001	Uranium 238	pCi/g	3.2		2.6	3.2
F1G190456001X	DUP	SIW-SS-DUP-001	Uranium 235	pCi/g	0.18	U	0.38	0.66
F1G190456001X	DUP	SIW-SS-DUP-001	Uranium 238	pCi/g	3		2.1	2.7
F1G190456002	SO	SIW-SS-DUP-002	Uranium 235	pCi/g	1.1	U	1.1	1.9
F1G190456002	SO	SIW-SS-DUP-002	Uranium 238	pCi/g	10.5		2.5	6.5
F1G190456003	SO	SIW-SS-DUP-003	Uranium 235	pCi/g	0.017	U	0.083	0.55
F1G190456003	SO	SIW-SS-DUP-003	Uranium 238	pCi/g	2.5		1.7	2.3
F1G190456004	SO	SIW-SS-DUP-004	Uranium 235	pCi/g	2.7		1.3	1.7
F1G190456004	SO	SIW-SS-DUP-004	Uranium 238	pCi/g	31.2		7.2	8.1
F1G190456005	SO	SIW-SS-DUP-005	Uranium 235	pCi/g	0.24	U	0.35	0.66
F1G190456005	SO	SIW-SS-DUP-005	Uranium 238	pCi/g	1.58	U	0.86	2.4
F1G190456006	SO	SIW-SS-037P-0.0-2.0	Uranium 235	pCi/g	0.02	U	0.47	0.82
F1G190456006	SO	SIW-SS-037P-0.0-2.0	Uranium 238	pCi/g	3.3		1.3	3.3
F1G190456007	SO	SIW-SS-038P-0.0-2.0	Uranium 235	pCi/g	-0.04	U	4.1	0.6
F1G190456007	SO	SIW-SS-038P-0.0-2.0	Uranium 238	pCi/g	1.73	U	0.95	2.6
F1G190456008	SO	SIW-SS-039P-0.0-2.0	Uranium 235	pCi/g	0.2	U	0.42	0.71
F1G190456008	SO	SIW-SS-039P-0.0-2.0	Uranium 238	pCi/g	2.4	U	2.3	3
F1G190456009	SO	SIW-SS-040P-0.0-2.0	Uranium 235	pCi/g	0.31	U	0.39	0.62
F1G190456009	SO	SIW-SS-040P-0.0-2.0	Uranium 238	pCi/g	2.1	U	1	2.8
F1G190456010	SO	SIW-SS-041P-0.0-2.0	Uranium 235	pCi/g	0.23	U	0.43	0.6
F1G190456010	SO	SIW-SS-041P-0.0-2.0	Uranium 238	pCi/g	1.64	U	0.88	2.9
F1G190456011	SO	SIW-SS-042P-0.0-2.0	Uranium 235	pCi/g	0.04	U	0.12	0.3
F1G190456011	SO	SIW-SS-042P-0.0-2.0	Uranium 238	pCi/g	0.3	U	0.93	1.7
F1G190456012	SO	SIW-SS-043P-0.0-2.0	Uranium 235	pCi/g	0.93		0.6	0.78
F1G190456012	SO	SIW-SS-043P-0.0-2.0	Uranium 238	pCi/g	7.1		2.8	3.5
F1G190456013	SO	SIW-SS-044P-0.0-2.0	Uranium 235	pCi/g	0.3	U	0.23	0.45
F1G190456013	SO	SIW-SS-044P-0.0-2.0	Uranium 238	pCi/g	0.87	U	0.63	2
F1G190456014	SO	SIW-SS-045P-0.0-2.0	Uranium 235	pCi/g	1.13		0.79	1.1
F1G190456014	SO	SIW-SS-045P-0.0-2.0	Uranium 238	pCi/g	7.8		3.5	4.7
F1G250000061B	BM	LABQC	Uranium 235	pCi/g	-0.013	U	0.041	0.28
F1G250000061B	BM	LABQC	Uranium 238	pCi/g	-0.3	U	2.9	1.3
F1G190456002	SO	SIW-SS-DUP-002	Thorium 232	pCi/g	2.82		0.68	0.64
F1G190456004	SO	SIW-SS-DUP-004	Thorium 232	pCi/g	3.37		0.73	0.8
F1G190456014	SO	SIW-SS-045P-0.0-2.0	Thorium 232	pCi/g	2.08		0.76	0.63
F1G250000061C	LCS	LABQC	Thorium 232	pCi/g	10.1		0.93	0.57

The laboratory reporting limits for the samples listed above differ from the laboratory reporting limits documented in the QAPP. The requested reporting limits are listed in the table below.

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g

Ra-226	1.0 pCi/g
Th-232	0.5 pCi/g

			A-01-R MOD											
			Uranium 234				Uranium 235/236				Uranium 238			
Lab Sample ID	Sample ID	Sample Type	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19456001	SIW-SS-DUP-001	REG	1.85	0.26	0.03		0.078	0.05	0.045		1.9	0.26	0.04	
F1G19456001X	SIW-SS-DUP-001 DUP	DUP (Alpha Spec)												
F1G19456002	SIW-SS-DUP-002	REG	11.8	1.1	0.04		0.56	0.13	0.03		11.8	1.1	0.04	
F1G19456003	SIW-SS-DUP-003	REG	1.69	0.22	0.03		0.058	0.035	0.014		1.72	0.22	0.01	
F1G19456004	SIW-SS-DUP-004	REG	38	3.4	0.05		2.09	0.36	0.06		37.6	3.4	0.06	
F1G19456005	SIW-SS-DUP-005	REG	1.66	0.22	0.03		0.094	0.046	0.024		1.44	0.2	0.04	
F1G19456006	SIW-SS-037P-0.0-2.0	REG	3.22	0.36	0.03		0.148	0.059	0.025		3.38	0.37	0.01	
F1G19456007	SIW-SS-038P-0.0-2.0	REG	0.94	0.15	0.03		0.038	0.028	0.023		1.04	0.16	0.02	
F1G19456008	SIW-SS-039P-0.0-2.0	REG	1.45	0.19	0.02		0.08	0.04	0.022		1.37	0.19	0.02	
F1G19456009	SIW-SS-040P-0.0-2.0	REG	1.91	0.24	0.03		0.105	0.049	0.029		1.98	0.25	0.02	
F1G19456010	SIW-SS-041P-0.0-2.0	REG	0.77	0.17	0.04		0.007	0.02	0.045	U	0.9	0.19	0.04	
F1G19456011	SIW-SS-042P-0.0-2.0	REG	0.254	0.07	0.025		0.016	0.019	0.014		0.278	0.073	0.012	
F1G19456012	SIW-SS-043P-0.0-2.0	REG	7.19	0.71	0.02		0.39	0.1	0.03		7.17	0.71	0.01	
F1G19456013	SIW-SS-044P-0.0-2.0	REG	1.26	0.18	0.03		0.078	0.042	0.024		1.28	0.18	0.02	
F1G19456014	SIW-SS-045P-0.0-2.0	REG	8.13	0.78	0.02		0.43	0.1	0.01		7.78	0.75	0.02	
F1G25000061B	(blank)	BLK (Alpha Spec)												
F1G25000061C	(blank)	LCS (Alpha Spec)												
F1H08000094B	(blank)	BLK (Iso-U)	0.015	0.016	0.018	U	0.004	0.01	0.022	U	-0.002	0.003	0.021	U
F1H08000094C	(blank)	LCS (Iso-U)	1.65	0.22	0.01						1.81	0.23	0.01	

	GA-01-R															
	Actinium 227				Actinium 228				Bismuth 212				Bismuth 214			
Lab Sample ID	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19456001	0.23	0.57	2.5	U	1.46	0.32	0.13		1.09	0.55	0.74		1.82	0.29	0.17	
F1G19456001X	0.07	0.54	2.2	U	1.46	0.33	0.22		1.58	0.6	0.51		1.47	0.29	0.23	
F1G19456002	2.18	0.87	1.2		2.82	0.68	0.64		1.6	1.1	1.8	U	33.2	2.2	0.5	
F1G19456003	-0.2	0.42	0.71	U	1.02	0.29	0.26		0.28	0.68	1.2	U	1.49	0.27	0.15	
F1G19456004	0.24	0.43	2.2	U	3.37	0.73	0.8		1.1	1.3	2.1	U	36.5	2.5	0.6	
F1G19456005	0.02	0.99	1.7	U	1.37	0.29	0.22		0.67	0.52	0.78	U	1.49	0.26	0.19	
F1G19456006	0.28	0.45	3	U	3.12	0.52	0.3		2.03	0.72	0.86		2.66	0.39	0.27	
F1G19456007	0.21	0.28	0.72	U	1.66	0.38	0.21		0.81	0.7	1.1	U	1.89	0.35	0.19	
F1G19456008	0.57	0.29	0.41		1	0.28	0.38		1.18	0.55	0.57		2.59	0.35	0.21	
F1G19456009	0.19	0.28	1.8	U	1.53	0.27	0.21		0.73	0.52	0.77	U	1.65	0.32	0.26	
F1G19456010	-1.22	0.86	1.4	U	1.37	0.3	0.19		0.68	0.55	0.78	U	1.39	0.29	0.18	
F1G19456011	-0.35	0.41	0.67	U	0.28	0.14	0.17		0.15	0.3	0.54	U	0.33	0.12	0.13	
F1G19456012	0.09	0.29	0.99	U	1.45	0.29	0.12		0.65	0.6	0.95	U	6.18	0.6	0.25	
F1G19456013	0.047	0.065	0.66	U	0.22	0.12	0.36	U	0.03	0.31	0.58	U	1.77	0.27	0.17	
F1G19456014	0.37	0.76	1.3	U	2.08	0.76	0.63		0	1	1.8	U	15.8	1.3	0.3	
F1G25000061B	0.002	0.15	0.29	U	0.011	0.092	0.31	U	0	0.12	0.31	U	0.03	0.12	0.21	U
F1G25000061C																
F1H08000094B																
F1H08000094C																

	Lead 210				Lead 212				Lead 214				Potassium 40			
Lab Sample ID	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19456001	2.4	2.4	3.5	U	1.83	0.24	0.21		1.71	0.27	0.21		11	1.9	0.7	
F1G19456001X	2.8	2.2	2.8	U	1.64	0.22	0.18		1.52	0.3	0.26		11.6	1.9	1	
F1G19456002	21.4	7	8.2		2.67	0.35	0.4		36.9	2.4	0.6		11.4	2.5	2.1	
F1G19456003	0.5	1.4	2.6	U	0.96	0.19	0.15		1.78	0.26	0.2		13.1	2.3	1	
F1G19456004	19.6	7	8.5		2.43	0.38	0.47		38.9	2.5	0.5		17.7	3.7	2.6	
F1G19456005	2.8	2.2	3	U	1.09	0.17	0.15		1.75	0.25	0.19		11.3	1.8	1.1	
F1G19456006	4	2.4	3.3		3.13	0.32	0.2		2.93	0.34	0.26		12.3	2	1	
F1G19456007	4.3	2.8	3.5		1.67	0.29	0.22		1.6	0.29	0.29		14.3	2.7	1.2	
F1G19456008	7.6	3.7	4.7		1.53	0.21	0.19		2.8	0.36	0.23		11.3	1.9	0.6	
F1G19456009	0.07	1.8	3	U	1.2	0.18	0.17		1.69	0.26	0.23		12.3	2	1.1	
F1G19456010	1.4	1.6	2.8	U	1.34	0.24	0.18		1.42	0.23	0.15		16.1	2.8	1.1	
F1G19456011	1.8	1.6	2.1	U	0.44	0.1	0.13		0.3	0.1	0.14		6.1	1.1	0.4	
F1G19456012	5.7	3.1	4		0.96	0.19	0.22		6.15	0.61	0.31		11.7	1.9	1.1	
F1G19456013	3.9	1.6	1.9		0.4	0.11	0.13		1.85	0.27	0.19		5.5	1.2	0.8	
F1G19456014	9.3	3.7	5		1.3	0.32	0.34		16	1.2	0.5		6.8	2.2	2.4	
F1G25000061B	-0.2	1.2	1.8	U	0.03	0.056	0.1	U	0.1	0.077	0.14	U	0.09	0.55	1.2	U
F1G25000061C																
F1H08000094B																
F1H08000094C																

	Protactinium 231				Radium (226)				Radium 228				Thallium 208			
Lab Sample ID	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19456001	0.21	0.29	3.1	U	1.82	0.29	0.17		1.46	0.32	0.13		0.55	0.14	0.12	
F1G19456001X	0.78	0.46	3.6	U	1.47	0.29	0.23		1.46	0.33	0.22		0.57	0.13	0.1	
F1G19456002	4.1	3.2	5.1	U	33.2	2.2	0.5		2.82	0.68	0.64		0.84	0.23	0.24	
F1G19456003	0.5	1.3	2.9	U	1.49	0.27	0.15		1.02	0.29	0.26		0.37	0.11	0.1	
F1G19456004	0.8	2.6	8.8	U	36.5	2.5	0.6		3.37	0.73	0.8		1.03	0.31	0.3	
F1G19456005	0.7	0.85	2.7	U	1.49	0.26	0.19		1.37	0.29	0.22		0.42	0.12	0.11	
F1G19456006	2.3	1.1	3.9	U	2.66	0.39	0.27		3.12	0.52	0.3		0.98	0.18	0.13	
F1G19456007	0.7	1.9	3.3	U	1.89	0.35	0.19		1.66	0.38	0.21		0.64	0.19	0.16	
F1G19456008	0.54	0.63	3.6	U	2.59	0.35	0.21		1	0.28	0.38		0.54	0.15	0.12	
F1G19456009	0.8	1.1	2.8	U	1.65	0.32	0.26		1.53	0.27	0.21		0.37	0.11	0.11	
F1G19456010	0.51	0.6	3.2	U	1.39	0.29	0.18		1.37	0.3	0.19		0.51	0.14	0.12	
F1G19456011	-0.12	0.89	1.6	U	0.33	0.12	0.13		0.28	0.14	0.17		0.188	0.058	0.054	
F1G19456012	0.69	0.56	4.1	U	6.18	0.6	0.25		1.45	0.29	0.12		0.34	0.12	0.13	
F1G19456013	0.5	1.1	1.9	U	1.77	0.27	0.17		0.22	0.12	0.36	U	0.223	0.073	0.068	
F1G19456014	0.7	1.1	6.3	U	15.8	1.3	0.3		2.08	0.76	0.63		0.33	0.18	0.21	
F1G25000061B	-0.002	0.01	1.8	U	0.03	0.12	0.21	U	0.011	0.092	0.31	U	-0.01	1.2	0.09	U
F1G25000061C					11.4	0.98	0.44									
F1H08000094B																
F1H08000094C																

	Thorium 232				Thorium 234				Uranium 235				Uranium 238			
Lab Sample ID	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19456001	1.46	0.32	0.13		3.2	2.6	3.2		0.14	0.28	0.52	U	3.2	2.6	3.2	
F1G19456001X	1.46	0.33	0.22		3	2.1	2.7		0.18	0.38	0.66	U	3	2.1	2.7	
F1G19456002	2.82	0.68	0.64		10.5	2.5	6.5		1.1	1.1	1.9	U	10.5	2.5	6.5	
F1G19456003	1.02	0.29	0.26		2.5	1.7	2.3		0.017	0.083	0.55	U	2.5	1.7	2.3	
F1G19456004	3.37	0.73	0.8		31.2	7.2	8.1		2.7	1.3	1.7		31.2	7.2	8.1	
F1G19456005	1.37	0.29	0.22		1.58	0.86	2.4	U	0.24	0.35	0.66	U	1.58	0.86	2.4	U
F1G19456006	3.12	0.52	0.3		3.3	1.3	3.3		0.02	0.47	0.82	U	3.3	1.3	3.3	
F1G19456007	1.66	0.38	0.21		1.73	0.95	2.6	U	-0.04	4.1	0.6	U	1.73	0.95	2.6	U
F1G19456008	1	0.28	0.38		2.4	2.3	3	U	0.2	0.42	0.71	U	2.4	2.3	3	U
F1G19456009	1.53	0.27	0.21		2.1	1	2.8	U	0.31	0.39	0.62	U	2.1	1	2.8	U
F1G19456010	1.37	0.3	0.19		1.64	0.88	2.9	U	0.23	0.43	0.6	U	1.64	0.88	2.9	U
F1G19456011	0.28	0.14	0.17		0.3	0.93	1.7	U	0.04	0.12	0.3	U	0.3	0.93	1.7	U
F1G19456012	1.45	0.29	0.12		7.1	2.8	3.5		0.93	0.6	0.78		7.1	2.8	3.5	
F1G19456013	0.22	0.12	0.36	U	0.87	0.63	2	U	0.3	0.23	0.45	U	0.87	0.63	2	U
F1G19456014	2.08	0.76	0.63		7.8	3.5	4.7		1.13	0.79	1.1		7.8	3.5	4.7	
F1G25000061B	0.011	0.092	0.31	U	-0.3	2.9	1.3	U	-0.013	0.041	0.28	U	-0.3	2.9	1.3	U
F1G25000061C	10.1	0.93	0.57													
F1H08000094B																
F1H08000094C																

The laboratory reporting limits reported for U-234, U-235, U-238,Ra-226 and Th-232 can results differ from the laboratory reporting limits documented in the QAPP. The result for the Uranium analyses by Alpha Spec should be utilized when the result for Uranium analyzed by Gamma Spec is a non-detected value.

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Comprehensive Data Validation

Project: Staten Island
SDG Number: F1G190461
Laboratory: Test America
Analysis: Gross Alpha/Beta; Alpha Spec: Ra-226 and Ra-228 by GFPC
Matrix: Groundwater

The above data package has been reviewed and the analytical quality control/quality assurance performance data have been summarized. The general criteria used to assess the analytical integrity of the data were based on an examination of the following:

Case Narrative
Analytical Holding Times
Sample Preservation
Method Calibration
Method and Project Blanks
Method Calibration Verification
Analytical Surrogate Recoveries
MS/MSD Recoveries and Differences
LCS/LCSD Recoveries and Differences
Re-analysis and Secondary Dilution
Internal Standards Performance
Tuning Standard
Endrin/DDT Breakdown

Definition of EPA Qualifiers:

"U" - Not detected at the associated level
"UJ" - Not detected and associated value estimated
"J" - Associated value estimated
"R" - Associated value unusable or analyte identity unfounded
"=" - Compound properly identified and value positive (Optional for FUSRAP only)

Overall Remarks:

The Gross Beta LCS recovered below the acceptance criteria. The samples were re-extracted and reanalyzed.

The Gross Alpha/Beta reporting limits for all samples were not met due to a reduction in sample size attributed to the samples' high residual masses.

The Barium carrier recovery for GFPC (Ra-226 and Ra-228) was above the upper control limit for sample SIW-GW-010FP. No abnormalities were observed during the initial preparation of the sample. Therefore the lab truncated the barium carrier recovery yields to 100% . Sample SIW-GW-010FP should be qualified as estimated (J) for Ra-226 and Ra-228 due to potential low bias as a result of truncating the barium carrier recovery.

MS and MSD samples were taken in the field, but were not checked in or analyzed. Please see the attached email for additional information.

Reviewed by: (print) Jessica Mattison Date: 9/12/2011
(Sign) _____

Peer Reviewed by: (print) J. Wilkins Date: 9/15/2011
(Sign) _____

I. Sample Name cross-reference

Enter the names of the project sample(s) and Lab Sample name(s) associated with the sample(s):

Project sample name	Phase	Lab sample name	additional lab sample names (if any)
SIW-GW-016FP	Aqueous	F1G190461-001	MK1P4001
SIW-GW-016UFP	Aqueous	F1G190461-002	MK1QJ002
SIW-GW-FDUP	Aqueous	F1G190461-003	MK1QK003
SIW-GW-UFDUP	Aqueous	F1G190461-004	MK1QR004
SIW-GW-026UFP	Aqueous	F1G190461-005	MK1QT005
SIW-GW-026FP	Aqueous	F1G190461-006	MK1QW006
SIW-GW-023UFP	Aqueous	F1G190461-007	MK1Q0007
SIW-GW-023FP	Aqueous	F1G190461-008	MK1Q1008
SIW-GW-005UFP	Aqueous	F1G190461-009	MK1Q2009
SIW-GW-005FP	Aqueous	F1G190461-010	MK1Q3010
SIW-GW-009FP	Aqueous	F1G190461-011	MK1Q4011
SIW-GW-009UFP	Aqueous	F1G190461-012	MK1Q8012
SIW-GW-010UFP	Aqueous	F1G190461-013	MK1Q9013
SIW-GW-010FP	Aqueous	F1G190461-014	MK1RD014

II. Case Narrative

Direct statement(s) from the lab of problems and/or unusual occurrences. Note disagreements and reasons for the disagreement with the Laboratory Statement.

Remarks:

The Gross Beta LCS recovered below the acceptance criteria. The samples were re-extracted and reanalyzed.

The Gross Alpha/Beta reporting limits for all samples were not met due to a reduction in sample size attributed to the samples' high residual masses.

The Barium carrier recovery for GFPC (Ra-226 and Ra-228) was above the upper control limit for sample SIW-GW-010FP. No abnormalities were observed during the initial preparation of the sample. Therefore the lab truncated the barium carrier recovery yields to 100% .

III. Re-analysis and Secondary Dilutions

Verify that re-analysis and secondary dilutions were performed and reported as necessary.
Determine appropriate results to report.

The Gross Beta LCS recovered below the acceptance criteria. The samples were re-extracted and reanalyzed.

IV. Holding Times

Remarks: (Maximum holding time is set for a particular analysis, if the holding time exceeds twice the max limit, then qualify all analytes with 'R' for rejected data point.)

Acceptable.

V. Calibration

Remarks:

Acceptable.

VI. Blanks

Remarks:

Acceptable.

VII. Surrogate Recoveries and Radiological Tracer Recoveries

Remarks:

The Barium carrier recovery for GFPC (Ra-226 and Ra-228) was above the upper control limit for sample SIW-GW-010FP. No abnormalities were observed during the initial preparation of the sample. Therefore the lab truncated the barium carrier recovery yields to 100% . Sample SIW-GW-010FP should be qualified as estimated for Ra-226 and Ra-228 due to potential low bias as a result of truncating the barium carrier recovery.

VIII. Internal Standards Performance

Remarks:

NA

IX. Instrument Performance Checks

Remarks:

NA

X. Matrix Spike and Matrix Spike Duplicates

Remarks:

Acceptable.

MS and MSD samples were taken in the field, but were not checked in or analyzed.

XI. Duplicate Analysis

Radiochemical Duplicate Information

Identify the method utilized to evaluate duplicate analyses; duplicate error ratio (DER), relative percent difference (RPD), or normalized absolute difference (NAD).
Duplicate actions should apply to all samples associated with the duplicate pair.

Deviations:

Duplicate Sample(s)				SIW-GW-010UFP
Radionuclide	**DER / RER**	**RPD**	**NAD**	**Samples Affected**

Remarks:

Acceptable.

XII. Laboratory Control Sample

General Laboratory Control Sample Criteria, percent recovery (use Lab provided criteria when available):

VOC	SVOC	Pesticides	PCB	Aqueous	Solid
80-120	60-120	50-130	50-130	80-120	70-130

Deviations:

Compound	Method	Date	Percent Recovery	Recovery Limits	RC	Samples Affected

Remarks:

Acceptable.

Radiological LCS limits
70% - 130%

XIII. Analytical Method Specific Information

Note to file:

Date: 09/13/2011

SDG: F1G190461

Test America logged samples in incorrectly. Refer to the sample cross reference below for the correct sample IDs.

Lab logged-incorrectly	Actual Sample ID
SIW-GW-05UFP	SIW-GW-005UFP
SIW-GW-05FP	SIW-GW-005FP
SIW-GW-09UFP	SIW-GW-009UFP
SIW-GW-09UFP	SIW-GW-009UFP

			Gross Alpha				Gross Beta				Radium (226)				Radium 228				Uranium 234				Uranium 235/236				Uranium 238			
Lab Sample ID	Sample ID	Sample Type	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier	Result	Error	MDL	Lab Qualifier
F1G19000160B	(blank)	BLK (Ra-226)									0.12	0.12	1	U																
F1G19000160C	(blank)	LCS (Ra-226)									8.44	0.88	1																	
F1G19000162B	(blank)	BLK (Ra-228)													0.33	0.24	1	U												
F1G19000162C	(blank)	LCS (Ra-228)													4.63	0.59	1													
F1G190461001	SIW-GW-016FP	REG	-35	52	3	U	158	59	4		0.91	0.23	1		0.32	0.23	1	U	0.59	0.15	0.1		0.066	0.054	0.1		0.61	0.16	0.1	
F1G190461002	SIW-GW-016UFP	REG	2	100	3	U	181	81	4		0.73	0.23	1		0.31	0.33	1	U	0.51	0.14	0.1		0.045	0.045	0.1		0.57	0.15	0.1	
F1G190461003	SIW-GW-FDUP	REG	64	82	3	U	114	58	4		0.61	0.2	1		0.38	0.29	1	U	1	0.22	0.1		0.037	0.042	0.1		0.91	0.2	0.1	
F1G190461004	SIW-GW-UFDUP	REG	2	62	3	U	171	61	4		0.29	0.16	1		0.47	0.3	1		1.08	0.22	0.1		0.045	0.048	0.1	U	1.05	0.22	0.1	
F1G190461005	SIW-GW-026UFP	REG	-14	71	3	U	161	60	4		0.29	0.14	1		0.02	0.25	1	U	0.84	0.18	0.1		0.01	0.021	0.1	U	0.65	0.16	0.1	
F1G190461006	SIW-GW-026FP	REG	7	84	3	U	52	72	4	U	-0.03	0.11	1	U	0.16	0.25	1	U	0.76	0.18	0.1		0.012	0.035	0.1	U	0.75	0.18	0.1	
F1G190461007	SIW-GW-023UFP	REG	8	69	3	U	109	54	4		0.27	0.14	1		0.25	0.27	1	U	0.95	0.2	0.1		0.052	0.049	0.1		0.67	0.16	0.1	
F1G190461008	SIW-GW-023FP	REG	24	84	3	U	140	49	4		0.35	0.16	1		0.13	0.27	1	U	0.91	0.21	0.1		0.013	0.026	0.1	U	0.85	0.2	0.1	
F1G190461009	SIW-GW-05UFP	REG	29	93	3	U	89	62	4	U	0.74	0.21	1		0.07	0.26	1	U	1.5	0.28	0.1		0.05	0.05	0.1		1.5	0.28	0.1	
F1G190461010	SIW-GW-05FP	REG	30	100	3	U	66	46	4	U	0.52	0.19	1		0.46	0.27	1		0.96	0.2	0.1		0.053	0.047	0.1		0.83	0.18	0.1	
F1G190461011	SIW-GW-09FP	REG	32	88	3	U	102	47	4		0.85	0.25	1		0.52	0.29	1		1.78	0.29	0.1		0.095	0.064	0.1		1.61	0.27	0.1	
F1G190461012	SIW-GW-09UFP	REG	-17	78	3	U	96	47	4		1.25	0.28	1		0.31	0.22	1	U	2.15	0.33	0.1		0.085	0.061	0.1		1.93	0.3	0.1	
F1G190461013	SIW-GW-010UFP	REG	-10	120	3	U	221	75	4		1.91	0.35	1		0.5	0.24	1		0.98	0.21	0.1		0.055	0.055	0.1	U	0.73	0.18	0.1	
F1G190461013D	SIW-GW-010UFP	MSD									11.5	1.2	1																	
F1G190461013S	SIW-GW-010UFP	SD	6150	760	3		6920	590	4		11	1.1	1																	
F1G190461013X	SIW-GW-010UFP	MSD	-39	78	3	U	190	72	4										0.74	0.18	0.1		0.056	0.053	0.1		0.67	0.17	0.1	
F1G190461014	SIW-GW-010FP	REG	-14	99.9	3	U	137	73	4		2.16	0.37	1		0.51	0.27	1		0.78	0.2	0.1		0.055	0.055	0.1		0.62	0.17	0.1	
F1G190461014D	SIW-GW-010FP	MSD									11.7	1.2	1																	
F1G190461014S	SIW-GW-010FP	SD	5720	710	3		6690	570	4		13.6	1.3	1																	
F1G190461014X	SIW-GW-010FP	DUP	10	120	3	U	165	67	4																					
F1G25000128B	(blank)	BLK (GAB)	0.38	0.46	2	U	0.3	0.56	4	U																				
F1G25000128C	(blank)	LCS (GAB)	54	6	3		69.4	5.9	4																					
F1H01000091B	(blank)	BLK (GAB)	0.06	0.58	2	U	-0.43	0.56	4	U																				
F1H01000091C	(blank)	LCS (GAB)	41.5	5	3		66.3	5.7	4																					
F1H11000151B	(blank)	BLK (Iso-U)																	-0.002	0.004	0.1	U	U	0.0099	0.1	U	-0.002	0.004	0.1	U
F1H11000151C	(blank)	LCS (Iso-U)																	3.04	0.41	0.1						3.33	0.44	0.1	

The laboratory reporting limits reported for U-234, U-235, U-238,Ra-226 and Th-232 can results differ from the laboratory reporting limits documented in the QAPP. The result for the Uranium analyses by Alpha Spec should be utilized when the result for Uranium analyzed by Gamma Spec is a non-detected value.

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Comprehensive Data Validation

Project:	Staten Island
SDG Number:	F1G190465
Laboratory:	Test America
Analysis:	Alpha Spec; Gamma Spec
Matrix:	Soil

The above data package has been reviewed and the analytical quality control/quality assurance performance data have been summarized. The general criteria used to assess the analytical integrity of the data were based on an examination of the following:

Case Narrative
Analytical Holding Times
Sample Preservation
Method Calibration
Method and Project Blanks
Method Calibration Verification
Analytical Surrogate Recoveries
MS/MSD Recoveries and Differences
LCS/LCSD Recoveries and Differences
Re-analysis and Secondary Dilution
Internal Standards Performance
Tuning Standard
Endrin/DDT Breakdown

Definition of EPA Qualifiers:

"U" - Not detected at the associated level
"UJ" - Not detected and associated value estimated
"J" - Associated value estimated
"R" - Associated value unusable or analyte identity unfounded
"=" - Compound properly identified and value positive (Optional for FUSRAP only)

Overall Remarks:

The presence of Th-234/U-238 in sample SIW-SS-009P-0.0-2.0 indicates the presence of Pa-234m. The Pa-234m results were calculated above the MDA in the samples, however, the results may be biased high due to the low abundance at keyline 1001.3 keV. The Pa-234m results for SIW-SS-009P-0.0-2.0 should be qualified with a J as estimated.

Sample SIW-SS-018P-0.0-2.0 was reanalyzed by Alpha Spec due to low tracer recovery. The reanalysis results are reported and acceptable.

Lead-214 was detected in the Method Blank for preparatory batch 1206064 and 1206066 indicating potential contamination. Samples SIW-SS-007P-0.0-2.0 and SIW-SS-019P-0.0-2.0 had Pb-214 detected at levels that were less than the action level (ten times the blank concentration) and with a Normalized Absolute Difference between the blank and sample result of less than 2.58. Samples SIW-SS-007P-0.0-2.0 and SIW-SS-019P-0.0-2.0 should be qualified as estimated (J) for Pb-214 due to potential blank contamination.

The relative percent difference (RPD) between the parent sample and the laboratory replicate for Ac-228, Ra-228, and Th-232 for sample SIW-SS-007P-0.0-2.0 was above the acceptance criteria, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

The RPD between sample SIW-SS-033P-0.0-2.0 and lab replicate for U-235/236 was above the acceptance criteria, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

The RPD between sample SIW-SS-001P-0.0-2.0 and the laboratory replicate was above the acceptance criteria for Bi-212, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

Please see the attached worksheet for further information relating to the RL.

Reviewed by: (print) Jessica Mattison Date: 9/15/2011

(Sign) _____

Peer Reviewed by: Date:

(print) _____ _____

(Sign) _____

I. Sample Name cross-reference

Enter the names of the project sample(s) and Lab Sample name(s) associated with the sample(s):

Project sample name	Phase	Lab sample name	additional lab sample names (if any)
SIW-SS-001P-0.0-2.0	Solid	F1G190465-001	MK1RJ001
SIW-SS-002P-0.0-2.0	Solid	F1G190465-002	MK1RK002
SIW-SS-003P-0.0-2.0	Solid	F1G190465-003	MK1RL003
SIW-SS-004P-0.0-2.0	Solid	F1G190465-004	MK1RM004
SIW-SS-005P-0.0-2.0	Solid	F1G190465-005	MK1RN005
SIW-SS-006P-0.0-2.0	Solid	F1G190465-006	MK1RP006
SIW-SS-007P-0.0-2.0	Solid	F1G190465-007	MK1RR007
SIW-SS-008P-0.0-2.0	Solid	F1G190465-008	MK1RT008
SIW-SS-009P-0.0-2.0	Solid	F1G190465-009	MK1RV009
SIW-SS-010P-0.0-2.0	Solid	F1G190465-010	MK1RW010
SIW-SS-011P-0.0-2.0	Solid	F1G190465-011	MK1RX011
SIW-SS-012P-0.0-2.0	Solid	F1G190465-012	MK1R0012
SIW-SS-013P-0.0-2.0	Solid	F1G190465-013	MK1R1013
SIW-SS-014P-0.0-2.0	Solid	F1G190465-014	MK1R5014
SIW-SS-015P-0.0-2.0	Solid	F1G190465-015	MK1R6015
SIW-SS-016P-0.0-2.0	Solid	F1G190465-016	MK1R7016
SIW-SS-017P-0.0-2.0	Solid	F1G190465-017	MK1R8017
SIW-SS-018P-0.0-2.0	Solid	F1G190465-018	MK1R9018
SIW-SS-019P-0.0-2.0	Solid	F1G190465-019	MK1TA019
SIW-SS-020P-0.0-2.0	Solid	F1G190465-020	MK1TC020
SIW-SS-021P-0.0-2.0	Solid	F1G190465-021	MK1TF021
SIW-SS-022P-0.0-2.0	Solid	F1G190465-022	MK1TG022
SIW-SS-023P-0.0-2.0	Solid	F1G190465-023	MK1TH023
SIW-SS-024P-0.0-2.0	Solid	F1G190465-024	MK1TJ024
SIW-SS-025P-0.0-2.0	Solid	F1G190465-025	MK1TK025
SIW-SS-026P-0.0-2.0	Solid	F1G190465-026	MK1TM026
SIW-SS-027P-0.0-2.0	Solid	F1G190465-027	MK1TR027
SIW-SS-028P-0.0-2.0	Solid	F1G190465-028	MK1TT028
SIW-SS-029P-0.0-2.0	Solid	F1G190465-029	MK1TV029
SIW-SS-030P-0.0-2.0	Solid	F1G190465-030	MK1TW030

SIW-SS-031P-0.0-2.0	Solid	F1G190465-031	MK1T0031
SIW-SS-032P-0.0-2.0	Solid	F1G190465-032	MK1T1032
SIW-SS-033P-0.0-2.0	Solid	F1G190465-033	MK1T2033
SIW-SS-034P-0.0-2.0	Solid	F1G190465-034	MK1T3034
SIW-SS-035P-0.0-2.0	Solid	F1G190465-035	MK1T5035
SIW-SS-036P-0.0-2.0	Solid	F1G190465-036	MK1T6036

II. Case Narrative

Direct statement(s) from the lab of problems and/or unusual occurrences. Note disagreements and reasons for the disagreement with the Laboratory Statement.

Remarks:

The presence of Th-234/U-238 in sample SIW-SS-009P-0.0-2.0 indicates the presence of Pa-234m. The Pa-234m results were calculated above the MDA in the samples, however, the results may be biased high due to the low abundance at keyline 1001.3 keV. The Pa-234m results for SIW-SS-009P-0.0-2.0 should be qualified with a J as estimated.

III. Re-analysis and Secondary Dilutions

Verify that re-analysis and secondary dilutions were performed and reported as necessary.
Determine appropriate results to report.

Sample SIW-SS-018P-0.0-2.0 was reanalyzed by Alpha Spec due to low tracer recovery. The reanalysis results are reported and are acceptable.

IV. Holding Times

Remarks: (Maximum holding time is set for a particular analysis, if the holding time exceeds twice the max limit, then qualify all analytes with 'R' for rejected data point.)

Acceptable.

V. Calibration

Remarks:

Acceptable.

Required MDAs:

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0
Th-232	0.5 pCi/g

VI. Blanks

Radiochemical Blanks

If the blank result is less than the associated uncertainty (error), no qualification will be warranted.
If the blank result is greater than its associated uncertainty, but less than the MDA, then no qualification will be warranted.
If the blank result is greater than the associated uncertainty and greater than the MDA, then qualification of sample results may be appropriate.

Laboratory Method Blanks:

Date	Blank ID	Radionuclide	Result	Error	MDA
7/25/2011	F1G250000-064B	Pb-214	0.126	0.077	0.10
7/25/2011	F1G250000-066B	Pb-214	0.096	0.059	0.088
8/9/2011	F1H090000-094B	U-238	0.011	0.013	0.01

- If the blank result falls outside criteria, qualify associated sample results that are less than 10x the blank value as estimated (J), only if the NAD <2.58
- If the absolute sample result is less than the MDA and the uncertainty is less than the result, qualify as non-detect (U).
- If the absolute sample result is less than the MDA and the uncertainty is greater than the result qualify as non-detect value uncertain (UJ).
- If the sample result is greater than the MDA and the uncertainty is 50-100% of the result, qualify the data as estimated (J).
- If the sample result is greater than the MDA and the uncertainty is greater than 100% of the result, qualify the data as rejected.
- If the sample result is negative, and its absolute value exceeds 2x the MDA, qualify the data as rejected.

Deviations:

Radionuclide	Max Activity	Action Level	NAD	Sample ID
Pb-214	0.126	1.26	2.41	SIW-SS-007P-0.0-2.0
			2.14	SIW-SS-019P-0.0-2.0

Remarks:

Lead-214 was detected in the Method Blank for preparatory batch 1206064 and 1206066 indicating potential contamination. Samples SIW-SS-007P-0.0-2.0 and SIW-SS-019P-0.0-2.0 had Pb-214 detected at levels that were less than the action level (ten times the blank concentration) and with a Normalized Absolute Difference between the blank and sample result of less than 2.58. Samples SIW-SS-007P-0.0-2.0 and SIW-SS-019P-0.0-2.0 should be qualified as estimated (J) for Pb-214 due to potential blank contamination.

VII. Surrogate Recoveries and Radiological Tracer Recoveries

Remarks:

Sample SIW-SS-018P-0.0-2.0 was reanalyzed by Alpha Spec due to low tracer recovery. The reanalysis results is reported.

VIII. Internal Standards Performance

Remarks:

NA

IX. Instrument Performance Checks

Remarks:

NA

X. Matrix Spike and Matrix Spike Duplicates

Remarks:

NA

XI. Duplicate Analysis

Radiochemical Duplicate Information

Identify the method utilized to evaluate duplicate analyses; duplicate error ratio (DER), relative percent difference (RPD), or normalized absolute difference (NAD).
Duplicate actions should apply to all samples associated with the duplicate pair.

Deviations:

Duplicate Sample(s)			F1G190465-001, F1G190465-007, F1G190465-027, F1G190465-033	
Radionuclide	**DER/RER**	**RPD**	**NAD**	**Samples Affected**
Bi-212		36.7	0.6	SIW-SS-001P-0.0-2.0
Ac-228		45	0.88	SIW-SS-007P-0.0-2.0
Ra-228		45	0.88	SIW-SS-007P-0.0-2.0
Th-232		45	0.88	SIW-SS-007P-0.0-2.0
U-235/236		75.5	0.96	SIW-SS-033P-.0-2.0

Remarks:

The relative percent difference (RPD) between the parent sample and the laboratory replicate for Ac-228, Ra-228, and Th-232 for sample SIW-SS-007P-0.0-2.0 was above the acceptance criteria, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

The RPD between sample SIW-SS-033P-0.0-2.0 and lab replicate for U-235/236 was above the acceptance criteria, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

The RPD between sample SIW-SS-001P-0.0-2.0 and the laboratory replicate was above the acceptance criteria for Bi-212, but the NAD is less than 1.96, which proves the data is acceptable and no qualification is necessary.

XII. Laboratory Control Sample

General Laboratory Control Sample Criteria, percent recovery (use Lab provided criteria when available):

VOC	SVOC	Pesticides	PCB	Aqueous	Solid
80-120	60-120	50-130	50-130	80-120	70-130

Deviations:

Compound	Method	Date	Percent Recovery	Recovery Limits	RC	Samples Affected

Remarks:

Acceptable.

Radiological LCS limits
70% - 130%

XIII. Analytical Method Specific Information

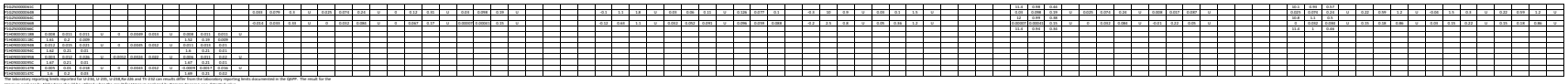
LAB SAMPLE ID	CLIENT SAMPLE DESCRIPTION	COMPOUND NAME	UNITS	RESULT	QUALIFIERS	TOTAL UNCERTAINTY	RPT LIMIT/MDC
F1G190465001	SIW-SS-001P-0.0-2.0	Uranium 235	pCi/g	0.45	U	0.59	1
F1G190465001	SIW-SS-001P-0.0-2.0	Uranium 238	pCi/g	1.2	U	1.3	3.8
F1G190465002	SIW-SS-002P-0.0-2.0	Uranium 235	pCi/g	0.35	U	0.43	0.69
F1G190465002	SIW-SS-002P-0.0-2.0	Uranium 238	pCi/g	1.2	U	1.1	3.3
F1G190465003	SIW-SS-003P-0.0-2.0	Uranium 235	pCi/g	0.11	U	0.2	0.31
F1G190465003	SIW-SS-003P-0.0-2.0	Uranium 238	pCi/g	0.29	U	0.38	1.6
F1G190465004	SIW-SS-004P-0.0-2.0	Uranium 235/236	pCi/g	0.024	U	0.023	0.027
F1G190465004	SIW-SS-004P-0.0-2.0	Uranium 235	pCi/g	0.09	U	0.13	0.51
F1G190465004	SIW-SS-004P-0.0-2.0	Uranium 238	pCi/g	0.6	U	0.65	2
F1G190465005	SIW-SS-005P-0.0-2.0	Uranium 235	pCi/g	0.3	U	0.41	0.68
F1G190465005	SIW-SS-005P-0.0-2.0	Uranium 238	pCi/g	1.55	U	0.97	2.8
F1G190465006	SIW-SS-006P-0.0-2.0	Uranium 235	pCi/g	0.17	U	0.17	0.25
F1G190465006	SIW-SS-006P-0.0-2.0	Uranium 238	pCi/g	0.11	U	0.47	1.5
F1G190465007	SIW-SS-007P-0.0-2.0	Uranium 235	pCi/g	0.11	U	0.14	0.41
F1G190465007	SIW-SS-007P-0.0-2.0	Uranium 238	pCi/g	0.6	U	0.49	1.4
F1G190465007X	SIW-SS-007P-0.0-2.0	Uranium 235	pCi/g	-0.03	U	0.12	0.36
F1G190465007X	SIW-SS-007P-0.0-2.0	Uranium 238	pCi/g	0.66	U	0.45	1.4
F1G190465008	SIW-SS-008P-0.0-2.0	Uranium 235	pCi/g	0.48	U	0.46	0.6
F1G190465008	SIW-SS-008P-0.0-2.0	Uranium 238	pCi/g	2.15	U	0.95	2.6
F1G190465009	SIW-SS-009P-0.0-2.0	Uranium 235	pCi/g	2.9		1.2	1.7
F1G190465009	SIW-SS-009P-0.0-2.0	Uranium 238	pCi/g	34		7.6	8.9
F1G190465010	SIW-SS-010P-0.0-2.0	Uranium 235	pCi/g	0.2	U	0.49	0.75
F1G190465010	SIW-SS-010P-0.0-2.0	Uranium 238	pCi/g	1.75	U	0.97	3
F1G190465011	SIW-SS-011P-0.0-2.0	Uranium 235	pCi/g	0.18	U	0.33	0.59
F1G190465011	SIW-SS-011P-0.0-2.0	Uranium 238	pCi/g	2	U	1.6	2.2
F1G190465012	SIW-SS-012P-0.0-2.0	Uranium 235	pCi/g	0.4	U	0.42	0.69
F1G190465012	SIW-SS-012P-0.0-2.0	Uranium 238	pCi/g	4.1		2.6	3.3
F1G190465013	SIW-SS-013P-0.0-2.0	Uranium 235	pCi/g	1.09	U	0.92	1.7
F1G190465013	SIW-SS-013P-0.0-2.0	Uranium 238	pCi/g	11.6		4.2	5.5
F1G190465014	SIW-SS-014P-0.0-2.0	Uranium 235/236	pCi/g	0.068		0.039	0.027
F1G190465014	SIW-SS-014P-0.0-2.0	Uranium 235	pCi/g	-0.008	U	0.044	0.7
F1G190465014	SIW-SS-014P-0.0-2.0	Uranium 238	pCi/g	2.5	U	2	3.2
F1G190465015	SIW-SS-015P-0.0-2.0	Uranium 235	pCi/g	0.77	U	0.96	1.6
F1G190465015	SIW-SS-015P-0.0-2.0	Uranium 238	pCi/g	7.2		1.9	5.9
F1G190465016	SIW-SS-016P-0.0-2.0	Uranium 235	pCi/g	1.2	U	1.5	2.3
F1G190465016	SIW-SS-016P-0.0-2.0	Uranium 238	pCi/g	11.9		5.1	7.1
F1G190465017	SIW-SS-017P-0.0-2.0	Uranium 235	pCi/g	0.44	U	0.56	0.94
F1G190465017	SIW-SS-017P-0.0-2.0	Uranium 238	pCi/g	2.1	U	2.5	3.4
F1G190465018REA	SIW-SS-018P-0.0-2.0	Uranium 234	pCi/g	58.4		5.8	0.2
F1G190465018REA	SIW-SS-018P-0.0-2.0	Uranium 235/236	pCi/g	2.89		0.8	0.23
F1G190465018REA	SIW-SS-018P-0.0-2.0	Uranium 238	pCi/g	56.6		5.6	0.2
F1G190465018	SIW-SS-018P-0.0-2.0	Uranium 235	pCi/g	3		1.3	1.6
F1G190465018	SIW-SS-018P-0.0-2.0	Uranium 238	pCi/g	39.2		6.7	7.1
F1G190465018XREA	SIW-SS-018P-0.0-2.0	Uranium 234	pCi/g	58.7		5.8	0.2
F1G190465018XREA	SIW-SS-018P-0.0-2.0	Uranium 235/236	pCi/g	2.18		0.7	0.14
F1G190465019	SIW-SS-019P-0.0-2.0	Uranium 235	pCi/g	-0.02	U	0.47	0.29

F1G190465019	SIW-SS-019P-0.0-2.0	Uranium 238	pCi/g	0.28	U	0.43	1.5
F1G190465020	SIW-SS-020P-0.0-2.0	Uranium 235	pCi/g	0.21	U	0.34	0.58
F1G190465020	SIW-SS-020P-0.0-2.0	Uranium 238	pCi/g	2.7		2.1	2.7
F1G190465021	SIW-SS-021P-0.0-2.0	Uranium 235	pCi/g	0.38	U	0.35	0.63
F1G190465021	SIW-SS-021P-0.0-2.0	Uranium 238	pCi/g	2.7		1.6	2.3
F1G190465022	SIW-SS-022P-0.0-2.0	Uranium 235	pCi/g	0.05	U	0.19	0.34
F1G190465022	SIW-SS-022P-0.0-2.0	Uranium 238	pCi/g	0.37	U	0.36	1.3
F1G190465023	SIW-SS-023P-0.0-2.0	Uranium 235	pCi/g	0.34	U	0.4	0.75
F1G190465023	SIW-SS-023P-0.0-2.0	Uranium 238	pCi/g	3.3	U	2.2	3.5
F1G190465024	SIW-SS-024P-0.0-2.0	Uranium 235	pCi/g	0.09	U	0.22	0.49
F1G190465024	SIW-SS-024P-0.0-2.0	Uranium 238	pCi/g	1.08	U	0.81	2.6
F1G190465025	SIW-SS-025P-0.0-2.0	Uranium 235	pCi/g	0.42		0.34	0.41
F1G190465025	SIW-SS-025P-0.0-2.0	Uranium 238	pCi/g	2.9		1.4	1.7
F1G190465026	SIW-SS-026P-0.0-2.0	Uranium 235	pCi/g	0.31	U	0.42	0.82
F1G190465026	SIW-SS-026P-0.0-2.0	Uranium 238	pCi/g	2.8	U	2.4	3.1
F1G190465027	SIW-SS-027P-0.0-2.0	Uranium 235	pCi/g	0.24	U	0.31	0.58
F1G190465027	SIW-SS-027P-0.0-2.0	Uranium 238	pCi/g	1.5	U	1.5	2.1
F1G190465027X	SIW-SS-027P-0.0-2.0	Uranium 235	pCi/g	0.26	U	0.32	0.59
F1G190465027X	SIW-SS-027P-0.0-2.0	Uranium 238	pCi/g	1.01	U	0.8	2.5
F1G190465028	SIW-SS-028P-0.0-2.0	Uranium 235	pCi/g	0.09	U	0.22	0.58
F1G190465028	SIW-SS-028P-0.0-2.0	Uranium 238	pCi/g	2.6		1.6	2.1
F1G190465029	SIW-SS-029P-0.0-2.0	Uranium 235	pCi/g	0.19	U	0.28	0.48
F1G190465029	SIW-SS-029P-0.0-2.0	Uranium 238	pCi/g	1.9		1.5	1.9
F1G190465030	SIW-SS-030P-0.0-2.0	Uranium 235	pCi/g	0.07	U	0.41	0.62
F1G190465030	SIW-SS-030P-0.0-2.0	Uranium 238	pCi/g	3.3		1.8	2.4
F1G190465031	SIW-SS-031P-0.0-2.0	Uranium 235	pCi/g	0.37	U	0.48	0.8
F1G190465031	SIW-SS-031P-0.0-2.0	Uranium 238	pCi/g	2.7	U	2	2.8
F1G190465032	SIW-SS-032P-0.0-2.0	Uranium 235	pCi/g	0.07	U	0.22	0.38
F1G190465032	SIW-SS-032P-0.0-2.0	Uranium 238	pCi/g	0.8	U	1.1	1.8
F1G190465033	SIW-SS-033P-0.0-2.0	Uranium 235	pCi/g	0.015	U	0.069	0.79
F1G190465033	SIW-SS-033P-0.0-2.0	Uranium 238	pCi/g	2.02	U	0.93	2.7
F1G190465034	SIW-SS-034P-0.0-2.0	Uranium 235	pCi/g	0.15	U	0.35	0.79
F1G190465034	SIW-SS-034P-0.0-2.0	Uranium 238	pCi/g	3.9		2.5	3.1
F1G190465035	SIW-SS-035P-0.0-2.0	Uranium 235	pCi/g	0.24	U	0.31	0.56
F1G190465035	SIW-SS-035P-0.0-2.0	Uranium 238	pCi/g	3.5		2	2.5
F1G190465036	SIW-SS-036P-0.0-2.0	Uranium 235	pCi/g	0.13	U	0.37	0.68
F1G190465036	SIW-SS-036P-0.0-2.0	Uranium 238	pCi/g	3		2.2	2.8
F1G250000061B	LABQC	Uranium 235	pCi/g	-0.013	U	0.041	0.28
F1G250000061B	LABQC	Uranium 238	pCi/g	-0.3	U	2.9	1.3
F1G250000064B	LABQC	Uranium 235	pCi/g	-0.04	U	1.5	0.3
F1G250000064B	LABQC	Uranium 238	pCi/g	0.22	U	0.59	1.2
F1G250000066B	LABQC	Uranium 235	pCi/g	0.03	U	0.15	0.22
F1G250000066B	LABQC	Uranium 238	pCi/g	0.15	U	0.18	0.86
F1G190465009	SIW-SS-009P-0.0-2.0	Thorium 232	pCi/g	2.01		0.8	1.2
F1G190465013	SIW-SS-013P-0.0-2.0	Thorium 232	pCi/g	1.82		0.52	0.53
F1G190465015	SIW-SS-015P-0.0-2.0	Thorium 232	pCi/g	2.36		0.7	0.79
F1G190465016	SIW-SS-016P-0.0-2.0	Thorium 232	pCi/g	2.82		0.82	0.77

F1G190465018	SIW-SS-018P-0.0-2.0	Thorium 232	pCi/g	2.29		0.84	0.78
F1G250000061C	LABQC	Thorium 232	pCi/g	10.1		0.93	0.57

The laboratoryreporting limits for the samples listed above differ from the laboratory reporting limits documented in the QAPP. The requested reporting limits are listed in the table below.

Isotope	**QAPP RL**
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0 pCi/g
Th-232	0.5 pCi/g



The laboratory reporting limits reported for U-234, U-235, U-238,Ra-226 and Th-232 can results differ from the laboratory reporting limits documented in the QAPP. The result for the Uranium analyses by Alpha Spec should be utilized when the result for Uranium analyzed by Gamma Spec is a non-detected value.

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Comprehensive Data Validation

Project: Staten Island
SDG Number: F1G190474
Laboratory: Test America
Analysis: Iso-U (EML A-01-R MOD), Gamma Spectrosocpy (GA-01-R MOD)
Matrix: Soil

The above data package has been reviewed and the analytical quality control/quality assurance performance data have been summarized. The general criteria used to assess the analytical integrity of the data were based on an examination of the following:

Case Narrative
Analytical Holding Times
Sample Preservation
Method Calibration
Method and Project Blanks
Method Calibration Verification
Analytical Surrogate Recoveries
MS/MSD Recoveries and Differences
LCS/LCSD Recoveries and Differences
Re-analysis and Secondary Dilution
Internal Standards Performance
Tuning Standard
Endrin/DDT Breakdown

Definition of EPA Qualifiers:

"U" - Not detected at the associated level
"UJ" - Not detected and associated value estimated
"J" - Associated value estimated
"R" - Associated value unusable or analyte identity unfounded
"=" - Compound properly identified and value positive (Optional for FUSRAP only)

Overall Remarks:

Alpha Spec Samples SIW-SB-009P-0.0-5.0 and SIW-SB-015P-0.0-5.0 recovered low for Uranium tracer. Both samples were re-extracted and reanalyzed. The reanalyzed results are reported and were acceptable.

Lead-214 was detected in the Gamma Spec method blank at levels above the MDA for prep batch 1206066. According to the Case Narrative from Test America the variations in Compton backgrounds and statistical analyes allow for small area counts in the regions of interest for this nuclide. Other uranium decay products are not present in the blank to support Lead-214 identification. Additionally, further investigation by the data validator confirmed that no action was required as a result of potential blank contamination.

The Relative Percents Difference (RPD) for the laboratory replicate results for Ac-228, Ra-228, Th-232, Th-234, U-238, and U-235/236 for sample SIW-SB-006P-5.0-8.0 were above the acceptance criteria of 35%. All normalized absolute difference (NAD) were less than the required 1.96, which proves the data to be acceptable.

Please see the attached worksheet for further information relating to the RL.

Reviewed by: (print) Jessica Mattison Date: 9/12/2011
(Sign) _____

Peer Reviewed by: (print) J Wilkins Date: 9/15/2011
(Sign) _____

I. Sample Name cross-reference

Enter the names of the project sample(s) and Lab Sample name(s) associated with the sample(s):

Project sample name	Phase	Lab sample name	additional lab sample names (if any)
SIW-SB-001P-0.0-5.0	Solid	F1G190474-001	MK1VG001
SIW-SB-001P-5.0-10.0	Solid	F1G190474-002	MK1VJ002
SIW-SB-002P-0.0-5.0	Solid	F1G190474-003	MK1VK003
SIW-SB-003P-0.0-5.0	Solid	F1G190474-004	MK1VM004
SIW-SB-003P-5.0-8.0	Solid	F1G190474-005	MK1VN005
SIW-SB-004P-0.0-5.0	Solid	F1G190474-006	MK1VP006
SIW-SB-004P-5.0-10.0	Solid	F1G190474-007	MK1VT007
SIW-SB-005P-0.0-5.0	Solid	F1G190474-008	MK1VW008
SIW-SB-005P-5.0-8.0	Solid	F1G190474-009	MK1VX009
SIW-SB-006P-0.0-5.0	Solid	F1G190474-010	MK1V2010
SIW-SB-006P-5.0-8.0	Solid	F1G190474-011	MK1V3011
SIW-SB-007P-0.0-5.0	Solid	F1G190474-012	MK1V5012
SIW-SB-007P-5.0-8.0	Solid	F1G190474-013	MK1V7013
SIW-SB-008P-0.0-5.0	Solid	F1G190474-014	MK1V9014
SIW-SB-008P-5.0-8.0	Solid	F1G190474-015	MK1WD015
SIW-SB-009P-0.0-5.0	Solid	F1G190474-016	MK1WF016
SIW-SB-09P-5.0-8.0	Solid	F1G190474-017	MK1WG017
SIW-SB-010P-0.0-5.0	Solid	F1G190474-018	MK1WH018
SIW-SB-10P-5.0-8.0	Solid	F1G190474-019	MK1WJ019
SIW-SB-011P-0.0-5.0	Solid	F1G190474-020	MK1WK020
SIW-SB-011P-5.0-8.0	Solid	F1G190474-021	MK1WM021
SIW-SB-012P-0.0-5.0	Solid	F1G190474-022	MK1WN022
SIW-SB-012P-5.0-8.0	Solid	F1G190474-023	MK1WP023
SIW-SB-13P-0.0-5.0	Solid	F1G190474-024	MK1WQ024
SIW-SB-013P-5.0-8.0	Solid	F1G190474-025	MK1WR025
SIW-SB-014P-0.0-5.0	Solid	F1G190474-026	MK1WT026
SIW-SB-014P-5.0-8.0	Solid	F1G190474-027	MK1WV027
SIW-SB015P-0.0-5.0	Solid	F1G190474-028	MK1WW028
SIW-SB-016P-0.0-5.0	Solid	F1G190474-029	MK1WX029
SIW-SB-016P-5.0-8.0	Solid	F1G190474-030	MK1WO030

SIW-SB-017P-0.0-5.0	Solid	F1G190474-031	MK1W1031
SIW-SB-018P-0.0-5.0	Solid	F1G190474-032	MK1W2032
SIW-SB-019P-0.0-5.0	Solid	F1G190474-033	MK2W3033
SIW-SB-019P-5.0-8.0	Solid	F1G190474-034	MK1W4034
SIW-SB-020P-0.0-5.0	Solid	F1G190474-035	MKW14035
SIW-SB-020P-5.0-8.0	Solid	F1G190474-036	MK1W6036

II. Case Narrative

Direct statement(s) from the lab of problems and/or unusual occurrences. Note disagreements and reasons for the disagreement with the Laboratory Statement.

Remarks:

Lead-214 was detected in the Gamma Spec method blank at levels above the MDA for prep batch 1206066. According to the Case Narrative from Test America the variations in Compton backgrounds and statistical analyes allow for small area counts in the regions of interest for this nuclide. Other uranium decay products are not present in the blank to support Lead-214 identification.

III. Re-analysis and Secondary Dilutions

Verify that re-analysis and secondary dilutions were performed and reported as necessary.
Determine appropriate results to report.

Alpha Spec Samples SIW-SB-009P-0.0-5.0 and SIW-SB-015P-0.0-5.0 recovered low for Uranium tracer. Both samples were re-extracted and reanalyzed. The reanalyzed results are reported and were acceptable.

IV. Holding Times

Remarks: (Maximum holding time is set for a particular analysis, if the holding time exceeds twice the max limit, then qualify all analytes with 'R' for rejected data point.)

Acceptable

V. Calibration

Remarks:

Acceptable

Required MDAs:

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0
Th-232	0.5 pCi/g

VI. Blanks

Radiochemical Blanks

If the blank result is less than the associated uncertainty (error), no qualification will be warranted.
If the blank result is greater than its associated uncertainty, but less than the MDA, then no qualification will be warranted.
If the blank result is greater than the associated uncertainty and greater than the MDA, then qualification of sample results may be appropriate.

Laboratory Method Blanks:

Date	Blank ID	Radionuclide	Result	Error	MDA
7/25/2011	F1G250000-066B	Pb-214	0.096	0.59	0.088

- If the blank result falls outside criteria, qualify associated sample results that are less than 10x the blank value as estimated (J), only if the NAD <2.58
- If the absolute sample result is less than the MDA and the uncertainty is less than the result, qualify as non-detect (U).
- If the absolute sample result is less than the MDA and the uncertainty is greater than the result qualify as non-detect value uncertain (UJ).
- If the sample result is greater than the MDA and the uncertainty is 50-100% of the result, qualify the data as estimated (J).
- If the sample result is greater than the MDA and the uncertainty is greater than 100% of the result, qualify the data as rejected.
- If the sample result is negative, and its absolute value exceeds 2x the MDA, qualify the data as rejected.

Deviations:

Radionuclide	Max Activity	Action Level	NAD	Sample ID
Pb-214	0.096	0.96		

Remarks:

Lead-214 was detected in the method blank at levels greater than the MDA indicating potential blank contamination. Further investigation revealed that all sample results with a detection for Pb-214, had Pb-214 either greater than the action level of ten times the blank concentration, or a Normalized Absolute Difference between the blank result and the sample result greater than 2.58. Additionally, according to the Case Narrative from Test America the variations in Compton backgrounds and statistical analyes allow for small area counts in the regions of interest for this nuclide. Other uranium decay products are not present in the blank to support Lead-214 identification. Therefore, no action is required as a result of potential blank contamination.

VII. Surrogate Recoveries and Radiological Tracer Recoveries

Remarks:

Alpha Spec Samples SIW-SB-009P-0.0-5.0 and SIW-SB-015P-0.0-5.0 recovered low for Uranium tracer. Both samples were re-extracted and reanalyzed. The reanalyzed results are reported and were acceptable.

VIII. Internal Standards Performance

Remarks:

N/A

IX. Instrument Performance Checks

Remarks:

N/A

X. Matrix Spike and Matrix Spike Duplicates

Remarks:

N/A

XI. Duplicate Analysis

Radiochemical Duplicate Information

Identify the method utilized to evaluate duplicate analyses; duplicate error ratio (DER), relative percent difference (RPD), or normalized absolute difference (NAD).
Duplicate actions should apply to all samples associated with the duplicate pair.

Deviations:

Duplicate Sample(s)				
Radionuclide	**DER / RER**	**RPD**	**NAD**	**Samples Affected**
Ac-228		46.67	0.97	SIW-SB-006P-5.0-8.0
Ra-228		46.67	0.97	SIW-SB-006P-5.0-8.0
Th-232		46.67	0.97	SIW-SB-006P-5.0-8.0
Th-234		110.2	0.94	SIW-SB-006P-5.0-8.0
U-238		110.2	0.94	SIW-SB-006P-5.0-8.0
U-235/236		37.84	0.26	SIW-SB-006P-5.0-8.0

Remarks:

The Relative Percents Difference (RPD) for the laboratory replicate results for Ac-228, Ra-228, Th-232, Th-234, U-238, and U-235/236 for sample SIW-SB-006P-5.0-8.0 were above the acceptance criteria of 35%. All normalized absolute difference (NAD) were less than the required 1.96, which proves the data to be acceptable.

XII. Laboratory Control Sample

General Laboratory Control Sample Criteria, percent recovery (use Lab provided criteria when available):

VOC	SVOC	Pesticides	PCB	Aqueous	Solid
80-120	60-120	50-130	50-130	80-120	70-130

Deviations:

Compound	Method	Date	Percent Recovery	Recovery Limits	RC	Samples Affected

Remarks:

Acceptable.

Radiological LCS limits
70% - 130%

XIII. Analytical Method Specific Information

Note to file:

Date: 09/15/2011

SDG: F1G190474

Test America logged samples in incorrectly. Refer to the sample cross reference below for the correct sample IDs.

Lab logged-incorrectly	Actual Sample ID
SIW-SB-001P-5.0-10.0	SIW-SB-001P-5.0-8.0

LAB SAMPLE ID	CLIENT SAMPLE DESCRIPTION	COMPOUND NAME	UNITS	RESULT	QUALIFIERS	TOTAL UNCERTAINTY	RPT LIMIT/MDC
F1G190474001	SIW-SB-001P-0.0-5.0	Uranium 235	pCi/g	0.11	U	0.38	0.67
F1G190474001	SIW-SB-001P-0.0-5.0	Uranium 238	pCi/g	1.65	U	0.97	2.7
F1G190474002	SIW-SB-001P-5.0-10.0	Uranium 235	pCi/g	0.11	U	0.29	0.5
F1G190474002	SIW-SB-001P-5.0-10.0	Uranium 238	pCi/g	0.9	U	1.5	2.2
F1G190474003	SIW-SB-002P-0.0-5.0	Uranium 235	pCi/g	0.11	U	0.27	0.46
F1G190474003	SIW-SB-002P-0.0-5.0	Uranium 238	pCi/g	0.88	U	0.7	2
F1G190474004	SIW-SB-003P-0.0-5.0	Uranium 235	pCi/g	0.43	U	0.36	0.44
F1G190474004	SIW-SB-003P-0.0-5.0	Uranium 238	pCi/g	0.45	U	0.65	2.3
F1G190474005	SIW-SB-003P-5.0-8.0	Uranium 235	pCi/g	0.11	U	0.28	0.48
F1G190474005	SIW-SB-003P-5.0-8.0	Uranium 238	pCi/g	0.21	U	0.71	2.3
F1G190474006	SIW-SB-004P-0.0-5.0	Uranium 235	pCi/g	0.16	U	0.23	0.59
F1G190474006	SIW-SB-004P-0.0-5.0	Uranium 238	pCi/g	0.54	U	0.66	2.2
F1G190474007	SIW-SB-004P-5.0-10.0	Uranium 235	pCi/g	-0.08	U	1.3	0.5
F1G190474007	SIW-SB-004P-5.0-10.0	Uranium 238	pCi/g	0.64	U	0.61	2.2
F1G190474008	SIW-SB-005P-0.0-5.0	Uranium 235	pCi/g	0.12	U	0.35	0.66
F1G190474008	SIW-SB-005P-0.0-5.0	Uranium 238	pCi/g	2.08	U	0.81	2.2
F1G190474009	SIW-SB-005P-5.0-8.0	Uranium 235	pCi/g	0.15	U	0.41	0.69
F1G190474009	SIW-SB-005P-5.0-8.0	Uranium 238	pCi/g	1.3	U	1.1	3.2
F1G190474010	SIW-SB-006P-0.0-5.0	Uranium 235	pCi/g	0.06	U	0.29	0.5
F1G190474010	SIW-SB-006P-0.0-5.0	Uranium 238	pCi/g	0.8	U	1.1	1.7
F1G190474011	SIW-SB-006P-5.0-8.0	Uranium 235	pCi/g	0.11	U	0.27	0.47
F1G190474011	SIW-SB-006P-5.0-8.0	Uranium 238	pCi/g	0.55	U	0.61	1.8
F1G190474011X	SIW-SB-006P-5.0-8.0	Uranium 235	pCi/g	0.1	U	0.2	0.46
F1G190474011X	SIW-SB-006P-5.0-8.0	Uranium 238	pCi/g	1.9		1.3	1.7
F1G190474012	SIW-SB-007P-0.0-5.0	Uranium 235	pCi/g	0.17	U	0.33	0.52
F1G190474012	SIW-SB-007P-0.0-5.0	Uranium 238	pCi/g	1.71	U	0.73	2
F1G190474013	SIW-SB-007P-5.0-8.0	Uranium 235	pCi/g	0.2	U	0.32	0.71
F1G190474013	SIW-SB-007P-5.0-8.0	Uranium 238	pCi/g	1.99	U	0.92	2.5
F1G190474014	SIW-SB-008P-0.0-5.0	Uranium 235	pCi/g	0.06	U	0.39	0.68
F1G190474014	SIW-SB-008P-0.0-5.0	Uranium 238	pCi/g	1.12	U	0.89	2.6
F1G190474015	SIW-SB-008P-5.0-8.0	Uranium 235	pCi/g	0.38	U	0.41	0.68
F1G190474015	SIW-SB-008P-5.0-8.0	Uranium 238	pCi/g	1.3	U	1.2	3.6
F1G190474016REA	SIW-SB-009P-0.0-5.0	Uranium 234	pCi/g	40.7		4.3	0.3
F1G190474016REA	SIW-SB-009P-0.0-5.0	Uranium 235/236	pCi/g	1.57		0.59	0.24
F1G190474016REA	SIW-SB-009P-0.0-5.0	Uranium 238	pCi/g	40.9		4.3	0.2
F1G190474016	SIW-SB-009P-0.0-5.0	Uranium 235	pCi/g	4.5		1.6	1.9
F1G190474016	SIW-SB-009P-0.0-5.0	Uranium 238	pCi/g	50.7		7.5	7.8
F1G190474017	SIW-SB-009P-5.0-8.0	Uranium 235	pCi/g	0.7		0.5	0.63
F1G190474017	SIW-SB-009P-5.0-8.0	Uranium 238	pCi/g	2.9		1.1	2.8
F1G190474018	SIW-SB-010P-0.0-5.0	Uranium 235	pCi/g	0.11	U	0.42	0.76
F1G190474018	SIW-SB-010P-0.0-5.0	Uranium 238	pCi/g	1.33	U	0.98	2.9
F1G190474019	SIW-SB-010P-5.0-8.0	Uranium 235	pCi/g	0.05	U	0.13	0.54
F1G190474019	SIW-SB-010P-5.0-8.0	Uranium 238	pCi/g	1.4	U	1.5	2.6
F1G190474020	SIW-SB-011P-0.0-5.0	Uranium 235	pCi/g	0.21	U	0.47	0.73
F1G190474020	SIW-SB-011P-0.0-5.0	Uranium 238	pCi/g	2.8		1.3	2.8
F1G190474021	SIW-SB-011P-5.0-8.0	Uranium 235	pCi/g	0.27	U	0.47	0.69

F1G190474021	SIW-SB-011P-5.0-8.0	Uranium 238	pCi/g	0.6	U	1	3.3
F1G190474022	SIW-SB-012P-0.0-5.0	Uranium 235	pCi/g	0.24	U	0.33	0.62
F1G190474022	SIW-SB-012P-0.0-5.0	Uranium 238	pCi/g	0.96	U	0.61	2.1
F1G190474023	SIW-SB-012P-5.0-8.0	Uranium 235	pCi/g	0.016	U	0.081	0.52
F1G190474023	SIW-SB-012P-5.0-8.0	Uranium 238	pCi/g	0.51	U	0.82	2.7
F1G190474024	SIW-SB-013P-0.0-5.0	Uranium 235	pCi/g	4.6		2.3	2.8
F1G190474024	SIW-SB-013P-0.0-5.0	Uranium 238	pCi/g	26.7		4.6	11
F1G190474025	SIW-SB-013P-5.0-8.0	Uranium 235	pCi/g	0.35	U	0.67	0.94
F1G190474025	SIW-SB-013P-5.0-8.0	Uranium 238	pCi/g	4.2		1.3	3.2
F1G190474026	SIW-SB-014P-0.0-5.0	Uranium 238	pCi/g	0.121	U	0.076	0.27
F1G190474027	SIW-SB-014P-5.0-8.0	Uranium 235	pCi/g	0.21	U	0.39	0.67
F1G190474027	SIW-SB-014P-5.0-8.0	Uranium 238	pCi/g	2.7		1.8	2.5
F1G190474028REA	SIW-SB-015P-0.0-5.0	Uranium 234	pCi/g	65.4		6.4	0.2
F1G190474028REA	SIW-SB-015P-0.0-5.0	Uranium 235/236	pCi/g	3.02		0.84	0.14
F1G190474028REA	SIW-SB-015P-0.0-5.0	Uranium 238	pCi/g	63		6.2	0.3
F1G190474028	SIW-SB-015P-0.0-5.0	Uranium 235	pCi/g	4.2		1.3	1.9
F1G190474028	SIW-SB-015P-0.0-5.0	Uranium 238	pCi/g	50.7		8.1	8.6
F1G190474029	SIW-SB-016P-0.0-5.0	Uranium 235	pCi/g	0.69	U	0.58	1
F1G190474029	SIW-SB-016P-0.0-5.0	Uranium 238	pCi/g	6.1		1.4	3.8
F1G190474030	SIW-SB-016P-5.0-8.0	Uranium 235	pCi/g	0.08	U	0.13	0.67
F1G190474030	SIW-SB-016P-5.0-8.0	Uranium 238	pCi/g	2.8		1.7	2.3
F1G190474031	SIW-SB-017P-0.0-5.0	Uranium 235	pCi/g	0.31	U	0.51	0.85
F1G190474031	SIW-SB-017P-0.0-5.0	Uranium 238	pCi/g	1.9	U	1	3
F1G190474031X	SIW-SB-017P-0.0-5.0	Uranium 235	pCi/g	0.16	U	0.31	0.82
F1G190474031X	SIW-SB-017P-0.0-5.0	Uranium 238	pCi/g	3.1	U	2.6	3.3
F1G190474032	SIW-SB-018P-0.0-5.0	Uranium 235	pCi/g	2.9		1.4	1.6
F1G190474032	SIW-SB-018P-0.0-5.0	Uranium 238	pCi/g	37		6.5	6.7
F1G190474033	SIW-SB-019P-0.0-5.0	Uranium 235	pCi/g	0.12	U	0.11	0.33
F1G190474033	SIW-SB-019P-0.0-5.0	Uranium 238	pCi/g	0.45	U	0.42	1.3
F1G190474034	SIW-SB-019P-5.0-8.0	Uranium 235	pCi/g	0.11	U	0.24	0.34
F1G190474034	SIW-SB-019P-5.0-8.0	Uranium 238	pCi/g	0.6	U	1.2	1.7
F1G190474035	SIW-SB-020P-0.0-5.0	Uranium 235	pCi/g	0.03	U	0.35	0.61
F1G190474035	SIW-SB-020P-0.0-5.0	Uranium 238	pCi/g	2.7		1.9	2.6
F1G190474036	SIW-SB-020P-5.0-8.0	Uranium 235	pCi/g	0.28	U	0.3	0.54
F1G190474036	SIW-SB-020P-5.0-8.0	Uranium 238	pCi/g	0.58	U	0.75	2.4
F1G250000066B	LABQC	Uranium 235	pCi/g	0.03	U	0.15	0.22
F1G250000066B	LABQC	Uranium 238	pCi/g	0.15	U	0.18	0.86
F1G250000067B	LABQC	Uranium 235	pCi/g	0.03	U	0.16	0.31
F1G250000067B	LABQC	Uranium 238	pCi/g	0.3	U	0.32	1.4
F1G250000068B	LABQC	Uranium 235	pCi/g	-0.05	U	32	0.3
F1G250000068B	LABQC	Uranium 238	pCi/g	0.73	U	0.79	1.3
F1G190474009	SIW-SB-005P-5.0-8.0	Thorium 232	pCi/g	1.78		0.36	0.55
F1G190474016	SIW-SB-009P-0.0-5.0	Thorium 232	pCi/g	2.82		0.72	1.1
F1G190474024	SIW-SB-013P-0.0-5.0	Thorium 232	pCi/g	1.2	U	0.88	1.6
F1G190474028	SIW-SB-015P-0.0-5.0	Thorium 232	pCi/g	1.55		0.63	1.1
F1G190474032	SIW-SB-018P-0.0-5.0	Thorium 232	pCi/g	2.6		0.66	0.57
F1G250000067C	LABQC	Thorium 232	pCi/g	10.1		1.1	0.6

F1G250000068C	LABQC	Thorium 232	pCi/g	10.4		0.99	0.61

The laboratory reporting limits for the samples listed above differ from the laboratory reporting limits documented in the QAPP. The requested reporting limits are listed in the table below.

Isotope	**QAPP RL**
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0 pCi/g
Th-232	0.5 pCi/g

F1G250000066C																			
F1G250000067B													-0.04	0.2	0.36	U	0.11	0.13	0.21	U
F1G250000067C																				
F1G250000068B													0.006	0.07	0.55	U	0.15	0.13	0.2	U
F1G250000068C																				
F1H100000106B	0.013	0.014	0.016	U	-0.0011	0.0022	0.02	U	0	0.0035	0.0094	U								
F1H100000106C	1.6	0.2	0.02						1.77	0.22	0.02									
F1H110000136B	0.014	0.017	0.025	U	-0.0011	0.0023	0.021	U	0.009	0.013	0.019	U								
F1H110000136C	1.82	0.23	0.01						1.9	0.23	0.01									
F1H250000147B	0.005	0.01	0.018	U	0	0.0043	0.012	U	-0.0009	0.0017	0.016	U								
F1H250000147C	1.6	0.2	0.03						1.69	0.21	0.02									

The laboratory reporting limits reported for U-234, U-235, U-238,Ra-226 and Th-232 can results differ from the laboratory reporting limits documented in the QAPP. The result for the Uranium analyses by Alpha Spec should be utilized when the result for Uranium analyzed by Gamma Spec is a non-detected value.

0.13	0.27	0.5	U	0.048	0.079	0.15	U					0.4	1.2	2.1	U	0.093	0.072	0.11	U	0.075	0.074
0.03	0.32	0.6	U	0.13	0.097	0.17	U					0.54	0.92	1.7	U	0.044	0.059	0.11	U	0.128	0.098

														11.4	0.94	0.34					
0.14	U	-0.1	4.3	0.5	U	0.13	0.38	1.5	U					0.048	0.079	0.15	U	0.11	0.13	0.21	U
														10.9	0.93	0.39					
0.14	U	-0.04	0.38	0.9	U	0.09	0.15	1.6	U					0.13	0.097	0.17	U	0.15	0.13	0.2	U
														11.7	0.98	0.38					

								11.4	1	0.46											
0.025	0.052	0.085	U					0.11	0.13	0.21	U	0.3	0.32	1.4	U	0.03	0.16	0.31	U	0.3	0.32
								10.1	1.1	0.6											
0.037	0.049	0.073	U					0.15	0.13	0.2	U	0.73	0.79	1.3	U	-0.05	32	0.3	U	0.73	0.79
								10.4	0.99	0.61											

1.4	U
1.3	U

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Comprehensive Data Validation

Project: Staten Island
SDG Number: F1G190479
Laboratory: Test America
Analysis: Alpha Spec; Gamma Spec
Matrix: Soil

The above data package has been reviewed and the analytical quality control/quality assurance performance data have been summarized. The general criteria used to assess the analytical integrity of the data were based on an examination of the following:

Case Narrative
Analytical Holding Times
Sample Preservation
Method Calibration
Method and Project Blanks
Method Calibration Verification
Analytical Surrogate Recoveries
MS/MSD Recoveries and Differences
LCS/LCSD Recoveries and Differences
Re-analysis and Secondary Dilution
Internal Standards Performance
Tuning Standard
Endrin/DDT Breakdown

Definition of EPA Qualifiers:

"U" - Not detected at the associated level
"UJ" - Not detected and associated value estimated
"J" - Associated value estimated
"R" - Associated value unusable or analyte identity unfounded
"=" - Compound properly identified and value positive (Optional for FUSRAP only)

Overall Remarks:

Three MS/MSD pairs were taken in the field, but not checked in at the lab. Please see the attached email for additional information.

Please see the attached worksheet for further information relating to the RL.

Reviewed by: (print) Jessica Mattison Date: 9/12/2011
(Sign) _____

Peer Reviewed by: (print) J Wilkins Date: 9/15/2011
(Sign) _____

I. Sample Name cross-reference

Enter the names of the project sample(s) and Lab Sample name(s) associated with the sample(s):

Project sample name	Phase	Lab sample name	additional lab sample names (if any)
SIW-SB-021P-0.0-5.0	Solid	F1G190479-001	MK1XF001
SIW-SB-021P-5.0-8.0	Solid	F1G190479-002	MK17H002
SIW-SB-022P-0.0-5.0	Solid	F1G190479-003	MK17J003
SIW-SB-022P-5.0-8.0	Solid	F1G190479-004	MK17K004
SIW-SB-023P-0.0-5.0	Solid	F1G190479-005	MK17M005
SIW-SB-023P-5.0-8.0	Solid	F1G190479-006	MK17N006
SIW-SB-024P-0.0-5.0	Solid	F1G190479-007	MK17P007
SIW-SB-025P0.0-5.0	Solid	F1G190479-008	MK17Q008
SIW-SB-026P-0.0-5.0	Solid	F1G190479-009	MK17R009
SIW-SB-DUP-001	Solid	F1G190479-010	MK17V010
SIW-SB-DUP-002	Solid	F1G190479-011	MK17W011
SIW-SB-DUP-003	Solid	F1G190479-012	MK170012
SIW-SB-DUP-004	Solid	F1G190479-013	MK171013
SIW-SB-DUP-005	Solid	F1G190479-014	MK172014

II. Case Narrative

Direct statement(s) from the lab of problems and/or unusual occurrences. Note disagreements and reasons for the disagreement with the Laboratory Statement.

Remarks:

There were no issues reported.

III. Re-analysis and Secondary Dilutions

Verify that re-analysis and secondary dilutions were performed and reported as necessary.
Determine appropriate results to report.

There were no reanalyses or secondary dilutions required. Acceptable.

IV. Holding Times

Remarks: (Maximum holding time is set for a particular analysis, if the holding time exceeds twice the max limit, then qualify all analytes with 'R' for rejected data point.)

Acceptable.

V. Calibration

Remarks:

Acceptable.

Required MDAs

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0
Th-232	0.5 pCi/g

VI. Blanks

Remarks:

Acceptable.

VII. Surrogate Recoveries and Radiological Tracer Recoveries

Remarks:

Acceptable.

VIII. Internal Standards Performance

Remarks:

NA

IX. Instrument Performance Checks

Remarks:

NA

X. Matrix Spike and Matrix Spike Duplicates

Remarks:

Three MS/MSD pairs were taken in the field, but not checked in at the lab.

XI. Duplicate Analysis

Remarks:

Accpetable.

XII. Laboratory Control Sample

General Laboratory Control Sample Criteria, percent recovery (use Lab provided criteria when available):

VOC	SVOC	Pesticides	PCB	Aqueous	Solid
80-120	60-120	50-130	50-130	80-120	70-130

Deviations:

Compound	Method	Date	Percent Recovery	Recovery Limits	RC	Samples Affected

Remarks:

Acceptable.

Radiological LCS limits
70% - 130%

XIII. Analytical Method Specific Information

LAB SAMPLE ID	CLIENT SAMPLE DESCRIPTION	ANALYSIS METHOD	COMPOUND NAME	UNITS	RESULT	QUALIFIERS	TOTAL UNCERTAINTY	RPT LIMIT/MDC
F1G190479001	SIW-SB-021P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	1.03	U	0.92	2.7
F1G190479002	SIW-SB-021P-5.0-8.0	GA-01-R MOD	Uranium 238	pCi/g	1.49	U	0.75	1.8
F1G190479003	SIW-SB-022P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	2.3	U	2.1	2.8
F1G190479004	SIW-SB-022P-5.0-8.0	GA-01-R MOD	Uranium 238	pCi/g	0.73	U	0.77	3
F1G190479005	SIW-SB-023P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	1.8	U	1.1	3.7
F1G190479006	SIW-SB-023P-5.0-8.0	GA-01-R MOD	Uranium 238	pCi/g	0.93	U	0.61	1.8
F1G190479007	SIW-SB-024P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	2.9		2	2.7
F1G190479008	SIW-SB-025P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	1.17	U	0.72	2.9
F1G190479009	SIW-SB-026P-0.0-5.0	GA-01-R MOD	Uranium 238	pCi/g	1.96	U	0.997	2.9
F1G190479010	SIW-SB-DUP-001	GA-01-R MOD	Uranium 238	pCi/g	0.41	U	0.68	2.3
F1G190479011	SIW-SB-DUP-002	GA-01-R MOD	Uranium 238	pCi/g	3.7		1.4	3.2
F1G190479012	SIW-SB-DUP-003	GA-01-R MOD	Uranium 235	pCi/g	1.32		0.76	1.3
F1G190479012	SIW-SB-DUP-003	GA-01-R MOD	Uranium 238	pCi/g	23.2		5.7	6.4
F1G190479013	SIW-SB-DUP-004	GA-01-R MOD	Uranium 238	pCi/g	3		2.2	2.8
F1G190479014	SIW-SB-DUP-005	GA-01-R MOD	Uranium 238	pCi/g	2.4	U	1.7	2.6
F1G250000068B	LABQC	GA-01-R MOD	Uranium 238	pCi/g	0.73	U	0.79	1.3
F1G190479012	SIW-SB-DUP-003	GA-01-R MOD	Thorium 232	pCi/g	2.91		0.64	0.54
F1G250000068C	LABQC	GA-01-R MOD	Thorium 232	pCi/g	10.4		0.99	0.61

The laboratory reporting limits for the samples listed above differ from the laboratory reporting limits documented in the QAPP. The requested reporting limits are listed in the table below.

Isotope	QAPP RL
U-234	0.1 pCi/g
U-235	0.1 pCi/g
U-238	0.1 pCi/g
Ra-226	1.0 pCi/g
Th-232	0.5 pCi/g

			A-01-R MOD											
			Uranium 234				Uranium 235/236				Uranium 238			
Lab Sample ID	Sample ID	Sample Type	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier
F1G190479001	SIW-SB-021P-0.0-5.0	REG	1.15	0.02	0.17		0.069	0.014	0.039		1.15	0.01	0.17	
F1G190479002	SIW-SB-021P-5.0-8.0	REG	0.92	0.02	0.14		0.031	0.021	0.025		0.96	0.02	0.14	
F1G190479003	SIW-SB-022P-0.0-5.0	REG	0.78	0.03	0.16		0.034	0.041	0.036	U	0.92	0.02	0.18	
F1G190479004	SIW-SB-022P-5.0-8.0	REG	0.67	0.03	0.14		0.012	0.032	0.02	U	0.73	0.03	0.14	
F1G190479005	SIW-SB-023P-0.0-5.0	REG	2.54	0.02	0.3		0.134	0.015	0.056		2.62	0.02	0.31	
1G190479006	SIW-SB-023P-5.0-8.0	REG	1.28	0.02	0.18		0.048	0.022	0.031		1.19	0.02	0.17	
F1G190479007	SIW-SB-024P-0.0-5.0	REG	1.61	0.01	0.21		0.069	0.012	0.036		1.69	0.01	0.21	
F1G190479008	SIW-SB-025P-0.0-5.0	REG	1.08	0.01	0.16		0.038	0.013	0.027		1.03	0.01	0.15	
F1G190479009	SIW-SB-026P-0.0-5.0	REG	1.9	0.02	0.24		0.077	0.015	0.042		1.77	0.02	0.23	
F1G190479010	SIW-SB-DUP-001	REG	0.78	0.01	0.13		0.046	0.022	0.03		0.79	0.01	0.13	
F1G190479011	SIW-SB-DUP-002	REG	1.38	0.02	0.19		0.074	0.014	0.04		1.26	0.01	0.18	
F1G190479012	SIW-SB-DUP-003	REG	24.6	0.06	2.2		1.07	0.06	0.23		24	0.07	2.2	
F1G190479013	SIW-SB-DUP-004	REG	1.85	0.02	0.24		0.062	0.024	0.037		1.89	0.02	0.24	
F1G190479014	SIW-SB-DUP-005	REG	1.75	0.03	0.22		0.076	0.014	0.04		1.84	0.02	0.23	
F1G25000068B	(blank)	BLK (Gamma Spec)												
F1G25000068C	(blank)	LCS (Gamma Spec)												
F1H11000174B	(blank)	BLK (Iso-U)	0.003	0.025	0.011	U	0.008	0.021	0.013	U	-0.0018	0.019	0.0026	U
F1H11000174C	(blank)	LCS (Iso-U)	1.54	0.01	0.2						1.74	0.01	0.22	

	GA-01-R															
	Actinium 227				Actinium 228				Bismuth 212				Bismuth 214			
Lab Sample ID	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier
F1G190479001	0.18	2	0.27	U	1.47	0.19	0.27		0.54	0.86	0.54	U	1.5	0.2	0.28	
F1G190479002	0.12	0.35	0.2	U	0.61	0.41	0.25		0.59	0.66	0.45	U	0.71	0.16	0.18	
F1G190479003	0.16	2.6	0.36	U	1.63	0.14	0.34		0.53	0.95	0.57	U	1.15	0.21	0.25	
F1G190479004	0.06	2	1.2	U	1.5	0.29	0.35		1.97	0.26	0.54		1.25	0.2	0.26	
F1G190479005	0.11	0.67	0.36	U	2.67	0.29	0.41		1.49	0.87	0.66		2.48	0.23	0.36	
1G190479006	0.13	1.2	0.21	U	0.59	0.33	0.22		0.49	0.71	0.46	U	0.78	0.11	0.18	
F1G190479007	0.71	0.34	0.28		1.9	0.13	0.32		0.97	0.59	0.53		1.63	0.2	0.28	
F1G190479008	0.11	1.9	0.38	U	1.51	0.14	0.32		0.31	0.8	0.48	U	1.09	0.18	0.23	
F1G190479009	0.18	0.75	0.35	U	2.36	0.44	0.5		1.7	0.74	0.74		1.87	0.29	0.37	
F1G190479010	0.41	0.18	0.18		0.54	0.4	0.29		0.2	0.91	0.51	U	1.06	0.18	0.25	
F1G190479011	0.15	2.6	0.24	U	1.68	0.45	0.41		2.09	0.44	0.66		1.7	0.21	0.29	
F1G190479012	1.33	1	0.73		2.91	0.54	0.64		2.2	1.2	1.1		20.5	0.4	1.5	
F1G190479013	0.19	2.4	0.37	U	1.68	0.26	0.37		1.32	0.66	0.66		1.63	0.2	0.28	
F1G190479014	-0.06	2.6	1.5	U	1.27	0.23	0.39		0.72	1.2	0.76	U	1.72	0.22	0.35	
F1G25000068B	0.006	0.55	0.07	U	0.15	0.2	0.13	U	0.03	0.6	0.32	U	0.13	0.17	0.097	U
F1G25000068C																
F1H11000174B																
F1H11000174C																

	Lead 210				Lead 212				Lead 214				Potassium 40			
Lab Sample ID	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier
F1G190479001	2.1	2.8	1.8	U	1.44	0.17	0.2		1.43	0.21	0.23		14.9	1.1	2.2	
F1G190479002	-0.2	3	2.2	U	1.04	0.17	0.19		0.71	0.21	0.19		9.8	1.3	1.8	
F1G190479003	0.4	3.5	2.1	U	1.78	0.2	0.24		1.28	0.25	0.27		16.4	0.7	2.4	
F1G190479004	1.2	3	1.9	U	1.54	0.13	0.2		1.24	0.2	0.22		19.6	1.1	2.5	
F1G190479005	3.6	3.3	2.5		2.75	0.23	0.3		2.9	0.26	0.38		12.1	1.3	2.2	
1G190479006	0.04	2	1	U	0.55	0.14	0.15		0.5	0.18	0.14		9	0.9	1.9	
F1G190479007	4.1	3	2.1		1.86	0.21	0.24		1.87	0.24	0.27		11.4	1.3	2	
F1G190479008	0.5	4.1	2.3	U	1.19	0.18	0.2		1.13	0.21	0.23		10.6	1.5	2	
F1G190479009	1.6	4	2.3	U	2.22	0.2	0.27		2.12	0.24	0.29		14.5	1.2	2.3	
F1G190479010	1.4	2.2	1.5	U	1.03	0.14	0.18		1.23	0.14	0.22		7.7	0.9	1.7	
F1G190479011	3.7	3.4	2.5		2.14	0.19	0.26		1.8	0.31	0.36		17.4	1.3	2.5	
F1G190479012	18.9	6.7	5.7		2.07	0.33	0.3		21.2	0.5	1.5		15.5	1.2	2.2	
F1G190479013	1.8	3.1	2.3	U	1.87	0.2	0.24		1.88	0.21	0.26		12.2	1	2	
F1G190479014	1.2	3.6	2	U	1.72	0.21	0.29		1.91	0.27	0.37		11.5	1.8	2.6	
F1G25000068B	0.54	1.7	0.92	U	0.044	0.11	0.059	U	0.128	0.14	0.098	U	-0.04	0.9	0.38	U
F1G25000068C																
F1H11000174B																
F1H11000174C																

	Protactinium 231				Radium (226)				Radium 228				Thallium 208			
Lab Sample ID	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier
F1G190479001	0.89	2.8	0.98	U	1.5	0.2	0.28		1.47	0.19	0.27		0.54	0.09	0.12	
F1G190479002	0.72	2.6	0.62	U	0.71	0.16	0.18		0.61	0.41	0.25		0.184	0.12	0.085	
F1G190479003	0.2	3.4	0.42	U	1.15	0.21	0.25		1.63	0.14	0.34		0.49	0.1	0.12	
F1G190479004	0.44	2.2	0.57	U	1.25	0.2	0.26		1.5	0.29	0.35		0.51	0.08	0.11	
F1G190479005	1.9	3.7	1.1	U	2.48	0.23	0.36		2.67	0.29	0.41		0.89	0.12	0.16	
1G190479006	0.39	2.2	0.65	U	0.78	0.11	0.18		0.59	0.33	0.22		0.284	0.084	0.097	
F1G190479007	1.25	3.1	0.78	U	1.63	0.2	0.28		1.9	0.13	0.32		0.72	0.13	0.16	
F1G190479008	0.5	2.8	1.1	U	1.09	0.18	0.23		1.51	0.14	0.32		0.45	0.12	0.13	
F1G190479009	2.1	3.4	1.4	U	1.87	0.29	0.37		2.36	0.44	0.5		0.8	0.08	0.14	
F1G190479010	0.76	2.8	0.56	U	1.06	0.18	0.25		0.54	0.4	0.29		0.39	0.08	0.11	
F1G190479011	1.38	3.9	0.96	U	1.7	0.21	0.29		1.68	0.45	0.41		0.78	0.12	0.16	
F1G190479012	1.9	6.5	1.2	U	20.5	0.4	1.5		2.91	0.54	0.64		0.78	0.17	0.17	
F1G190479013	0.69	3.6	0.62	U	1.63	0.2	0.28		1.68	0.26	0.37		0.63	0.12	0.15	
F1G190479014	0.59	4	0.58	U	1.72	0.22	0.35		1.27	0.23	0.39		0.68	0.14	0.18	
F1G25000068B	0.09	1.6	0.15	U	0.13	0.17	0.097	U	0.15	0.2	0.13	U	0.037	0.073	0.049	U
F1G25000068C					11.7	0.38	0.98									
F1H11000174B																
F1H11000174C																

	Thorium 232				Thorium 234				Uranium 235				Uranium 238			
Lab Sample ID	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier	Result	MDL	Error	Lab Qualifier
F1G190479001	1.47	0.19	0.27		1.03	2.7	0.92	U	0.26	0.61	0.36	U	1.03	2.7	0.92	U
F1G190479002	0.61	0.41	0.25		1.49	1.8	0.75	U	0.21	0.49	0.2	U	1.49	1.8	0.75	U
F1G190479003	1.63	0.14	0.34		2.3	2.8	2.1	U	0.26	0.72	0.45	U	2.3	2.8	2.1	U
F1G190479004	1.5	0.29	0.35		0.73	3	0.77	U	0.28	0.72	0.38	U	0.73	3	0.77	U
F1G190479005	2.67	0.29	0.41		1.8	3.7	1.1	U	0.25	0.81	0.46	U	1.8	3.7	1.1	U
1G190479006	0.59	0.33	0.22		0.93	1.8	0.61	U	-0.04	0.4	9.3	U	0.93	1.8	0.61	U
F1G190479007	1.9	0.13	0.32		2.9	2.7	2		0.18	0.73	0.35	U	2.9	2.7	2	
F1G190479008	1.51	0.14	0.32		1.17	2.9	0.72	U	0.18	0.63	0.18	U	1.17	2.9	0.72	U
F1G190479009	2.36	0.44	0.5		1.96	2.9	0.997	U	0.1	0.95	0.29	U	1.96	2.9	0.997	U
F1G190479010	0.54	0.4	0.29		0.41	2.3	0.68	U	0.15	0.51	0.3	U	0.41	2.3	0.68	U
F1G190479011	1.68	0.45	0.41		3.7	3.2	1.4		-0.03	0.8	1.3	U	3.7	3.2	1.4	
F1G190479012	2.91	0.54	0.64		23.2	6.4	5.7		1.32	1.3	0.76		23.2	6.4	5.7	
F1G190479013	1.68	0.26	0.37		3	2.8	2.2		0.29	0.71	0.45	U	3	2.8	2.2	
F1G190479014	1.27	0.23	0.39		2.4	2.6	1.7	U	0.16	0.75	0.32	U	2.4	2.6	1.7	U
F1G25000068B	0.15	0.2	0.13	U	0.73	1.3	0.79	U	-0.05	0.3	32	U	0.73	1.3	0.79	U
F1G25000068C	10.4	0.61	0.99													
F1H11000174B																
F1H11000174C																

The laboratory reporting limits reported for U-234, U-235, U-238,Ra-226 and Th-232 can results differ from the laboratory reporting limits documented in the QAPP.
The result for the Uranium analyses by Alpha Spec should be utilized when the result for Uranium analyzed by Gamma Spec is a non-detected value.

QUALITY CONTROL SUMMARY REPORT FOR CHARACTERIZATION SAMPLES

1. SAMPLING AND ANALYSIS QUALITY CONTROL

Analytical test methods and sample volume, preservation, holding time, and Quality Control (QC) requirements were met, as presented in the Quality Assurance Project Plan (QAPP). Standard methodology was used for sample collection, identification, documentation, handling, packaging, shipping, and chain-of-custody. Assessment of the data for quality and usability is presented in the Tables located at the end of this document.

To confirm the quality of sampling and analysis techniques used for this investigation, precision and accuracy of data were evaluated and described below.

1.1 PRECISION AND REPRESENTATIVENESS

Precision is defined as the degree to which two or more measurement are in agreement. Field precision is measured by comparing field duplicate results, and analytical precision is measured by comparing laboratory duplicate results.

1.1.1 Field Precision

Precision and representativeness for characterization results were evaluated by calculating the relative percent difference (RPD). RPD is calculated as follows:

$$RPD = \left[\frac{|S-D|}{\frac{S+D}{2}} \right] \times 100$$

Where:

S = Parent Sample Result
D = Duplicate Sample Result

The RPD is calculated for all samples if a detectable result is reported for both the parent and field duplicate. The RPD is not calculated when the analyte in one or both of the samples is not detected. In cases where the RPD equation cannot be used, the comparison is counted as acceptable in the overall number of comparisons.

The calculated RPD results were compared to a performance criteria of less than or equal to 50% for field duplicates for organic analysis and 35% for metals analysis. Calculated RPD values less than 50% for organic analysis and 35% for metals analysis were considered acceptable. The parent and field duplicate samples were compared for 147 analytes, with 4 analytes exceeding the RPD acceptance criteria. This represents 2.72 exceedance rate. This falls within the acceptable exceedance rate of less than 5%. The RPD values demonstrating acceptable field duplicate precision are presented in Tables C-17 through C-22.

1.1.2 Laboratory Precision

Laboratory precision was evaluated through calculating the RPD between results for laboratory control sample (LCS) and laboratory control sample duplicate (LCD), or matrix spike (MS), and matrix spike duplicate (MSD) analyses. MS/MSDs were analyzed at a rate of one MS/MSD pair per analytical method batch, or where there was not enough sample available, and the LCS/LCD pair was analyzed. The MS/MSD RPD and LCS/LCD RPD are presented in Tables C-23 through C-28. MS/MSD or LCS/LCD RPD results that fell outside of the applicable control limits were addressed during the evaluation process, and samples were qualified as estimated, where appropriate. Based on the evaluation of this laboratory duplicate data, laboratory precision was deemed adequate in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2 ACCURACY

Accuracy is defined as the degree to which the reported measurement represents the true value. Analytical accuracy is assessed through the evaluation of laboratory blanks, LCSs, surrogate recoveries, and MS recoveries. Based on the evaluation of these samples, the overall analytical accuracy was deemed adequate in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.1 Laboratory Method Blanks

Laboratory blanks are analyzed to evaluate the potential contamination of samples due to preparation and analytical procedures. Laboratory method blanks are digested/extracted/analyzed exactly like the field samples and are designed to represent the matrix of interest as closely as possible. Laboratory method blanks were prepared and analyzed with each digestion/extraction/analysis batch. In addition, initial and continuing calibration blanks were analyzed. Laboratory blanks results were less than the laboratory minimum detection compounds (MDCs) or reporting limits in all analyses associated with the data generated. Tables C-29 through C-34 demonstrate acceptable blank results for all sample analyses.

1.2.2 Laboratory Control Samples

The LCS is a laboratory spike sample that originates from a source other than the source of the calibration standards and serves as a zero-blind check on the laboratory's accuracy. The LCSs were prepared and analyzed with each digestion, extraction, and analysis batch. LCS results are presented in Tables C-359 throughC-40. LCS samples that fell outside of the applicable control limits were addressed during the evaluation process, and samples were qualified as estimated in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.3 Surrogate Recoveries

Surrogates are compounds that are not commonly found in the natural environment that have similar chemical structure and similar chemical behavior as the compounds of interest. The surrogates are added to the samples prior to extraction to assess extraction efficiency and analytical bias on a sample-by-sample basis. Surrogate recoveries are presented in Tables C-41 through C-45. Surrogate recoveries that fell outside of the applicable control limits were addressed during the evaluation process, and samples were qualified as estimated, where appropriate, in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.2.4 Matrix Spike and Matrix Spike Duplicates

MS/MSD analyses are performed by the laboratory to estimate the extent of bias in the analytical measurements of chemical constituents. The analytical laboratory performed MS/MSD analyses by adding a known quality of each analyte to representative media, and analyzing the spiked media. Bias in the result was quantified by determining the percent recovery of the spike amount. MS percent recoveries are presented in Tables C-46 through C-50. MS recoveries that fell outside of the applicable control limits were addressed during the evaluation process, and samples were qualified as estimated where appropriate in accordance with the QAPP or the Kansas City District Data Quality Evaluation Guidance.

1.3 REPRESENTATIVENESS

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program. The representativeness criteria are best satisfied by making certain that sampling locations are properly selected and a sufficient number of samples are collected. Representativeness is addressed by describing sampling techniques and rationale used to select sampling locations. Representativeness is also evaluated through the review of the field precision, as described in Section 1.1.1.

1.4 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The comparability of the data, a relative measure, is influenced by sampling and analytical procedures. By providing specific protocols to be used for obtaining and analyzing samples, data sets should be comparable, regardless of who obtains the sample or performs the analysis. The analytical laboratory was responsible for enhancing comparability using the following controls:

- Use of current, standard U.S. Environmental Protection Agency (USEPA) approved methodology for sample preservation, holding, and analysis
- Consistent reporting units for each parameter in similar matrices
- USEPA-NIST traceable standards, when available
- Analysis of USEPA QC samples, when available
- Participation in inter-laboratory performance evaluation studies

By following these controls, the data obtained during this SI has met the objectives outlined in the QAPP.

1.5 COMPLETENESS

Completeness is a measure of the degree to which the amount of sample data collected meets the scope and a measure of the relative number of analytical data points that meet the acceptance criteria, including accuracy, precision, and any other criteria required by the specific analytical method used. Completeness is defined as a comparison of the actual numbers of valid data points and expected numbers of points expressed as a percentage. The Quality Assurance objectives for completeness will be based upon a project goal of 90%. If data cannot be reported without qualifications, project completion goals may still be met if the qualified data (i.e., data of known quality even if not perfect) are suitable for the specified project goals. The completeness for this project was 100%, which exceeded the goal of 90%, as specified in the QAPP.

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2. DATA MANAGEMENT AND DOCUMENTATION

Management of the field and analytical data generated during the characterization effort was conducted in accordance with the general requirements of the Project Work Plan (USACE 2011a).

2.1 FIELD DATA

Field and QC data was recorded in logbooks and/or field sheets, scanned, and included in Appendix A.

During the field investigation, a Daily Quality Control Report (DQCR) was prepared daily. Each original paper copy was dated and signed by the Field Operations Manager. Copies of the DQCRs are included in Appendix A. DQCRs served to document the daily activities occurring on the project, including the weather for each day and any additional environmental conditions or observations pertinent to field activities. Also recorded on the DQCR were the names and roles of team members' present on-site, as well as visitors to the immediate investigation area. Any changes or delays in the project were discussed and recorded, as well as any safety issues that arose.

2.2 ANALYTICAL DATA

Samples collected during the characterization effort were identified by a unique number code that accompanied the sample from collection through analysis and data review. Standardized chain-of-custody procedures were followed from sample collection through sample analysis. The condition of shipping coolers and enclosed sample containers were documented upon receipt at the analytical laboratory. The laboratory transmitted the completed chain-of-custody form and cooler receipt checklist to the Project Manager (PM) to confirm each sample shipment.

Analytical data reports containing results of the requested analyses were transmitted to the PM. Each data package contained an electronic data deliverable (EDD) spreadsheet summarizing the analytical results, as well as an electronic file containing the entire case narrative and supporting data. The electronic files were uploaded to the corporate server and backed up on a CD. Laboratory data reports are included in Appendix E.

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TABLES

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Table C-17. Field Duplicate Precision for 8082

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1016	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1221	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1232	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1242	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1248	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1254	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aroclor 1260	**60.38**

Table C-18. Field Duplicate Precision for 6020A

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Arsenic	15.65
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Barium	40.16
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Cadmium	16.39
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chromium	14.06
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Lead	19.03
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Selenium	8.09
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Silver	9.01
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Mercury	3.51

Table C-19. Field Duplicate Precision for 8081A

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4,4'-DDD	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4,4'-DDE	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4,4'-DDT	29.09
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aldrin	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	alpha-BHC	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	alpha-Chlordane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	beta-BHC	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chlordane (technical)	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	delta-BHC	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Dieldrin	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endosulfan I	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endosulfan II	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endosulfan sulfate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endrin	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endrin aldehyde	35.29
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Endrin ketone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	gamma-BHC (Lindane)	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	gamma-Chlordane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Heptachlor	13.95
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Heptachlor epoxide	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Methoxychlor	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Toxaphene	*

Table C-20. Field Duplicate Precision for 8081A

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4,5-T	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4,5-TP (Silvex)	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-D	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-DB	*

Table C-21. Field Duplicate Precision for 8260B

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,1,1-Trichloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,1,2,2-Tetrachloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,1,2-Trichloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,1-Dichloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,1-Dichloroethene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2-Dichloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2-Dichloroethene (total)	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2-Dichloropropane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,3-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,4-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Butanone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Hexanone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Methyl-2-pentanone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Acetone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Bromodichloromethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Bromoform	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Bromomethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Carbon disulfide	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Carbon tetrachloride	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chloroform	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chloromethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	cis-1,3-Dichloropropene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Dibromochloromethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Ethylbenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Methylene chloride	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Styrene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Tetrachloroethene	45.90
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Toluene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	trans-1,3-Dichloropropene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Trichloroethene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Vinyl chloride	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Xylenes (total)	10.53

Table C-22. Field Duplicate Precision for 8270C

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2,4-Trichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,2-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,3-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	1,4-Dichlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4,5-Trichlorophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4,6-Trichlorophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-Dichlorophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-Dimethylphenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-Dinitrophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,4-Dinitrotoluene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2,6-Dinitrotoluene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Chloronaphthalene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Chlorophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Methylnaphthalene	26.67
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Methylphenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Nitroaniline	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	2-Nitrophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	3,3'-Dichlorobenzidine	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	3-Methylphenol & 4-Methylphenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	3-Nitroaniline	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4,6-Dinitro-2-methylphenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Bromophenyl phenyl ether	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Chloro-3-methylphenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Chloroaniline	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Chlorophenyl phenyl ether	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Nitroaniline	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	4-Nitrophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Acenaphthene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Acenaphthylene	32.26
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Aniline	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Anthracene	**129.52**
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Azobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzidine	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzo(a)anthracene	44.90
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzo(a)pyrene	35.62
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzo(b)fluoranthene	41.58
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzo(ghi)perylene	44.07
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzo(k)fluoranthene	40.00
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzoic acid	*

Table C-22. Field Duplicate Precision for 8270C

Sample Pairs	Analyte	RPD
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Benzyl alcohol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	bis(2-Chloroethoxy)methane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	bis(2-Chloroethyl) ether	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	bis(2-Chloroisopropyl) ether	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	bis(2-Ethylhexyl) phthalate	32.14
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Butyl benzyl phthalate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Carbazole	**109.52**
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Chrysene	6.32
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Dibenz(a,h)anthracene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Dibenzofuran	21.54
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Diethyl phthalate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Dimethyl phthalate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Di-n-butyl phthalate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Di-n-octyl phthalate	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Fluoranthene	**75.56**
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Fluorene	11.76
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Hexachlorobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Hexachlorobutadiene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Hexachlorocyclopentadiene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Hexachloroethane	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Indeno(1,2,3-cd)pyrene	49.41
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Isophorone	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Naphthalene	9.09
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Nitrobenzene	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	N-Nitrosodi-n-propylamine	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	N-Nitrosodiphenylamine	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Pentachlorophenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Phenanthrene	44.78
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Phenol	*
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Pyrene	50.00
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	Pyridine	*

Table C-23. MS/MSD RPD for 8082

Analyte	RPD	RPD Limit
Aroclor 1016	5.5	30
Aroclor 1260	0	30

Table C-24. MS/MSD RPD for 6020A/7174A

Analyte	RPD	RPD Limit
Arsenic	3	30
Barium	7.8	30
Cadmium	0.036	30
Chromium	6.1	30
Lead	17	30
Selenium	6.5	30
Silver	1	30
Mercury	0	30

Table C-25. MS/MSD RPD for 8270C

Analyte	RPD	RPD Limit
1,2,4-Trichlorobenzene	0.27	30
1,2-Dichlorobenzene	0.56	30
1,3-Dichlorobenzene	0.63	30
1,4-Dichlorobenzene	1.2	30
2,4,5-Trichlorophenol	0.41	30
2,4,6-Trichlorophenol	0.07	30
2,4-Dichlorophenol	1.4	30
2,4-Dimethylphenol	1.2	30
2,4-Dinitrophenol	24	30
2,4-Dinitrotoluene	3	30
2,6-Dinitrotoluene	2.5	30
2-Chloronaphthalene	1.8	30
2-Chlorophenol	1.6	30
2-Methylnaphthalene	0.55	30
2-Methylphenol	2.2	30
2-Nitroaniline	1.2	30
2-Nitrophenol	2.6	30
3,3'-Dichlorobenzidine	18	30
3-Methylphenol & 4-Methylphenol	3	30
3-Nitroaniline	8.6	30

Table C-25. MS/MSD RPD for 8270C

Analyte	RPD	RPD Limit
4,6-Dinitro-2-methylphenol	**39**	30
4-Bromophenyl phenyl ether	0.56	30
4-Chloro-3-methylphenol	1.5	30
4-Chloroaniline	9.9	30
4-Chlorophenyl phenyl ether	1.5	30
4-Nitroaniline	5.9	30
4-Nitrophenol	3.5	30
Acenaphthene	1.8	30
Acenaphthylene	6	30
Anthracene	6.8	30
Benzo(a)anthracene	6.4	30
Benzo(a)pyrene	9.9	30
Benzo(b)fluoranthene	4.9	30
Benzo(ghi)perylene	21	30
Benzo(k)fluoranthene	8	30
bis(2-Chloroethoxy)methane	0.28	30
bis(2-Chloroethyl) ether	1.9	30
bis(2-Chloroisopropyl) ether	2.6	30
bis(2-Ethylhexyl) phthalate	5.7	30
Butyl benzyl phthalate	4.8	30
Carbazole	1.4	30
Chrysene	7.4	30
Dibenz(a,h)anthracene	11	30
Dibenzofuran	2.2	30
Diethyl phthalate	0.14	30
Dimethyl phthalate	1.1	30
Di-n-butyl phthalate	0.94	30
Di-n-octyl phthalate	0.7	30
Fluoranthene	8.2	30
Fluorene	1.8	30
Hexachlorobenzene	2.6	30
Hexachlorobutadiene	1	30
Hexachlorocyclopentadiene	**84**	30
Hexachloroethane	4.2	30
Indeno(1,2,3-cd)pyrene	20	30
Isophorone	0.97	30
Naphthalene	1.1	30
Nitrobenzene	1.1	30

Table C-25. MS/MSD RPD for 8270C

Analyte	RPD	RPD Limit
N-Nitrosodi-n-propylamine	2.2	30
N-Nitrosodiphenylamine	1.2	30
Pentachlorophenol	1.9	30
Phenanthrene	1.3	30
Phenol	0.7	30
Pyrene	14	30

Table C-26 - LCD RPD for 8081A

Analyte	RPD	RPD Limit
4,4'-DDD	9.2	30
4,4'-DDE	12	30
4,4'-DDT	**31**	30
Aldrin	2.6	30
alpha-BHC	3.4	30
alpha-Chlordane	4.9	30
beta-BHC	5.4	30
delta-BHC	8	30
Dieldrin	5.6	30
Endosulfan I	7.2	30
Endosulfan II	8	30
Endosulfan sulfate	11	30
Endrin	8	30
Endrin aldehyde	8.6	30
Endrin ketone	11	30
gamma-BHC (Lindane)	5.1	30
gamma-Chlordane	6.6	30
Heptachlor	5.9	30
Heptachlor epoxide	5	30
Methoxychlor	10	30

Table C-27. LCD RPD for 8151A

Analyte	RPD	RPD Limit
2,4,5-T	16	20
2,4,5-TP (Silvex)	**24**	20
2,4-D	**22**	20
2,4-DB	**35**	20

Table C-28. LCD RPD for 8260B

Analyte	RPD	RPD Limit
1,1,1-Trichloroethane	4.9	20
1,1,2,2-Tetrachloroethane	0.41	20
1,1,2-Trichloroethane	4.9	20
1,1-Dichloroethane	6	20
1,1-Dichloroethene	0.6	20
1,2-Dichlorobenzene	4.8	20
1,2-Dichloroethane	6.8	20
1,2-Dichloroethene (total)	1.1	20
1,2-Dichloropropane	4.6	20
1,3-Dichlorobenzene	3.4	20
1,4-Dichlorobenzene	2.2	20
2-Butanone	6	20
2-Hexanone	7.7	20
4-Methyl-2-pentanone	5.2	20
Acetone	12	20
Benzene	4.5	20
Bromodichloromethane	3.9	20
Bromoform	3.9	20
Bromomethane	8.8	20
Carbon disulfide	1.7	20
Carbon tetrachloride	5.3	20
Chlorobenzene	4.5	20
Chloroethane	14	20
Chloroform	6.4	20
Chloromethane	4.8	20
cis-1,3-Dichloropropene	4.1	20
Dibromochloromethane	0.16	20
Ethylbenzene	5.9	20
Methylene chloride	4.8	20

Table C-28. LCD RPD for 8260B

Analyte	RPD	RPD Limit
Styrene	5.4	20
Tetrachloroethene	1.5	20
Toluene	5.1	20
trans-1,3-Dichloropropene	1.6	20
Trichloroethene	0.14	20
Vinyl chloride	11	20

Table C-29. Blank Results for 8082

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
Aroclor 1016	8	µg/kg	8	U
Aroclor 1221	8	µg/kg	8	U
Aroclor 1232	8	µg/kg	8	U
Aroclor 1242	8	µg/kg	8	U
Aroclor 1248	8	µg/kg	8	U
Aroclor 1254	8	µg/kg	8	U
Aroclor 1260	8	µg/kg	8	U

Table C-30. Blank Results for 6020A/7471A

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
Arsenic	0.6	mg/kg	0.6	U
Barium	0.18	mg/kg	0.18	U
Cadmium	0.03	mg/kg	0.03	U
Chromium	0.9	mg/kg	0.9	U
Lead	0.09	mg/kg	0.09	U
Selenium	0.15	mg/kg	0.15	U
Silver	0.024	mg/kg	0.024	U
Mercury	0.017	mg/kg	0.017	U

Table C-31. Blank Results for 8081A

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
4,4'-DDD	0.83	µg/kg	0.83	U
4,4'-DDE	0.83	µg/kg	0.83	U
4,4'-DDT	0.83	µg/kg	0.83	U
Aldrin	0.83	µg/kg	0.83	U
alpha-BHC	0.83	µg/kg	0.83	U
alpha-Chlordane	0.83	µg/kg	0.83	U
beta-BHC	0.83	µg/kg	0.83	U
Chlordane (technical)	8.5	µg/kg	8.5	U
delta-BHC	0.83	µg/kg	0.83	U
Dieldrin	0.83	µg/kg	0.83	U
Endosulfan I	0.83	µg/kg	0.83	U
Endosulfan II	0.83	µg/kg	0.83	U
Endosulfan sulfate	0.83	µg/kg	0.83	U
Endrin	0.83	µg/kg	0.83	U
Endrin aldehyde	0.83	µg/kg	0.83	U
Endrin ketone	0.83	µg/kg	0.83	U
gamma-BHC (Lindane)	0.83	µg/kg	0.83	U
gamma-Chlordane	0.83	µg/kg	0.83	U
Heptachlor	0.83	µg/kg	0.83	U
Heptachlor epoxide	0.83	µg/kg	0.83	U
Methoxychlor	0.83	µg/kg	0.83	U
Toxaphene	34	µg/kg	34	U

Table C-32. Blank Results for 8151A

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
2,4,5-T	4	µg/kg	4	U
2,4,5-TP (Silvex)	4	µg/kg	4	U
2,4-D	40	µg/kg	40	U
2,4-DB	40	µg/kg	40	U

Table C-33. Blank Results for 8260B

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
1,1,1-Trichloroethane	5	µg/kg	5	U
1,1,2,2-Tetrachloroethane	5	µg/kg	5	U
1,1,2-Trichloroethane	5	µg/kg	5	U
1,1-Dichloroethane	5	µg/kg	5	U
1,1-Dichloroethene	5	µg/kg	5	U
1,2-Dichlorobenzene	5	µg/kg	5	U
1,2-Dichloroethane	5	µg/kg	5	U
1,2-Dichloroethene (total)	10	µg/kg	10	U
1,2-Dichloropropane	5	µg/kg	5	U
1,3-Dichlorobenzene	5	µg/kg	5	U
1,4-Dichlorobenzene	5	µg/kg	5	U
2-Butanone	20	µg/kg	20	U
2-Hexanone	20	µg/kg	20	U
4-Methyl-2-pentanone	20	µg/kg	20	U
Acetone	20	µg/kg	20	U
Benzene	5	µg/kg	5	U
Bromodichloromethane	5	µg/kg	5	U
Bromoform	5	µg/kg	5	U
Bromomethane	10	µg/kg	10	U
Carbon disulfide	5	µg/kg	5	U
Carbon tetrachloride	5	µg/kg	5	U
Chlorobenzene	5	µg/kg	5	U
Chloroethane	10	µg/kg	10	U
Chloroform	5	µg/kg	5	U
Chloromethane	10	µg/kg	10	U
cis-1,3-Dichloropropene	5	µg/kg	5	U
Dibromochloromethane	5	µg/kg	5	U
Ethylbenzene	5	µg/kg	5	U
Methylene chloride	5	µg/kg	5	U
Styrene	5	µg/kg	5	U
Tetrachloroethene	5	µg/kg	5	U
Toluene	5	µg/kg	5	U
trans-1,3-Dichloropropene	5	µg/kg	5	U
Trichloroethene	5	µg/kg	5	U
Vinyl chloride	10	µg/kg	10	U
Xylenes (total)	10	µg/kg	10	U

Table C-34. Blank Results for 8270C

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
1,2,4-Trichlorobenzene	330	µg/kg	330	U
1,2-Dichlorobenzene	330	µg/kg	330	U
1,3-Dichlorobenzene	330	µg/kg	330	U
1,4-Dichlorobenzene	330	µg/kg	330	U
2,4,5-Trichlorophenol	330	µg/kg	330	U
2,4,6-Trichlorophenol	330	µg/kg	330	U
2,4-Dichlorophenol	330	µg/kg	330	U
2,4-Dimethylphenol	330	µg/kg	330	U
2,4-Dinitrophenol	1600	µg/kg	1600	U
2,4-Dinitrotoluene	330	µg/kg	330	U
2,6-Dinitrotoluene	330	µg/kg	330	U
2-Chloronaphthalene	330	µg/kg	330	U
2-Chlorophenol	330	µg/kg	330	U
2-Methylnaphthalene	330	µg/kg	330	U
2-Methylphenol	330	µg/kg	330	U
2-Nitroaniline	330	µg/kg	330	U
2-Nitrophenol	330	µg/kg	330	U
3,3'-Dichlorobenzidine	1600	µg/kg	1600	U
3-Methylphenol & 4-Methylphenol	660	µg/kg	660	U
3-Nitroaniline	330	µg/kg	330	U
4,6-Dinitro-2-methylphenol	1600	µg/kg	1600	U
4-Bromophenyl phenyl ether	330	µg/kg	330	U
4-Chloro-3-methylphenol	330	µg/kg	330	U
4-Chloroaniline	330	µg/kg	330	U
4-Chlorophenyl phenyl ether	330	µg/kg	330	U
4-Nitroaniline	1600	µg/kg	1600	U
4-Nitrophenol	1600	µg/kg	1600	U
Acenaphthene	330	µg/kg	330	U
Acenaphthylene	330	µg/kg	330	U
Aniline	330	µg/kg	330	U
Anthracene	330	µg/kg	330	U
Azobenzene	330	µg/kg	330	U
Benzidine	330	µg/kg	330	U
Benzo(a)anthracene	330	µg/kg	330	U
Benzo(a)pyrene	330	µg/kg	330	U
Benzo(b)fluoranthene	330	µg/kg	330	U
Benzo(ghi)perylene	330	µg/kg	330	U
Benzo(k)fluoranthene	330	µg/kg	330	U

Table C-34. Blank Results for 8270C

Analyte	Result	Units	Reporting Limit/MDC	Qualifier
Benzoic acid	1600	µg/kg	1600	U
Benzyl alcohol	330	µg/kg	330	U
bis(2-Chloroethoxy)methane	330	µg/kg	330	U
bis(2-Chloroethyl) ether	330	µg/kg	330	U
bis(2-Chloroisopropyl) ether	330	µg/kg	330	U
bis(2-Ethylhexyl) phthalate	330	µg/kg	330	U
Butyl benzyl phthalate	330	µg/kg	330	U
Carbazole	330	µg/kg	330	U
Chrysene	330	µg/kg	330	U
Di-n-butyl phthalate	330	µg/kg	330	U
Di-n-octyl phthalate	330	µg/kg	330	U
Dibenz(a,h)anthracene	330	µg/kg	330	U
Dibenzofuran	330	µg/kg	330	U
Diethyl phthalate	330	µg/kg	330	U
Dimethyl phthalate	330	µg/kg	330	U
Fluoranthene	330	µg/kg	330	U
Fluorene	330	µg/kg	330	U
Hexachlorobenzene	330	µg/kg	330	U
Hexachlorobutadiene	330	µg/kg	330	U
Hexachlorocyclopentadiene	1600	µg/kg	1600	U
Hexachloroethane	330	µg/kg	330	U
Indeno(1,2,3-cd)pyrene	330	µg/kg	330	U
Isophorone	330	µg/kg	330	U
N-Nitrosodi-n-propylamine	330	µg/kg	330	U
N-Nitrosodiphenylamine	330	µg/kg	330	U
Naphthalene	330	µg/kg	330	U
Nitrobenzene	330	µg/kg	330	U
Pentachlorophenol	660	µg/kg	660	U
Phenanthrene	330	µg/kg	330	U
Phenol	330	µg/kg	330	U
Pyrene	330	µg/kg	330	U
Pyridine	660	µg/kg	660	U

Table C-35. LCS Recovery for 8082

Analyte	Percent Recovery	Control Limits
Aroclor 1016	108	60-125
Aroclor 1260	109	60-130

Table C-35. LCS Recovery for 6020A/7174A

Analyte	Percent Recovery	Control Limits
Arsenic	103	80-120
Barium	105	80-120
Cadmium	101	80-120
Chromium	101	80-120
Lead	108	80-120
Selenium	109	80-120
Silver	104	80-120
Mercury	115	80-120

Table C-37. LCS Recovery for 8081A

Analyte	Percent Recovery	Control Limits
4,4'-DDD	121	30-135
4,4'-DDE	108	70-125
4,4'-DDT	126	45-140
Aldrin	101	45-140
alpha-BHC	102	60-125
alpha-Chlordane	101	65-120
beta-BHC	102	60-125
delta-BHC	110	55-130
Dieldrin	116	65-125
Endosulfan I	107	15-135
Endosulfan II	104	35-140
Endosulfan sulfate	105	60-135
Endrin	114	60-135
Endrin aldehyde	97	35-145
Endrin ketone	111	65-135
gamma-BHC (Lindane)	104	60-125
gamma-Chlordane	103	65-125
Heptachlor	103	50-140
Heptachlor epoxide	105	65-130
Methoxychlor	132	55-145

Table C-38. LCS Recovery for 8151A

Analyte	Percent Recovery	Control Limits
2,4,5-T	84	45-135
2,4,5-TP (Silvex)	66	45-125
2,4-D	82	35-145
2,4-DB	65	50-155

Table C-39. LCS Recovery for 8260B

Analyte	Percent Recovery	Control Limits
1,1,1-Trichloroethane	97	70-135
1,1,2,2-Tetrachloroethane	101	55-130
1,1,2-Trichloroethane	98	60-125
1,1-Dichloroethane	98	75-125
1,1-Dichloroethene	99	65-135
1,2-Dichlorobenzene	96	75-120
1,2-Dichloroethane	98	70-135
1,2-Dichloroethene (total)	98	85-115
1,2-Dichloropropane	96	70-120
1,3-Dichlorobenzene	98	70-125
1,4-Dichlorobenzene	96	70-125
2-Butanone	98	30-160
2-Hexanone	96	45-145
4-Methyl-2-pentanone	96	45-145
Acetone	82	20-160
Benzene	97	75-125
Bromodichloromethane	96	70-130
Bromoform	101	55-135
Bromomethane	93	30-160
Carbon disulfide	96	45-160
Carbon tetrachloride	92	65-135
Chlorobenzene	97	75-125
Chloroethane	94	40-155
Chloroform	97	70-125
Chloromethane	107	50-130
cis-1,3-Dichloropropene	105	70-125
Dibromochloromethane	96	65-130
Ethylbenzene	96	75-125
Methylene chloride	93	55-140
Styrene	103	75-125
Tetrachloroethene	95	65-140
Toluene	94	70-125
trans-1,3-Dichloropropene	105	65-125
Trichloroethene	98	75-125
Vinyl chloride	101	60-125

Table C-40. LCS Recovery for 8270C

Analyte	Percent Recovery	Control Limits
1,2,4-Trichlorobenzene	77	45-110
1,2-Dichlorobenzene	72	45-95
1,3-Dichlorobenzene	70	40-100
1,4-Dichlorobenzene	69	35-105
2,4,5-Trichlorophenol	70	50-110
2,4,6-Trichlorophenol	72	45-110
2,4-Dichlorophenol	69	45-110
2,4-Dimethylphenol	71	30-105
2,4-Dinitrophenol	45	15-130
2,4-Dinitrotoluene	79	50-115
2,6-Dinitrotoluene	77	50-110
2-Chloronaphthalene	72	45-105
2-Chlorophenol	71	45-105
2-Methylnaphthalene	69	45-105
2-Methylphenol	69	40-105
2-Nitroaniline	80	45-120
2-Nitrophenol	73	40-110
3,3'-Dichlorobenzidine	67	24-101
3-Methylphenol & 4-Methylphenol	77	40-105
3-Nitroaniline	70	25-110
4,6-Dinitro-2-methylphenol	66	30-135
4-Bromophenyl phenyl ether	78	45-115
4-Chloro-3-methylphenol	71	45-115
4-Chloroaniline	52	28-80
4-Chlorophenyl phenyl ether	74	45-110
4-Nitroaniline	76	35-115
4-Nitrophenol	84	15-140
Acenaphthene	74	45-110
Acenaphthylene	75	45-105
Anthracene	76	55-105
Benzo(a)anthracene	82	50-110
Benzo(a)pyrene	79	50-110
Benzo(b)fluoranthene	78	45-115
Benzo(ghi)perylene	101	40-125
Benzo(k)fluoranthene	83	45-125
bis(2-Chloroethoxy)methane	69	45-110
bis(2-Chloroethyl) ether	69	40-105
bis(2-Chloroisopropyl) ether	70	20-115

Table C-40. LCS Recovery for 8270C

Analyte	Percent Recovery	Control Limits
bis(2-Ethylhexyl) phthalate	82	45-125
Butyl benzyl phthalate	82	50-125
Carbazole	75	45-115
Chrysene	81	55-110
Di-n-butyl phthalate	76	55-110
Di-n-octyl phthalate	82	40-130
Dibenz(a,h)anthracene	99	40-125
Dibenzofuran	71	50-105
Diethyl phthalate	74	50-115
Dimethyl phthalate	73	50-110
Fluoranthene	79	55-115
Fluorene	76	50-110
Hexachlorobenzene	81	52-107
Hexachlorobutadiene	77	40-115
Hexachlorocyclopentadiene	90	38-107
Hexachloroethane	74	35-110
Indeno(1,2,3-cd)pyrene	104	40-120
Isophorone	76	45-110
N-Nitrosodi-n-propylamine	75	40-115
N-Nitrosodiphenylamine	94	50-115
Naphthalene	72	40-105
Nitrobenzene	72	40-115
Pentachlorophenol	63	25-120
Phenanthrene	76	50-110
Phenol	66	40-100
Pyrene	80	45-125

Table C-41. Surrogate Recovery for 8082

Sample	Analyte	Percent Recovery	Control Limits
BLK	Surrogate-Decachlorobiphenyl	107	54-150
LCS	Surrogate-Decachlorobiphenyl	105	60-125
SIW-SS-041PC-0.0-2.0	Surrogate-Decachlorobiphenyl	66	60-125
SIW-SS-042PC-0.0-2.0	Surrogate-Decachlorobiphenyl	54	60-125
SIW-SS-043PC-0.0-2.0	Surrogate-Decachlorobiphenyl	94	60-120
SIW-SS-043PC-0.0-2.0MS	Surrogate-Decachlorobiphenyl	88	60-125
SIW-SS-043PC-0.0-2.0MSD	Surrogate-Decachlorobiphenyl	95	60-125
SIW-SS-044PC-0.0-2.0	Surrogate-Decachlorobiphenyl	76	60-125
SIW-SS-CDUP-001	Surrogate-Decachlorobiphenyl	101	60-125

Table C-42. Surrogate Recovery for 8081A

Sample	Analyte	Percent Recovery	Control Limits
BLK	Surrogate-Decachlorobiphenyl	103	26-150
	Surrogate-Tetrachloro-m-xylene	87	35-128
LCD	Surrogate-Decachlorobiphenyl	88	55-130
	Surrogate-Tetrachloro-m-xylene	85	70-125
LCS	Surrogate-Decachlorobiphenyl	99	55-130
	Surrogate-Tetrachloro-m-xylene	90	70-125
SIW-SS-041PC-0.0-2.0	Surrogate-Decachlorobiphenyl	256	55-130
	Surrogate-Tetrachloro-m-xylene	80	70-125
SIW-SS-042PC-0.0-2.0	Surrogate-Decachlorobiphenyl	0	55-130
	Surrogate-Tetrachloro-m-xylene	121	70-125
SIW-SS-043PC-0.0-2.0	Surrogate-Decachlorobiphenyl	0	55-130
	Surrogate-Tetrachloro-m-xylene	83	70-125
SIW-SS-043PC-0.0-2.0MS	Surrogate-Decachlorobiphenyl	0	55-130
	Surrogate-Tetrachloro-m-xylene	74	70-125
SIW-SS-044PC-0.0-2.0	Surrogate-Decachlorobiphenyl	0	55-130
	Surrogate-Tetrachloro-m-xylene	87	70-125
SIW-SS-CDUP-001	Surrogate-Decachlorobiphenyl	0	55-130
	Surrogate-Tetrachloro-m-xylene	85	70-125

Table C-43. Surrogate Recovery for 8151A

Sample	Analyte	Percent Recovery	Control Limits
BLK	Surrogate-2,4-Dichlorophenylacetic acid	60	35-115
LCD	Surrogate-2,4-Dichlorophenylacetic acid	86	35-115
LCS	Surrogate-2,4-Dichlorophenylacetic acid	71	35-115
SIW-SS-041PC-0.0-2.0	Surrogate-2,4-Dichlorophenylacetic acid	74	35-115
SIW-SS-042PC-0.0-2.0	Surrogate-2,4-Dichlorophenylacetic acid	61	35-115
SIW-SS-043PC-0.0-2.0	Surrogate-2,4-Dichlorophenylacetic acid	87	35-115
SIW-SS-043PC-0.0-2.0MS	Surrogate-2,4-Dichlorophenylacetic acid	88	35-115
SIW-SS-044PC-0.0-2.0	Surrogate-2,4-Dichlorophenylacetic acid	63	35-115
SIW-SS-CDUP-001	Surrogate-2,4-Dichlorophenylacetic acid	108	35-115

Table C-44. Surrogate Recovery for 8260B

Sample	Analyte	Percent Recovery	Control Limits
BLK	Surrogate-1,2-Dichloroethane-d4	102	71-128
	Surrogate-4-Bromofluorobenzene	110	44-150
	Surrogate-Dibromofluoromethane	97	76-126
	Surrogate-Toluene-d8	110	85-115
LCD	Surrogate-1,2-Dichloroethane-d4	104	71-128
	Surrogate-4-Bromofluorobenzene	110	85-120
	Surrogate-Dibromofluoromethane	102	76-126
	Surrogate-Toluene-d8	112	85-115
LCS	Surrogate-1,2-Dichloroethane-d4	98	71-128
	Surrogate-4-Bromofluorobenzene	108	85-120
	Surrogate-Dibromofluoromethane	98	76-126
	Surrogate-Toluene-d8	106	85-115
SIW-SS-041PC-0.0-2.0	Surrogate-1,2-Dichloroethane-d4	117	71-128
	Surrogate-4-Bromofluorobenzene	156	85-120
	Surrogate-Dibromofluoromethane	105	76-126
	Surrogate-Toluene-d8	125	85-115
SIW-SS-042PC-0.0-2.0	Surrogate-1,2-Dichloroethane-d4	129	71-128
	Surrogate-4-Bromofluorobenzene	230	85-120
	Surrogate-Dibromofluoromethane	115	76-126
	Surrogate-Toluene-d8	158	85-115
SIW-SS-043PC-0.0-2.0	Surrogate-1,2-Dichloroethane-d4	171	71-128
	Surrogate-4-Bromofluorobenzene	251	85-120
	Surrogate-Dibromofluoromethane	149	76-126
	Surrogate-Toluene-d8	224	85-115
SIW-SS-044PC-0.0-2.0	Surrogate-1,2-Dichloroethane-d4	148	71-128
	Surrogate-4-Bromofluorobenzene	182	85-120
	Surrogate-Dibromofluoromethane	117	76-126
	Surrogate-Toluene-d8	156	85-115
SIW-SS-CDUP-001	Surrogate-1,2-Dichloroethane-d4	135	71-128
	Surrogate-4-Bromofluorobenzene	169	85-120
	Surrogate-Dibromofluoromethane	115	76-126
	Surrogate-Toluene-d8	160	85-115

Table C-45. Surrogate Recovery for 8270C

Sample	Analyte	Percent Recovery	Control Limits
BLK	Surrogate-2,4,6-Tribromophenol	75	35-125
	Surrogate-2-Fluorobiphenyl	78	45-105
	Surrogate-2-Fluorophenol	73	35-105
	Surrogate-Nitrobenzene-d5	77	35-100
	Surrogate-Phenol-d5	79	40-100
	Surrogate-Terphenyl-d14	98	30-125
LCS	Surrogate-2,4,6-Tribromophenol	84	35-125
	Surrogate-2-Fluorobiphenyl	74	45-105
	Surrogate-2-Fluorophenol	72	35-105
	Surrogate-Nitrobenzene-d5	76	35-100
	Surrogate-Phenol-d5	76	40-100
	Surrogate-Terphenyl-d14	94	30-125
SIW-SS-041PC-0.0-2.0	Surrogate-2,4,6-Tribromophenol	90	35-125
	Surrogate-2-Fluorobiphenyl	76	45-105
	Surrogate-2-Fluorophenol	70	35-105
	Surrogate-Nitrobenzene-d5	78	35-100
	Surrogate-Phenol-d5	76	40-100
	Surrogate-Terphenyl-d14	75	30-125
SIW-SS-042PC-0.0-2.0	Surrogate-2,4,6-Tribromophenol	61	35-125
	Surrogate-2-Fluorobiphenyl	55	45-105
	Surrogate-2-Fluorophenol	59	35-105
	Surrogate-Nitrobenzene-d5	61	35-100
	Surrogate-Phenol-d5	65	40-100
	Surrogate-Terphenyl-d14	73	30-125
SIW-SS-043PC-0.0-2.0	Surrogate-2,4,6-Tribromophenol	77	35-125
	Surrogate-2-Fluorobiphenyl	74	45-105
	Surrogate-2-Fluorophenol	71	35-105
	Surrogate-Nitrobenzene-d5	80	35-100
	Surrogate-Phenol-d5	76	40-100
	Surrogate-Terphenyl-d14	69	30-125
SIW-SS-043PC-0.0-2.0MS	Surrogate-2,4,6-Tribromophenol	90	35-125
	Surrogate-2-Fluorobiphenyl	79	45-105
	Surrogate-2-Fluorophenol	74	35-105
	Surrogate-Nitrobenzene-d5	80	35-100
	Surrogate-Phenol-d5	82	40-100
	Surrogate-Terphenyl-d14	77	30-125
SIW-SS-043PC-0.0-2.0MSD	Surrogate-2,4,6-Tribromophenol	92	35-125

Table C-45. Surrogate Recovery for 8270C

Sample	Analyte	Percent Recovery	Control Limits
	Surrogate-2-Fluorobiphenyl	78	45-105
	Surrogate-2-Fluorophenol	75	35-105
	Surrogate-Nitrobenzene-d5	80	35-100
	Surrogate-Phenol-d5	83	40-100
	Surrogate-Terphenyl-d14	80	30-125
SIW-SS-044PC-0.0-2.0	Surrogate-2,4,6-Tribromophenol	71	35-125
	Surrogate-2-Fluorobiphenyl	66	45-105
	Surrogate-2-Fluorophenol	68	35-105
	Surrogate-Nitrobenzene-d5	73	35-100
	Surrogate-Phenol-d5	73	40-100
	Surrogate-Terphenyl-d14	72	30-125
	Surrogate-2,4,6-Tribromophenol	75	35-125
	Surrogate-2-Fluorobiphenyl	71	45-105
	Surrogate-2-Fluorophenol	71	35-105
	Surrogate-Nitrobenzene-d5	77	35-100
	Surrogate-Phenol-d5	76	40-100
	Surrogate-Terphenyl-d14	77	30-125
SIW-SS-CDUP-001	Surrogate-2,4,6-Tribromophenol	75	35-125
	Surrogate-2-Fluorobiphenyl	74	45-105
	Surrogate-2-Fluorophenol	79	35-105
	Surrogate-Nitrobenzene-d5	81	35-100
	Surrogate-Phenol-d6	83	40-100
	Surrogate-Terphenyl-d15	87	30-125
	Surrogate-2,4,6-Tribromophenol	0	35-125
	Surrogate-2-Fluorobiphenyl	0	45-105
	Surrogate-2-Fluorophenol	0	35-105
	Surrogate-Nitrobenzene-d5	0	35-100
	Surrogate-Phenol-d5	0	40-100
	Surrogate-Terphenyl-d14	0	30-125

Table C-46. Matrix Spike Recovery for 8082

Analyte	Percent Recovery	Control Limits
Aroclor 1016	76	40-140
Aroclor 1260	0	60-130

Table C-47. Matrix Spike Recovery for 6020A/7174A

Analyte	Percent Recovery	Control Limits
Arsenic	90	80-120
Barium	0	80-120
Cadmium	102	80-120
Chromium	93	80-120
Lead	1210	80-120
Selenium	83	80-120
Silver	100	80-120
Mercury	0	80-120

Table C-48. Matrix Spike Recovery for 8081A

Analyte	Percent Recovery	Control Limits
4,4'-DDD	80	30-135
4,4'-DDE	120	70-125
4,4'-DDT	489	45-140
Aldrin	86	45-140
alpha-BHC	87	60-125
alpha-Chlordane	22	65-120
beta-BHC	87	60-125
delta-BHC	85	55-130
Dieldrin	64	65-125
Endosulfan I	96	15-135
Endosulfan II	24	35-140
Endosulfan sulfate	331	60-135
Endrin	66	60-135
Endrin aldehyde	392	35-145
Endrin ketone	148	65-135
gamma-BHC (Lindane)	81	60-125
gamma-Chlordane	23	65-125
Heptachlor	88	50-140
Heptachlor epoxide	49	65-130
Methoxychlor	115	55-145

Table C-49. Matrix Spike Recovery for 8151A

Analyte	Percent Recovery	Control Limits
2,4,5-T	75	45-135
2,4,5-TP (Silvex)	51	45-125
2,4-D	71	35-145
2,4-DB	55	50-155

Table C-50. Matrix Spike Recovery for 8270C

Analyte	Percent Recovery	Control Limits
1,2,4-Trichlorobenzene	77	45-110
1,2-Dichlorobenzene	69	45-95
1,3-Dichlorobenzene	66	40-100
1,4-Dichlorobenzene	65	35-105
2,4,5-Trichlorophenol	80	50-110
2,4,6-Trichlorophenol	79	45-110
2,4-Dichlorophenol	77	45-110
2,4-Dimethylphenol	77	30-105
2,4-Dinitrophenol	20	15-130
2,4-Dinitrotoluene	91	50-115
2,6-Dinitrotoluene	86	50-110
2-Chloronaphthalene	77	45-105
2-Chlorophenol	74	45-105
2-Methylnaphthalene	75	45-105
2-Methylphenol	76	40-105
2-Nitroaniline	92	45-120
2-Nitrophenol	76	40-110
3,3'-Dichlorobenzidine	13	24-101
3-Methylphenol & 4-Methylphenol	87	40-105
3-Nitroaniline	59	25-110
4,6-Dinitro-2-methylphenol	29	30-135
4-Bromophenyl phenyl ether	79	45-115
4-Chloro-3-methylphenol	82	45-115
4-Chloroaniline	43	28-80
4-Chlorophenyl phenyl ether	82	45-110
4-Nitroaniline	58	35-115
4-Nitrophenol	104	15-140
Acenaphthene	83	45-110
Acenaphthylene	90	45-105

Table C-50. Matrix Spike Recovery for 8270C

Analyte	Percent Recovery	Control Limits
Anthracene	86	55-105
Benzo(a)anthracene	95	50-110
Benzo(a)pyrene	93	50-110
Benzo(b)fluoranthene	119	45-115
Benzo(ghi)perylene	104	40-125
Benzo(k)fluoranthene	94	45-125
bis(2-Chloroethoxy)methane	74	45-110
bis(2-Chloroethyl) ether	69	40-105
bis(2-Chloroisopropyl) ether	70	20-115
bis(2-Ethylhexyl) phthalate	68	45-125
Butyl benzyl phthalate	73	50-125
Carbazole	81	45-115
Chrysene	94	55-110
Dibenz(a,h)anthracene	83	40-125
Dibenzofuran	79	50-105
Diethyl phthalate	85	50-115
Dimethyl phthalate	82	50-110
Di-n-butyl phthalate	82	55-110
Di-n-octyl phthalate	86	40-130
Fluoranthene	105	55-115
Fluorene	85	50-110
Hexachlorobenzene	83	52-107
Hexachlorobutadiene	74	40-115
Hexachlorocyclopentadiene	42	38-107
Hexachloroethane	68	35-110
Indeno(1,2,3-cd)pyrene	108	40-120
Isophorone	83	45-110
Naphthalene	74	40-105
Nitrobenzene	74	40-115
N-Nitrosodi-n-propylamine	84	40-115
N-Nitrosodiphenylamine	93	50-115
Pentachlorophenol	68	25-120
Phenanthrene	85	50-110
Phenol	72	40-100
Pyrene	74	45-125

Method	Sample Pairs
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8082	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
6020A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
7471A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
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8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8081A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8151A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8151A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8151A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8151A	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8260B	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8260B	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP

8260B	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
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8270C	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
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8270C	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8270C	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP
8270C	SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP

Analyte	RPD
Aroclor 1016	*
Aroclor 1221	*
Aroclor 1232	*
Aroclor 1242	*
Aroclor 1248	*
Aroclor 1254	*
Aroclor 1260	**60.377358490566**
Arsenic	15.6462585034014
Barium	40.1598401598402
Cadmium	16.3934426229508
Chromium	14.0625
Lead	19.0274841437632
Selenium	8.09248554913296
Silver	9.009009009009
Mercury	3.50877192982454
4,4'-DDD	*
4,4'-DDE	*
4,4'-DDT	29.0909090909091
Aldrin	*
alpha-BHC	*
alpha-Chlordane	*
beta-BHC	*
Chlordane (technical)	*
delta-BHC	*
Dieldrin	*
Endosulfan I	*
Endosulfan II	*
Endosulfan sulfate	*
Endrin	*
Endrin aldehyde	35.2941176470588
Endrin ketone	*
gamma-BHC (Lindane)	*
gamma-Chlordane	*
Heptachlor	13.953488372093
Heptachlor epoxide	*
Methoxychlor	*
Toxaphene	*
2,4,5-T	*
2,4,5-TP (Silvex)	*
2,4-D	*
2,4-DB	*
1,1,1-Trichloroethane	*
1,1,2,2-Tetrachloroethane	*

1,1,2-Trichloroethane	*
1,1-Dichloroethane	*
1,1-Dichloroethene	*
1,2-Dichlorobenzene	*
1,2-Dichloroethane	*
1,2-Dichloroethene (total)	*
1,2-Dichloropropane	*
1,3-Dichlorobenzene	*
1,4-Dichlorobenzene	*
2-Butanone	*
2-Hexanone	*
4-Methyl-2-pentanone	*
Acetone	*
Benzene	*
Bromodichloromethane	*
Bromoform	*
Bromomethane	*
Carbon disulfide	*
Carbon tetrachloride	*
Chlorobenzene	*
Chloroethane	*
Chloroform	*
Chloromethane	*
cis-1,3-Dichloropropene	*
Dibromochloromethane	*
Ethylbenzene	*
Methylene chloride	*
Styrene	*
Tetrachloroethene	45.9016393442623
Toluene	*
trans-1,3-Dichloropropene	*
Trichloroethene	*
Vinyl chloride	*
Xylenes (total)	10.5263157894737
1,2,4-Trichlorobenzene	*
1,2-Dichlorobenzene	*
1,3-Dichlorobenzene	*
1,4-Dichlorobenzene	*
2,4,5-Trichlorophenol	*
2,4,6-Trichlorophenol	*
2,4-Dichlorophenol	*
2,4-Dimethylphenol	*
2,4-Dinitrophenol	*
2,4-Dinitrotoluene	*
2,6-Dinitrotoluene	*
2-Chloronaphthalene	*
2-Chlorophenol	*

2-Methylnaphthalene	26.6666666666667
2-Methylphenol	*
2-Nitroaniline	*
2-Nitrophenol	*
3,3'-Dichlorobenzidine	*
3-Methylphenol & 4-Methylphenol	*
3-Nitroaniline	*
4,6-Dinitro-2-methylphenol	*
4-Bromophenyl phenyl ether	*
4-Chloro-3-methylphenol	*
4-Chloroaniline	*
4-Chlorophenyl phenyl ether	*
4-Nitroaniline	*
4-Nitrophenol	*
Acenaphthene	*
Acenaphthylene	32.258064516129
Aniline	*
Anthracene	**129.519450800915**
Azobenzene	*
Benzidine	*
Benzo(a)anthracene	44.8979591836735
Benzo(a)pyrene	35.6164383561644
Benzo(b)fluoranthene	41.5841584158416
Benzo(ghi)perylene	44.0677966101695
Benzo(k)fluoranthene	40
Benzoic acid	*
Benzyl alcohol	*
bis(2-Chloroethoxy)methane	*
bis(2-Chloroethyl) ether	*
bis(2-Chloroisopropyl) ether	*
bis(2-Ethylhexyl) phthalate	32.1428571428571
Butyl benzyl phthalate	*
Carbazole	**109.52380952381**
Chrysene	6.31578947368421
Dibenz(a,h)anthracene	*
Dibenzofuran	21.5384615384615
Diethyl phthalate	*
Dimethyl phthalate	*
Di-n-butyl phthalate	*
Di-n-octyl phthalate	*
Fluoranthene	**75.5555555555556**
Fluorene	11.7647058823529
Hexachlorobenzene	*
Hexachlorobutadiene	*
Hexachlorocyclopentadiene	*
Hexachloroethane	*
Indeno(1,2,3-cd)pyrene	49.4117647058824

Isophorone	*
Naphthalene	9.09090909090909
Nitrobenzene	*
N-Nitrosodi-n-propylamine	*
N-Nitrosodiphenylamine	*
Pentachlorophenol	*
Phenanthrene	44.7761194029851
Phenol	*
Pyrene	50
Pyridine	*

4 exceedances
147 comparisons

=4/147*100

Sample Pairs	Method
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8082
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	6020A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	7471A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8081A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8151A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8151A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8151A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8151A
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B

SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
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SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8260B
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C

SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
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SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
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SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
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SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C

SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C
SIW-SS-044PC-0.0-2.0/SIW-SS-CDUP	8270C

Analyte	Parent Result
Aroclor 1016	11
Aroclor 1221	11
Aroclor 1232	11
Aroclor 1242	11
Aroclor 1248	11
Aroclor 1254	11
Aroclor 1260	69
Arsenic	31.7
Barium	400
Cadmium	3.3
Chromium	137
Lead	2590
Selenium	0.83
Silver	0.58
Mercury	0.28
4,4'-DDD	0.9
4,4'-DDE	0.9
4,4'-DDT	6.3
Aldrin	0.9
alpha-BHC	0.9
alpha-Chlordane	0.9
beta-BHC	0.9
Chlordane (technical)	9.2
delta-BHC	0.9
Dieldrin	0.9
Endosulfan I	0.74
Endosulfan II	0.9
Endosulfan sulfate	0.9
Endrin	0.9
Endrin aldehyde	9.8
Endrin ketone	0.9
gamma-BHC (Lindane)	0.9
gamma-Chlordane	0.9
Heptachlor	4.6
Heptachlor epoxide	0.9
Methoxychlor	0.9
Toxaphene	36
2,4,5-T	7.2
2,4,5-TP (Silvex)	7.2
2,4-D	72
2,4-DB	72
1,1,1-Trichloroethane	0.54
1,1,2,2-Tetrachloroethane	0.54

1,1,2-Trichloroethane	0.54
1,1-Dichloroethane	0.54
1,1-Dichloroethene	0.54
1,2-Dichlorobenzene	0.54
1,2-Dichloroethane	0.54
1,2-Dichloroethene (total)	1.1
1,2-Dichloropropane	0.54
1,3-Dichlorobenzene	0.54
1,4-Dichlorobenzene	0.54
2-Butanone	1.1
2-Hexanone	0.54
4-Methyl-2-pentanone	0.54
Acetone	7.3
Benzene	0.39
Bromodichloromethane	0.54
Bromoform	0.54
Bromomethane	0.54
Carbon disulfide	0.54
Carbon tetrachloride	0.54
Chlorobenzene	0.54
Chloroethane	0.54
Chloroform	0.54
Chloromethane	0.54
cis-1,3-Dichloropropene	0.54
Dibromochloromethane	0.54
Ethylbenzene	0.48
Methylene chloride	0.92
Styrene	0.58
Tetrachloroethene	1.5
Toluene	1.3
trans-1,3-Dichloropropene	0.54
Trichloroethene	0.54
Vinyl chloride	0.54
Xylenes (total)	0.99
1,2,4-Trichlorobenzene	72
1,2-Dichlorobenzene	72
1,3-Dichlorobenzene	72
1,4-Dichlorobenzene	72
2,4,5-Trichlorophenol	72
2,4,6-Trichlorophenol	72
2,4-Dichlorophenol	72
2,4-Dimethylphenol	72
2,4-Dinitrophenol	720
2,4-Dinitrotoluene	72
2,6-Dinitrotoluene	72
2-Chloronaphthalene	72
2-Chlorophenol	72

2-Methylnaphthalene	170
2-Methylphenol	72
2-Nitroaniline	72
2-Nitrophenol	72
3,3'-Dichlorobenzidine	72
3-Methylphenol & 4-Methylphenol	210
3-Nitroaniline	72
4,6-Dinitro-2-methylphenol	720
4-Bromophenyl phenyl ether	72
4-Chloro-3-methylphenol	72
4-Chloroaniline	72
4-Chlorophenyl phenyl ether	72
4-Nitroaniline	72
4-Nitrophenol	720
Acenaphthene	72
Acenaphthylene	1800
Aniline	72
Anthracene	7700
Azobenzene	72
Benzidine	210
Benzo(a)anthracene	3000
Benzo(a)pyrene	4300
Benzo(b)fluoranthene	6100
Benzo(ghi)perylene	7200
Benzo(k)fluoranthene	2100
Benzoic acid	210
Benzyl alcohol	72
bis(2-Chloroethoxy)methane	72
bis(2-Chloroethyl) ether	72
bis(2-Chloroisopropyl) ether	72
bis(2-Ethylhexyl) phthalate	130
Butyl benzyl phthalate	72
Carbazole	3800
Chrysene	4900
Dibenz(a,h)anthracene	72
Dibenzofuran	360
Diethyl phthalate	72
Dimethyl phthalate	72
Di-n-butyl phthalate	72
Di-n-octyl phthalate	72
Fluoranthene	6200
Fluorene	480
Hexachlorobenzene	72
Hexachlorobutadiene	72
Hexachlorocyclopentadiene	72
Hexachloroethane	72
Indeno(1,2,3-cd)pyrene	5300

Isophorone	72
Naphthalene	230
Nitrobenzene	72
N-Nitrosodi-n-propylamine	72
N-Nitrosodiphenylamine	72
Pentachlorophenol	720
Phenanthrene	4100
Phenol	72
Pyrene	4500
Pyridine	210

Units	Qual	Field Duplicate Result	Units	Qual
ug/kg	U	8.7	ug/kg	U
ug/kg	U	8.7	ug/kg	U
ug/kg	U	8.7	ug/kg	U
ug/kg	U	8.7	ug/kg	U
ug/kg	U	8.7	ug/kg	U
ug/kg	U	8.7	ug/kg	U
ug/kg		37	ug/kg	
mg/kg		27.1	mg/kg	
mg/kg		601	mg/kg	
mg/kg		2.8	mg/kg	
mg/kg		119	mg/kg	
mg/kg		2140	mg/kg	
mg/kg		0.9	mg/kg	
mg/kg		0.53	mg/kg	
mg/kg		0.29	mg/kg	
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg		4.7	ug/kg	
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	9.2	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	2.5	ug/kg	
ug/kg		0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg		14	ug/kg	
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg		4	ug/kg	
ug/kg	U	0.9	ug/kg	U
ug/kg	U	0.9	ug/kg	U
ug/kg	U	36	ug/kg	U
ug/kg	U	5.3	ug/kg	U
ug/kg	U	5.3	ug/kg	U
ug/kg	U	53	ug/kg	U
ug/kg	U	53	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U

ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	1.1	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	1.1	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg		2.7	ug/kg	U
ug/kg		0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg		0.54	ug/kg	U
ug/kg		1.1	ug/kg	U
ug/kg		0.54	ug/kg	U
ug/kg		0.94	ug/kg	
ug/kg		0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg	U	0.54	ug/kg	U
ug/kg		1.1	ug/kg	
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	720	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U

ug/kg		130	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	210	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	720	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	720	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg		1300	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg		36000	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg	U	210	ug/kg	U	
ug/kg		1900	ug/kg		
ug/kg		3000	ug/kg		
ug/kg		4000	ug/kg		
ug/kg		4600	ug/kg		
ug/kg		1400	ug/kg		
ug/kg	U	210	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg		94	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg		13000	ug/kg		
ug/kg		4600	ug/kg		
ug/kg	U	920	ug/kg		
ug/kg		290	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg		2800	ug/kg		
ug/kg		540	ug/kg		
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg	U	72	ug/kg	U	
ug/kg		3200	ug/kg		

ug/kg	U	72	ug/kg	U
ug/kg		210	ug/kg	
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	72	ug/kg	U
ug/kg	U	720	ug/kg	U
ug/kg		2600	ug/kg	
ug/kg	U	72	ug/kg	U
ug/kg		2700	ug/kg	
ug/kg	U	210	ug/kg	U

Calculated RPD	Adjusted RPD
=((ABS(I2-L2))/((I2+L2)/2))*100	*
=((ABS(I3-L3))/((I3+L3)/2))*100	*
=((ABS(I4-L4))/((I4+L4)/2))*100	*
=((ABS(I5-L5))/((I5+L5)/2))*100	*
=((ABS(I6-L6))/((I6+L6)/2))*100	*
=((ABS(I7-L7))/((I7+L7)/2))*100	*
=((ABS(I8-L8))/((I8+L8)/2))*100	60.377358490566
=((ABS(I9-L9))/((I9+L9)/2))*100	15.6462585034014
=((ABS(I10-L10))/((I10+L10)/2))*100	40.1598401598402
=((ABS(I11-L11))/((I11+L11)/2))*100	16.3934426229508
=((ABS(I12-L12))/((I12+L12)/2))*100	14.0625
=((ABS(I13-L13))/((I13+L13)/2))*100	19.0274841437632
=((ABS(I14-L14))/((I14+L14)/2))*100	8.09248554913296
=((ABS(I15-L15))/((I15+L15)/2))*100	9.009009009009
=((ABS(I16-L16))/((I16+L16)/2))*100	3.50877192982454
=((ABS(I17-L17))/((I17+L17)/2))*100	*
=((ABS(I18-L18))/((I18+L18)/2))*100	*
=((ABS(I19-L19))/((I19+L19)/2))*100	29.0909090909091
=((ABS(I20-L20))/((I20+L20)/2))*100	*
=((ABS(I21-L21))/((I21+L21)/2))*100	*
=((ABS(I22-L22))/((I22+L22)/2))*100	*
=((ABS(I23-L23))/((I23+L23)/2))*100	*
=((ABS(I24-L24))/((I24+L24)/2))*100	*
=((ABS(I25-L25))/((I25+L25)/2))*100	*
=((ABS(I26-L26))/((I26+L26)/2))*100	*
=((ABS(I27-L27))/((I27+L27)/2))*100	*
=((ABS(I28-L28))/((I28+L28)/2))*100	*
=((ABS(I29-L29))/((I29+L29)/2))*100	*
=((ABS(I30-L30))/((I30+L30)/2))*100	*
=((ABS(I31-L31))/((I31+L31)/2))*100	35.2941176470588
=((ABS(I32-L32))/((I32+L32)/2))*100	*
=((ABS(I33-L33))/((I33+L33)/2))*100	*
=((ABS(I34-L34))/((I34+L34)/2))*100	*
=((ABS(I35-L35))/((I35+L35)/2))*100	13.953488372093
=((ABS(I36-L36))/((I36+L36)/2))*100	*
=((ABS(I37-L37))/((I37+L37)/2))*100	*
=((ABS(I38-L38))/((I38+L38)/2))*100	*
=((ABS(I39-L39))/((I39+L39)/2))*100	*
=((ABS(I40-L40))/((I40+L40)/2))*100	*
=((ABS(I41-L41))/((I41+L41)/2))*100	*
=((ABS(I42-L42))/((I42+L42)/2))*100	*
=((ABS(I43-L43))/((I43+L43)/2))*100	*
=((ABS(I44-L44))/((I44+L44)/2))*100	*

=((ABS(I45-L45))/((I45+L45)/2))*100	*
=((ABS(I46-L46))/((I46+L46)/2))*100	*
=((ABS(I47-L47))/((I47+L47)/2))*100	*
=((ABS(I48-L48))/((I48+L48)/2))*100	*
=((ABS(I49-L49))/((I49+L49)/2))*100	*
=((ABS(I50-L50))/((I50+L50)/2))*100	*
=((ABS(I51-L51))/((I51+L51)/2))*100	*
=((ABS(I52-L52))/((I52+L52)/2))*100	*
=((ABS(I53-L53))/((I53+L53)/2))*100	*
=((ABS(I54-L54))/((I54+L54)/2))*100	*
=((ABS(I55-L55))/((I55+L55)/2))*100	*
=((ABS(I56-L56))/((I56+L56)/2))*100	*
=((ABS(I57-L57))/((I57+L57)/2))*100	*
=((ABS(I58-L58))/((I58+L58)/2))*100	*
=((ABS(I59-L59))/((I59+L59)/2))*100	*
=((ABS(I60-L60))/((I60+L60)/2))*100	*
=((ABS(I61-L61))/((I61+L61)/2))*100	*
=((ABS(I62-L62))/((I62+L62)/2))*100	*
=((ABS(I63-L63))/((I63+L63)/2))*100	*
=((ABS(I64-L64))/((I64+L64)/2))*100	*
=((ABS(I65-L65))/((I65+L65)/2))*100	*
=((ABS(I66-L66))/((I66+L66)/2))*100	*
=((ABS(I67-L67))/((I67+L67)/2))*100	*
=((ABS(I68-L68))/((I68+L68)/2))*100	*
=((ABS(I69-L69))/((I69+L69)/2))*100	*
=((ABS(I70-L70))/((I70+L70)/2))*100	*
=((ABS(I71-L71))/((I71+L71)/2))*100	*
=((ABS(I72-L72))/((I72+L72)/2))*100	*
=((ABS(I73-L73))/((I73+L73)/2))*100	45.9016393442623
=((ABS(I74-L74))/((I74+L74)/2))*100	*
=((ABS(I75-L75))/((I75+L75)/2))*100	*
=((ABS(I76-L76))/((I76+L76)/2))*100	*
=((ABS(I77-L77))/((I77+L77)/2))*100	*
=((ABS(I78-L78))/((I78+L78)/2))*100	10.5263157894737
=((ABS(I79-L79))/((I79+L79)/2))*100	*
=((ABS(I80-L80))/((I80+L80)/2))*100	*
=((ABS(I81-L81))/((I81+L81)/2))*100	*
=((ABS(I82-L82))/((I82+L82)/2))*100	*
=((ABS(I83-L83))/((I83+L83)/2))*100	*
=((ABS(I84-L84))/((I84+L84)/2))*100	*
=((ABS(I85-L85))/((I85+L85)/2))*100	*
=((ABS(I86-L86))/((I86+L86)/2))*100	*
=((ABS(I87-L87))/((I87+L87)/2))*100	*
=((ABS(I88-L88))/((I88+L88)/2))*100	*
=((ABS(I89-L89))/((I89+L89)/2))*100	*
=((ABS(I90-L90))/((I90+L90)/2))*100	*
=((ABS(I91-L91))/((I91+L91)/2))*100	*

=((ABS(I92-L92))/((I92+L92)/2))*100	26.6666666666667
=((ABS(I93-L93))/((I93+L93)/2))*100	*
=((ABS(I94-L94))/((I94+L94)/2))*100	*
=((ABS(I95-L95))/((I95+L95)/2))*100	*
=((ABS(I96-L96))/((I96+L96)/2))*100	*
=((ABS(I97-L97))/((I97+L97)/2))*100	*
=((ABS(I98-L98))/((I98+L98)/2))*100	*
=((ABS(I99-L99))/((I99+L99)/2))*100	*
=((ABS(I100-L100))/((I100+L100)/2))*100	*
=((ABS(I101-L101))/((I101+L101)/2))*100	*
=((ABS(I102-L102))/((I102+L102)/2))*100	*
=((ABS(I103-L103))/((I103+L103)/2))*100	*
=((ABS(I104-L104))/((I104+L104)/2))*100	*
=((ABS(I105-L105))/((I105+L105)/2))*100	*
=((ABS(I106-L106))/((I106+L106)/2))*100	*
=((ABS(I107-L107))/((I107+L107)/2))*100	32.258064516129
=((ABS(I108-L108))/((I108+L108)/2))*100	*
=((ABS(I109-L109))/((I109+L109)/2))*100	129.519450800915
=((ABS(I110-L110))/((I110+L110)/2))*100	*
=((ABS(I111-L111))/((I111+L111)/2))*100	*
=((ABS(I112-L112))/((I112+L112)/2))*100	44.8979591836735
=((ABS(I113-L113))/((I113+L113)/2))*100	35.6164383561644
=((ABS(I114-L114))/((I114+L114)/2))*100	41.5841584158416
=((ABS(I115-L115))/((I115+L115)/2))*100	44.0677966101695
=((ABS(I116-L116))/((I116+L116)/2))*100	40
=((ABS(I117-L117))/((I117+L117)/2))*100	*
=((ABS(I118-L118))/((I118+L118)/2))*100	*
=((ABS(I119-L119))/((I119+L119)/2))*100	*
=((ABS(I120-L120))/((I120+L120)/2))*100	*
=((ABS(I121-L121))/((I121+L121)/2))*100	*
=((ABS(I122-L122))/((I122+L122)/2))*100	32.1428571428571
=((ABS(I123-L123))/((I123+L123)/2))*100	*
=((ABS(I124-L124))/((I124+L124)/2))*100	109.52380952381
=((ABS(I125-L125))/((I125+L125)/2))*100	6.31578947368421
=((ABS(I126-L126))/((I126+L126)/2))*100	*
=((ABS(I127-L127))/((I127+L127)/2))*100	21.5384615384615
=((ABS(I128-L128))/((I128+L128)/2))*100	*
=((ABS(I129-L129))/((I129+L129)/2))*100	*
=((ABS(I130-L130))/((I130+L130)/2))*100	*
=((ABS(I131-L131))/((I131+L131)/2))*100	*
=((ABS(I132-L132))/((I132+L132)/2))*100	75.5555555555556
=((ABS(I133-L133))/((I133+L133)/2))*100	11.7647058823529
=((ABS(I134-L134))/((I134+L134)/2))*100	*
=((ABS(I135-L135))/((I135+L135)/2))*100	*
=((ABS(I136-L136))/((I136+L136)/2))*100	*
=((ABS(I137-L137))/((I137+L137)/2))*100	*
=((ABS(I138-L138))/((I138+L138)/2))*100	49.4117647058824

=((ABS(I139-L139))/((I139+L139)/2))*100	*
=((ABS(I140-L140))/((I140+L140)/2))*100	9.09090909090909
=((ABS(I141-L141))/((I141+L141)/2))*100	*
=((ABS(I142-L142))/((I142+L142)/2))*100	*
=((ABS(I143-L143))/((I143+L143)/2))*100	*
=((ABS(I144-L144))/((I144+L144)/2))*100	*
=((ABS(I145-L145))/((I145+L145)/2))*100	44.7761194029851
=((ABS(I146-L146))/((I146+L146)/2))*100	*
=((ABS(I147-L147))/((I147+L147)/2))*100	50
=((ABS(I148-L148))/((I148+L148)/2))*100	*

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
LABQC	6020A	BLK	Arsenic	0.2		0.2	mg/kg	U			1	Y	
LABQC	6020A	BLK	Barium	0.057		0.057	mg/kg	U			1	Y	
LABQC	6020A	BLK	Cadmium	0.016		0.016	mg/kg	U			1	Y	
LABQC	6020A	BLK	Chromium	0.45		0.45	mg/kg	U			1	Y	
LABQC	6020A	BLK	Lead	0.1		0.1	mg/kg	U			1	Y	
LABQC	6020A	BLK	Selenium	0.16		0.16	mg/kg	U			1	Y	
LABQC	6020A	BLK	Silver	0.014		0.014	mg/kg	U			1	Y	
LABQC	6020A	LCS	Arsenic	103			%				2.5	Y	
LABQC	6020A	LCS	Barium	105			%				2.5	Y	
LABQC	6020A	LCS	Cadmium	101			%				2.5	Y	
LABQC	6020A	LCS	Chromium	101			%				2.5	Y	
LABQC	6020A	LCS	Lead	108			%				2.5	Y	
LABQC	6020A	LCS	Selenium	109			%				2.5	Y	
LABQC	6020A	LCS	Silver	103			%				2.5	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Arsenic	89.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Barium	-18.2			%	N			1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Cadmium	102.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Chromium	92.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Lead	1207.7			%	N			5	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Selenium	82.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MS	Silver	99.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Arsenic	3.03			%	*			1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Barium	7.79			%	N			1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Cadmium	0.036			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Chromium	6.07			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Lead	16.96			%	N			5	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Selenium	6.47			%				1	Y	
SIW-SS-043PC-0.0-2.0	6020A	MSD	Silver	1			%	*			1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Arsenic	5		1.1	mg/kg	E	J	E07	1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Barium	48		2.3	mg/kg	N	=	H02	1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Cadmium	0.058		0.057	mg/kg		=		1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Chromium	19		1.1	mg/kg		=		1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Lead	202		0.34	mg/kg	NE	J	E07	1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Selenium	1.8		0.57	mg/kg		=		1	Y	
SIW-SS-041PC-0.0-2.0	6020A	REG	Silver	0.043		0.23	mg/kg	B	U		1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Arsenic	2.9		1	mg/kg	E	J	E07	1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Barium	39.3		2.1	mg/kg	N	=	H02	1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Cadmium	0.16		0.052	mg/kg		=		1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Chromium	21.6		1	mg/kg		=		1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Lead	30.4		0.31	mg/kg	NE	J	E07	1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Selenium	0.95		0.52	mg/kg		=		1	Y	
SIW-SS-042PC-0.0-2.0	6020A	REG	Silver	0.076		0.21	mg/kg	B	U		1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Arsenic	29		1.1	mg/kg	E	J	E07	1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Barium	963		2.2	mg/kg	N	=	H02	1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Cadmium	4.4		0.055	mg/kg		=		1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Chromium	76.4		1.1	mg/kg		=		1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Lead	2960		1.6	mg/kg	NE	J	E07	5	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Selenium	2.1		0.55	mg/kg		=		1	Y	
SIW-SS-043PC-0.0-2.0	6020A	REG	Silver	0.72		0.22	mg/kg		=		1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Arsenic	31.7		1.1	mg/kg	E	J	E07	1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Barium	400		2.2	mg/kg	N	=	H02	1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Cadmium	3.3		0.054	mg/kg		=		1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Chromium	137		1.1	mg/kg		=		1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Lead	2590		1.6	mg/kg	NE	J	E07	5	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Selenium	0.83		0.54	mg/kg		=		1	Y	
SIW-SS-044PC-0.0-2.0	6020A	REG	Silver	0.58		0.22	mg/kg		=		1	Y	
SIW-SS-CDUP-001	6020A	REG	Arsenic	27.1		1.1	mg/kg	E	J	E07	1	Y	
SIW-SS-CDUP-001	6020A	REG	Barium	601		2.2	mg/kg	N	=	H02	1	Y	
SIW-SS-CDUP-001	6020A	REG	Cadmium	2.8		0.054	mg/kg		=		1	Y	
SIW-SS-CDUP-001	6020A	REG	Chromium	119		1.1	mg/kg		=		1	Y	
SIW-SS-CDUP-001	6020A	REG	Lead	2140		1.6	mg/kg	NE	J	E07	5	Y	
SIW-SS-CDUP-001	6020A	REG	Selenium	0.9		0.54	mg/kg		=		1	Y	
SIW-SS-CDUP-001	6020A	REG	Silver	0.53		0.22	mg/kg		=		1	Y	
LABQC	7471A	BLK	Mercury	0.011		0.011	mg/kg	U			1	Y	
LABQC	7471A	LCS	Mercury	115.38			%				50	Y	
SIW-SS-043PC-0.0-2.0	7471A	MS	Mercury	-59.4			%	N			10	Y	
SIW-SS-043PC-0.0-2.0	7471A	MSD	Mercury	12.16			%	N			10	Y	
SIW-SS-041PC-0.0-2.0	7471A	REG	Mercury	0.036		0.038	mg/kg	BN	J	E07	1	Y	
SIW-SS-042PC-0.0-2.0	7471A	REG	Mercury	0.048		0.034	mg/kg	N	J	E07	1	Y	
SIW-SS-043PC-0.0-2.0	7471A	REG	Mercury	3.1		0.36	mg/kg	N	J	E07	10	Y	
SIW-SS-044PC-0.0-2.0	7471A	REG	Mercury	0.28		0.036	mg/kg	N	J	E07	1	Y	
SIW-SS-CDUP-001	7471A	REG	Mercury	0.29		0.036	mg/kg	N	J	E07	1	Y	
LABQC	8081A	BLK	4,4'-DDD	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	4,4'-DDE	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	4,4'-DDT	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Aldrin	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	alpha-BHC	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	alpha-Chlo	0.83		0.83	ug/kg	U			1	Y	

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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
LABQC	8081A	BLK	beta-BHC	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Chlordane	8.5		8.5	ug/kg	U			1	Y	
LABQC	8081A	BLK	delta-BHC	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Dieldrin	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endosulfan	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endosulfan	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endosulfan	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endrin	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endrin alde	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Endrin keto	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	gamma-BH	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	gamma-Ch	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Heptachlor	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Heptachlor	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Methoxych	0.83		0.83	ug/kg	U			1	Y	
LABQC	8081A	BLK	Toxaphene	34		34	ug/kg	U			1	Y	
LABQC	8081A	LCD	4,4'-DDD	9.2			%				1	Y	
LABQC	8081A	LCD	4,4'-DDE	12			%				1	Y	
LABQC	8081A	LCD	4,4'-DDT	31			%	p			1	Y	
LABQC	8081A	LCD	Aldrin	2.6			%				1	Y	
LABQC	8081A	LCD	alpha-BHC	3.4			%				1	Y	
LABQC	8081A	LCD	alpha-Chlo	4.9			%				1	Y	
LABQC	8081A	LCD	beta-BHC	5.4			%				1	Y	
LABQC	8081A	LCD	delta-BHC	8			%				1	Y	
LABQC	8081A	LCD	Dieldrin	5.6			%				1	Y	
LABQC	8081A	LCD	Endosulfan	7.2			%				1	Y	
LABQC	8081A	LCD	Endosulfan	8			%				1	Y	
LABQC	8081A	LCD	Endosulfan	11			%				1	Y	
LABQC	8081A	LCD	Endrin	8			%				1	Y	
LABQC	8081A	LCD	Endrin alde	8.6			%				1	Y	
LABQC	8081A	LCD	Endrin keto	11			%				1	Y	
LABQC	8081A	LCD	gamma-BH	5.1			%				1	Y	
LABQC	8081A	LCD	gamma-Ch	6.6			%				1	Y	
LABQC	8081A	LCD	Heptachlor	5.9			%				1	Y	
LABQC	8081A	LCD	Heptachlor	5			%				1	Y	
LABQC	8081A	LCD	Methoxych	10			%				1	Y	
LABQC	8081A	LCS	4,4'-DDD	121			%				1	Y	
LABQC	8081A	LCS	4,4'-DDE	108			%				1	Y	
LABQC	8081A	LCS	4,4'-DDT	126			%				1	Y	
LABQC	8081A	LCS	Aldrin	101			%				1	Y	
LABQC	8081A	LCS	alpha-BHC	102			%				1	Y	
LABQC	8081A	LCS	alpha-Chlo	101			%				1	Y	
LABQC	8081A	LCS	beta-BHC	102			%				1	Y	
LABQC	8081A	LCS	delta-BHC	110			%				1	Y	
LABQC	8081A	LCS	Dieldrin	116			%				1	Y	
LABQC	8081A	LCS	Endosulfan	107			%				1	Y	
LABQC	8081A	LCS	Endosulfan	104			%				1	Y	
LABQC	8081A	LCS	Endosulfan	105			%				1	Y	
LABQC	8081A	LCS	Endrin	114			%				1	Y	
LABQC	8081A	LCS	Endrin alde	97			%				1	Y	
LABQC	8081A	LCS	Endrin keto	111			%				1	Y	
LABQC	8081A	LCS	gamma-BH	104			%				1	Y	
LABQC	8081A	LCS	gamma-Ch	103			%				1	Y	
LABQC	8081A	LCS	Heptachlor	103			%				1	Y	
LABQC	8081A	LCS	Heptachlor	105			%				1	Y	
LABQC	8081A	LCS	Methoxych	132			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	4,4'-DDD	80			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	4,4'-DDE	120			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	4,4'-DDT	489			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Aldrin	86			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	alpha-BHC	87			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	alpha-Chlo	22			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	beta-BHC	87			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	delta-BHC	85			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Dieldrin	64			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endosulfan	96			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endosulfan	24			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endosulfan	331			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endrin	66			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endrin alde	392			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Endrin keto	148			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	gamma-BH	81			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	gamma-Ch	23			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Heptachlor	88			%				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Heptachlor	49			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	MS	Methoxych	115			%				1	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	4,4'-DDD	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	4,4'-DDE	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-041PC-0.0-2.0	8081A	REG	4,4'-DDT	1.6		1.6	ug/kg	U	UJ	G01; H01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Aldrin	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	alpha-BHC	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	alpha-Chlo	1.6		1.6	ug/kg	U	UJ	G01; H02	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	beta-BHC	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Chlordane	16		16	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	delta-BHC	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Dieldrin	1.6		1.6	ug/kg	U	UJ	G01; H02	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endosulfan	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endosulfan	1.6		1.6	ug/kg	U	UJ	G01; H02	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endosulfan	1.6		1.6	ug/kg	U	UJ	G01; H01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endrin	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endrin alde	1.6		1.6	ug/kg	U	UJ	G01; H01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Endrin keto	1.6		1.6	ug/kg	U	UJ	G01; H01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	gamma-BH	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	gamma-Ch	1.6		1.6	ug/kg	U	UJ	G01; H02	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Heptachlor	1.6		1.6	ug/kg	U	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Heptachlor	1.6		1.6	ug/kg	U	UJ	G01; H02	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Methoxych	1.6		1.6	ug/kg	CV	UJ	G01	1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	REG	Toxaphene	62		62	ug/kg	CV	UJ	G01	1.64	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	4,4'-DDD	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	4,4'-DDE	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	4,4'-DDT	0.86		0.86	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Aldrin	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	alpha-BHC	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	alpha-Chlo	0.86		0.86	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	beta-BHC	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Chlordane	8.8		8.8	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	delta-BHC	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Dieldrin	0.86		0.86	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endosulfan	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endosulfan	0.86		0.86	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endosulfan	0.86		0.86	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endrin	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endrin alde	0.86		0.86	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Endrin keto	0.86		0.86	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	gamma-BH	0.86		0.86	ug/kg	U	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	gamma-Ch	0.86		0.86	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Heptachlor	1.8		1.8	ug/kg	PG	UJ	G04; M08	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Heptachlor	0.86		0.86	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Methoxych	0.86		0.86	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-042PC-0.0-2.0	8081A	REG	Toxaphene	35		35	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	4,4'-DDD	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	4,4'-DDE	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	4,4'-DDT	0.91		0.91	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Aldrin	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	alpha-BHC	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	alpha-Chlo	5		1.9	ug/kg	PG	J	G04; H02;	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	beta-BHC	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Chlordane	110		19	ug/kg		J	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	delta-BHC	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Dieldrin	0.91		0.91	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endosulfan	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endosulfan	0.91		0.91	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endosulfan	0.91		0.91	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endrin	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endrin alde	3.6		1.9	ug/kg	PG	J	G04; H01;	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Endrin keto	0.91		0.91	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	gamma-BH	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	gamma-Ch	6.2		1.9	ug/kg	PG	J	G04; H02;	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Heptachlor	0.91		0.91	ug/kg	U	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Heptachlor	0.91		0.91	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Methoxych	0.91		0.91	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-043PC-0.0-2.0	8081A	REG	Toxaphene	37		37	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	4,4'-DDD	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	4,4'-DDE	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	4,4'-DDT	6.3		1.8	ug/kg	PG	J	G01; H01	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Aldrin	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	alpha-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	alpha-Chlo	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	beta-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Chlordane	9.2		9.2	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	delta-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Dieldrin	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Endosulfan	0.74		1.8	ug/kg	J PG	J	G04; M08	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Endosulfan	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Endosulfan	0.9		0.9	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Endrin	0.9		0.9	ug/kg	U	UJ	G04	1	Y	

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Validated by:
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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-044PC-0.0-2.0	8081A	REG	Endrin alde	9.8		1.8	ug/kg	PG	J	G04; H01;	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Endrin ketc	0.9		0.9	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	gamma-BH	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	gamma-Ch	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Heptachlor	4.6		1.8	ug/kg	PG	J	G04; M08	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Heptachlor	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Methoxych	0.9		0.9	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-044PC-0.0-2.0	8081A	REG	Toxaphene	36		36	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	4,4'-DDD	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	4,4'-DDE	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	4,4'-DDT	4.7		1.8	ug/kg	PG CV	J	G04; H01;	1	Y	
SIW-SS-CDUP-001	8081A	REG	Aldrin	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	alpha-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	alpha-Chlo	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-CDUP-001	8081A	REG	beta-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	Chlordane	9.2		9.2	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	delta-BHC	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	Dieldrin	2.5		1.8	ug/kg	PG	J	G01; H02	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endosulfan	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endosulfan	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endosulfan	0.9		0.9	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endrin	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endrin alde	14		1.8	ug/kg	PG	J	G04; H01;	1	Y	
SIW-SS-CDUP-001	8081A	REG	Endrin ketc	0.9		0.9	ug/kg	U	UJ	G01; H01	1	Y	
SIW-SS-CDUP-001	8081A	REG	gamma-BH	0.9		0.9	ug/kg	U	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	gamma-Ch	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-CDUP-001	8081A	REG	Heptachlor	4		1.8	ug/kg	PG	J	G04; M08	1	Y	
SIW-SS-CDUP-001	8081A	REG	Heptachlor	0.9		0.9	ug/kg	U	UJ	G01; H02	1	Y	
SIW-SS-CDUP-001	8081A	REG	Methoxych	0.9		0.9	ug/kg	CV	UJ	G04	1	Y	
SIW-SS-CDUP-001	8081A	REG	Toxaphene	36		36	ug/kg	CV	UJ	G04	1	Y	
LABQC	8081A	SUR	Surrogate-I	6.9			ug/kg				1	Y	
LABQC	8081A	SUR	Surrogate-I	6.62			ug/kg				1	Y	
LABQC	8081A	SUR	Surrogate-I	5.89			ug/kg				1	Y	
LABQC	8081A	SUR	Surrogate-T	5.97			ug/kg				1	Y	
LABQC	8081A	SUR	Surrogate-T	5.8			ug/kg				1	Y	
LABQC	8081A	SUR	Surrogate-T	5.65			ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8081A	SUR	Surrogate-I	32			ug/kg	*			1.64	Y	
SIW-SS-041PC-0.0-2.0	8081A	SUR	Surrogate-T	10			ug/kg				1.64	Y	
SIW-SS-042PC-0.0-2.0	8081A	SUR	Surrogate-I	0			ug/kg	*			1	Y	
SIW-SS-042PC-0.0-2.0	8081A	SUR	Surrogate-T	8.4			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	SUR	Surrogate-I	0			ug/kg	*			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	SUR	Surrogate-I	0			ug/kg	*			1	Y	
SIW-SS-043PC-0.0-2.0	8081A	SUR	Surrogate-T	6.1			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8081A	SUR	Surrogate-T	5.41			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8081A	SUR	Surrogate-I	0			ug/kg	*			1	Y	
SIW-SS-044PC-0.0-2.0	8081A	SUR	Surrogate-T	6.9			ug/kg				1	Y	
SIW-SS-CDUP-001	8081A	SUR	Surrogate-I	0			ug/kg	*			1	Y	
SIW-SS-CDUP-001	8081A	SUR	Surrogate-T	6.2			ug/kg				1	Y	
LABQC	8082	BLK	Aroclor 101	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 122	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 123	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 124	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 124	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 125	8		8	ug/kg	U			1	Y	
LABQC	8082	BLK	Aroclor 126	8		8	ug/kg	U			1	Y	
LABQC	8082	LCS	Aroclor 101	108			%				1	Y	
LABQC	8082	LCS	Aroclor 126	109			%	CV			1	Y	
SIW-SS-043PC-0.0-2.0	8082	MS	Aroclor 101	76			%				1	Y	
SIW-SS-043PC-0.0-2.0	8082	MS	Aroclor 126	0			%	a CV			1	Y	
SIW-SS-043PC-0.0-2.0	8082	MSD	Aroclor 101	5.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	8082	MSD	Aroclor 126	0			%	a CV			1	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 101	15		15	ug/kg	U	U	H02,G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 122	15		15	ug/kg	U	U	G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 123	15		15	ug/kg	U	U	G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 124	15		15	ug/kg	U	U	G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 124	15		15	ug/kg	U	U	G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 125	15		15	ug/kg	U	U	G02	1.66	Y	
SIW-SS-041PC-0.0-2.0	8082	REG	Aroclor 126	15		15	ug/kg	U	UJ	H03; C05	1.66	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 101	8.3		8.3	ug/kg	U	U	H02,G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 122	8.3		8.3	ug/kg	U	U	G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 123	8.3		8.3	ug/kg	U	U	G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 124	8.3		8.3	ug/kg	U	U	G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 124	8.3		8.3	ug/kg	U	U	G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 125	8.3		8.3	ug/kg	U	U	G02	1	Y	
SIW-SS-042PC-0.0-2.0	8082	REG	Aroclor 126	8.3		8.3	ug/kg	U	UJ	H03; C05	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 101	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 122	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 123	8.7		8.7	ug/kg	U	U	G02	1	Y	

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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 124	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 124	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 125	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-043PC-0.0-2.0	8082	REG	Aroclor 126	450		36	ug/kg	CV	J	H03; C05	1	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 101	11		11	ug/kg	U	U	H02,G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 122	11		11	ug/kg	U	U	G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 123	11		11	ug/kg	U	U	G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 124	11		11	ug/kg	U	U	G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 124	11		11	ug/kg	U	U	G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 125	11		11	ug/kg	U	U	G02	1.3	Y	
SIW-SS-044PC-0.0-2.0	8082	REG	Aroclor 126	69		47	ug/kg	CV	J	H03; C05;	1.3	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 101	8.7		8.7	ug/kg	U	U	H02,G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 122	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 123	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 124	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 124	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 125	8.7		8.7	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8082	REG	Aroclor 126	37		36	ug/kg	CV	J	H03; C05;	1	Y	
LABQC	8082	SUR	Surrogate-I	7.1			ug/kg	CV			1	Y	
LABQC	8082	SUR	Surrogate-I	7.03			ug/kg	CV			1	Y	
SIW-SS-041PC-0.0-2.0	8082	SUR	Surrogate-I	8.4			ug/kg	CV			1.66	Y	
SIW-SS-042PC-0.0-2.0	8082	SUR	Surrogate-I	3.7			ug/kg	CV			1	Y	
SIW-SS-043PC-0.0-2.0	8082	SUR	Surrogate-I	6.41			ug/kg	CV			1	Y	
SIW-SS-043PC-0.0-2.0	8082	SUR	Surrogate-I	6.9			ug/kg	CV			1	Y	
SIW-SS-043PC-0.0-2.0	8082	SUR	Surrogate-I	6.96			ug/kg	CV			1	Y	
SIW-SS-044PC-0.0-2.0	8082	SUR	Surrogate-I	7.2			ug/kg	CV			1.3	Y	
SIW-SS-CDUP-001	8082	SUR	Surrogate-I	7.3			ug/kg	CV			1	Y	
LABQC	8151A	BLK	2,4,5-T	4		4	ug/kg	U			1	Y	
LABQC	8151A	BLK	2,4,5-TP (S	4		4	ug/kg	U			1	Y	
LABQC	8151A	BLK	2,4-D	40		40	ug/kg	U			1	Y	
LABQC	8151A	BLK	2,4-DB	40		40	ug/kg	U			1	Y	
LABQC	8151A	LCD	2,4,5-T	16			%				1	Y	
LABQC	8151A	LCD	2,4,5-TP (S	24			%	p			1	Y	
LABQC	8151A	LCD	2,4-D	22			%	p			1	Y	
LABQC	8151A	LCD	2,4-DB	35			%	p			1	Y	
LABQC	8151A	LCS	2,4,5-T	84			%				1	Y	
LABQC	8151A	LCS	2,4,5-TP (S	66			%				1	Y	
LABQC	8151A	LCS	2,4-D	82			%				1	Y	
LABQC	8151A	LCS	2,4-DB	65			%				1	Y	
SIW-SS-043PC-0.0-2.0	8151A	MS	2,4,5-T	75			%				1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	MS	2,4,5-TP (S	51			%				1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	MS	2,4-D	71			%				1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	MS	2,4-DB	55			%				1.56	Y	
SIW-SS-041PC-0.0-2.0	8151A	REG	2,4,5-T	7.6		7.6	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-041PC-0.0-2.0	8151A	REG	2,4,5-TP (S	7.6		7.6	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-041PC-0.0-2.0	8151A	REG	2,4-D	76		76	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-041PC-0.0-2.0	8151A	REG	2,4-DB	76		76	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-042PC-0.0-2.0	8151A	REG	2,4,5-T	4.1		4.1	ug/kg	U	U	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8151A	REG	2,4,5-TP (S	4.1		4.1	ug/kg	U	UJ	H04	1	Y	
SIW-SS-042PC-0.0-2.0	8151A	REG	2,4-D	41		41	ug/kg	U	UJ	H04	1	Y	
SIW-SS-042PC-0.0-2.0	8151A	REG	2,4-DB	41		41	ug/kg	U	UJ	H04	1	Y	
SIW-SS-043PC-0.0-2.0	8151A	REG	2,4,5-T	6.8		6.8	ug/kg	U	U	I06	1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	REG	2,4,5-TP (S	6.8		6.8	ug/kg	U	UJ	H04	1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	REG	2,4-D	68		68	ug/kg	U	UJ	H04	1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	REG	2,4-DB	68		68	ug/kg	U	UJ	H04	1.56	Y	
SIW-SS-044PC-0.0-2.0	8151A	REG	2,4,5-T	7.2		7.2	ug/kg	U	U	I06	1.66	Y	
SIW-SS-044PC-0.0-2.0	8151A	REG	2,4,5-TP (S	7.2		7.2	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-044PC-0.0-2.0	8151A	REG	2,4-D	72		72	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-044PC-0.0-2.0	8151A	REG	2,4-DB	72		72	ug/kg	U	UJ	H04	1.66	Y	
SIW-SS-CDUP-001	8151A	REG	2,4,5-T	5.3		5.3	ug/kg	U	U	I06	1.21	Y	
SIW-SS-CDUP-001	8151A	REG	2,4,5-TP (S	5.3		5.3	ug/kg	U	UJ	H04	1.21	Y	
SIW-SS-CDUP-001	8151A	REG	2,4-D	53		53	ug/kg	U	UJ	H04	1.21	Y	
SIW-SS-CDUP-001	8151A	REG	2,4-DB	53		53	ug/kg	U	UJ	H04	1.21	Y	
LABQC	8151A	SUR	Surrogate-2	190			ug/kg				1	Y	
LABQC	8151A	SUR	Surrogate-2	226			ug/kg				1	Y	
LABQC	8151A	SUR	Surrogate-2	276			ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8151A	SUR	Surrogate-2	450			ug/kg				1.66	Y	
SIW-SS-042PC-0.0-2.0	8151A	SUR	Surrogate-2	200			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8151A	SUR	Surrogate-2	480			ug/kg				1.56	Y	
SIW-SS-043PC-0.0-2.0	8151A	SUR	Surrogate-2	480			ug/kg				1.56	Y	
SIW-SS-044PC-0.0-2.0	8151A	SUR	Surrogate-2	360			ug/kg				1.66	Y	
SIW-SS-CDUP-001	8151A	SUR	Surrogate-2	450			ug/kg				1.21	Y	
LABQC	8260B	BLK	1,1,1-Trich	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,1,2,2-Tet	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,1,2-Trich	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,1-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,1-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,2-Dichlor	5		5	ug/kg	U	U		1	Y	

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Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
LABQC	8260B	BLK	1,2-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,2-Dichlor	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,2-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,3-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	1,4-Dichlor	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	2-Butanone	20		20	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	2-Hexanon	20		20	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	4-Methyl-2	20		20	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Acetone	20		20	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Benzene	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Bromodich	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Bromoform	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Bromometh	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Carbon dis	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Carbon tet	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Chlorobenz	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Chloroetha	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Chloroform	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Chlorometh	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	cis-1,3-Dic	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Dibromoch	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Ethylbenze	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Methylene	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Styrene	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Tetrachlorc	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Toluene	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	trans-1,3-D	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Trichloroet	5		5	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Vinyl chlori	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	BLK	Xylenes (to	10		10	ug/kg	U	U		1	Y	
LABQC	8260B	LCD	1,1,1-Trich	4.9			%				1	Y	
LABQC	8260B	LCD	1,1,2,2-Tet	0.41			%				1	Y	
LABQC	8260B	LCD	1,1,2-Trich	4.9			%				1	Y	
LABQC	8260B	LCD	1,1-Dichlor	6			%				1	Y	
LABQC	8260B	LCD	1,1-Dichlor	0.6			%				1	Y	
LABQC	8260B	LCD	1,2-Dichlor	4.8			%				1	Y	
LABQC	8260B	LCD	1,2-Dichlor	6.8			%				1	Y	
LABQC	8260B	LCD	1,2-Dichlor	1.1			%				1	Y	
LABQC	8260B	LCD	1,2-Dichlor	4.6			%				1	Y	
LABQC	8260B	LCD	1,3-Dichlor	3.4			%				1	Y	
LABQC	8260B	LCD	1,4-Dichlor	2.2			%				1	Y	
LABQC	8260B	LCD	2-Butanone	6			%				1	Y	
LABQC	8260B	LCD	2-Hexanon	7.7			%				1	Y	
LABQC	8260B	LCD	4-Methyl-2	5.2			%				1	Y	
LABQC	8260B	LCD	Acetone	12			%				1	Y	
LABQC	8260B	LCD	Benzene	4.5			%				1	Y	
LABQC	8260B	LCD	Bromodich	3.9			%				1	Y	
LABQC	8260B	LCD	Bromoform	3.9			%				1	Y	
LABQC	8260B	LCD	Bromometh	8.8			%				1	Y	
LABQC	8260B	LCD	Carbon dis	1.7			%				1	Y	
LABQC	8260B	LCD	Carbon tet	5.3			%				1	Y	
LABQC	8260B	LCD	Chlorobenz	4.5			%				1	Y	
LABQC	8260B	LCD	Chloroetha	14			%				1	Y	
LABQC	8260B	LCD	Chloroform	6.4			%				1	Y	
LABQC	8260B	LCD	Chlorometh	4.8			%				1	Y	
LABQC	8260B	LCD	cis-1,3-Dic	4.1			%				1	Y	
LABQC	8260B	LCD	Dibromoch	0.16			%				1	Y	
LABQC	8260B	LCD	Ethylbenze	5.9			%				1	Y	
LABQC	8260B	LCD	Methylene	4.8			%				1	Y	
LABQC	8260B	LCD	Styrene	5.4			%				1	Y	
LABQC	8260B	LCD	Tetrachlorc	1.5			%				1	Y	
LABQC	8260B	LCD	Toluene	5.1			%				1	Y	
LABQC	8260B	LCD	trans-1,3-D	1.6			%				1	Y	
LABQC	8260B	LCD	Trichloroet	0.14			%				1	Y	
LABQC	8260B	LCD	Vinyl chlori	11			%				1	Y	
LABQC	8260B	LCS	1,1,1-Trich	97			%				1	Y	
LABQC	8260B	LCS	1,1,2,2-Tet	101			%				1	Y	
LABQC	8260B	LCS	1,1,2-Trich	98			%				1	Y	
LABQC	8260B	LCS	1,1-Dichlor	98			%				1	Y	
LABQC	8260B	LCS	1,1-Dichlor	99			%				1	Y	
LABQC	8260B	LCS	1,2-Dichlor	96			%				1	Y	
LABQC	8260B	LCS	1,2-Dichlor	98			%				1	Y	
LABQC	8260B	LCS	1,2-Dichlor	98			%				1	Y	
LABQC	8260B	LCS	1,2-Dichlor	96			%				1	Y	
LABQC	8260B	LCS	1,3-Dichlor	98			%				1	Y	
LABQC	8260B	LCS	1,4-Dichlor	96			%				1	Y	
LABQC	8260B	LCS	2-Butanone	98			%				1	Y	
LABQC	8260B	LCS	2-Hexanon	96			%				1	Y	

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LABQC	8260B	LCS	4-Methyl-2-	96			%				1	Y	
LABQC	8260B	LCS	Acetone	82			%				1	Y	
LABQC	8260B	LCS	Benzene	97			%				1	Y	
LABQC	8260B	LCS	Bromodich	96			%				1	Y	
LABQC	8260B	LCS	Bromoform	101			%				1	Y	
LABQC	8260B	LCS	Bromometl	93			%				1	Y	
LABQC	8260B	LCS	Carbon dis	96			%				1	Y	
LABQC	8260B	LCS	Carbon tet	92			%				1	Y	
LABQC	8260B	LCS	Chlorobenz	97			%				1	Y	
LABQC	8260B	LCS	Chloroetha	94			%				1	Y	
LABQC	8260B	LCS	Chloroform	97			%				1	Y	
LABQC	8260B	LCS	Chlorometl	107			%				1	Y	
LABQC	8260B	LCS	cis-1,3-Dic	105			%				1	Y	
LABQC	8260B	LCS	Dibromoch	96			%				1	Y	
LABQC	8260B	LCS	Ethylbenze	96			%				1	Y	
LABQC	8260B	LCS	Methylene	93			%				1	Y	
LABQC	8260B	LCS	Styrene	103			%				1	Y	
LABQC	8260B	LCS	Tetrachlorc	95			%				1	Y	
LABQC	8260B	LCS	Toluene	94			%				1	Y	
LABQC	8260B	LCS	trans-1,3-D	105			%				1	Y	
LABQC	8260B	LCS	Trichloroetl	98			%				1	Y	
LABQC	8260B	LCS	Vinyl chlori	101			%				1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,1,1-Trich	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,1,2,2-Tet	5.7		5.7	ug/kg	U	UJ	I06;G01	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,1,2-Trich	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.7		5.7	ug/kg	U	UJ	I06;G01	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,2-Dichlor	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,3-Dichlor	5.7		5.7	ug/kg	U	UJ	I06;G01	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	1,4-Dichlor	5.7		5.7	ug/kg	U	UJ	I06;G01	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	2-Butanone	10		23	ug/kg	J	J	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	2-Hexanon	23		23	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	4-Methyl-2-	23		23	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Acetone	27		23	ug/kg		J	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Benzene	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Bromodich	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Bromoform	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Bromometl	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Carbon dis	1.6		5.7	ug/kg	J	J	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Carbon tet	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Chlorobenz	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Chloroetha	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Chloroform	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Chlorometl	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	cis-1,3-Dic	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Dibromoch	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Ethylbenze	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Methylene	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Styrene	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Tetrachlorc	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Toluene	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	trans-1,3-D	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Trichloroetl	5.7		5.7	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Vinyl chlori	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-041PC-0.0-2.0	8260B	REA	Xylenes (to	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,1,1-Trich	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,1,2,2-Tet	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,1,2-Trich	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,2-Dichlor	10		10	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,3-Dichlor	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	1,4-Dichlor	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	2-Butanone	21		21	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	2-Hexanon	21		21	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	4-Methyl-2-	21		21	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Acetone	21		21	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Benzene	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Bromodich	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Bromoform	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Bromometl	10		10	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Carbon dis	5.2		5.2	ug/kg	U	UJ	I06	1	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-042PC-0.0-2.0	8260B	REA	Carbon tet	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Chloroben	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Chloroetha	10		10	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Chloroform	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Chlorometh	10		10	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	cis-1,3-Dic	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Dibromoch	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Ethylbenze	0.61		5.2	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Methylene	1.5		5.2	ug/kg	J	J	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Styrene	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Tetrachlord	5.2		5.2	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Toluene	0.86		5.2	ug/kg	J	J	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	trans-1,3-D	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Trichloroet	5.2		5.2	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Vinyl chlori	10		10	ug/kg	U	UJ	I06	1	Y	
SIW-SS-042PC-0.0-2.0	8260B	REA	Xylenes (to	2.3		10	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,1,1-Trich	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,1,2,2-Tet	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,1,2-Trich	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,2-Dichlor	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,3-Dichlor	0.95		5.5	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	1,4-Dichlor	0.94		5.5	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	2-Butanone	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	2-Hexanon	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	4-Methyl-2-	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Acetone	14		22	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Benzene	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Bromodich	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Bromoform	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Bromometh	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Carbon dis	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Carbon tet	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Chloroben	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Chloroetha	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Chloroform	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Chlorometh	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	cis-1,3-Dic	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Dibromoch	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Ethylbenze	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Methylene	1.1		5.5	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Styrene	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Tetrachlord	0.58		5.5	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Toluene	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	trans-1,3-D	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Trichloroet	5.5		5.5	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Vinyl chlori	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-043PC-0.0-2.0	8260B	REA	Xylenes (to	1.2		11	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,1,1-Trich	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,1,2,2-Tet	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,1,2-Trich	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,1-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,2-Dichlor	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,3-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	1,4-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	2-Butanone	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	2-Hexanon	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	4-Methyl-2-	22		22	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Acetone	7.3		22	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Benzene	0.39		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Bromodich	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Bromoform	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Bromometh	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Carbon dis	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Carbon tet	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Chloroben	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Chloroetha	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Chloroform	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Chlorometh	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	cis-1,3-Dic	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-044PC-0.0-2.0	8260B	REA	Dibromoch	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Ethylbenze	0.48		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Methylene	0.92		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Styrene	0.58		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Tetrachlorc	1.5		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Toluene	1.3		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	trans-1,3-D	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Trichloroet	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Vinyl chlori	11		11	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-044PC-0.0-2.0	8260B	REA	Xylenes (to	0.99		11	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,1,1-Trich	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,1,2,2-Tet	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,1,2-Trich	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,1-Dichlor	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,1-Dichlor	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,2-Dichlor	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,2-Dichlor	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,3-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	1,4-Dichlor	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	2-Butanone	22		22	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	2-Hexanon	22		22	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	4-Methyl-2	22		22	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Acetone	22		22	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Benzene	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Bromodich	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Bromoform	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Bromometh	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Carbon dis	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Carbon tetr	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Chlorobenz	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Chloroetha	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Chloroform	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Chlorometh	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	cis-1,3-Dic	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Dibromoch	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Ethylbenze	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Methylene	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Styrene	5.4		5.4	ug/kg	U	UJ	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Tetrachlorc	0.94		5.4	ug/kg	J	J	I06; G01	1	Y	
SIW-SS-CDUP-001	8260B	REA	Toluene	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	trans-1,3-D	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Trichloroet	5.4		5.4	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Vinyl chlori	11		11	ug/kg	U	UJ	I06	1	Y	
SIW-SS-CDUP-001	8260B	REA	Xylenes (to	1.1		11	ug/kg	J	J	I06; G01	1	Y	
LABQC	8260B	SUR	Surrogate-	49.2			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	51			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	51.9			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	54.9			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	54.2			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	55			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	48			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	50.8			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	48.9			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	56.2			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	53			ug/kg				1	Y	
LABQC	8260B	SUR	Surrogate-	55			ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8260B	SUR	Surrogate-	50			ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8260B	SUR	Surrogate-	67			ug/kg	*			1	Y	
SIW-SS-041PC-0.0-2.0	8260B	SUR	Surrogate-	45			ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8260B	SUR	Surrogate-	53			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8260B	SUR	Surrogate-	57			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8260B	SUR	Surrogate-	100			ug/kg	*			1	Y	
SIW-SS-042PC-0.0-2.0	8260B	SUR	Surrogate-	51			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8260B	SUR	Surrogate-	70			ug/kg	*			1	Y	
SIW-SS-043PC-0.0-2.0	8260B	SUR	Surrogate-	110			ug/kg	*			1	Y	
SIW-SS-043PC-0.0-2.0	8260B	SUR	Surrogate-	160			ug/kg	*			1	Y	
SIW-SS-043PC-0.0-2.0	8260B	SUR	Surrogate-	94			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8260B	SUR	Surrogate-	140			ug/kg	*			1	Y	
SIW-SS-044PC-0.0-2.0	8260B	SUR	Surrogate-	84			ug/kg	*			1	Y	
SIW-SS-044PC-0.0-2.0	8260B	SUR	Surrogate-	100			ug/kg	*			1	Y	
SIW-SS-044PC-0.0-2.0	8260B	SUR	Surrogate-	66			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8260B	SUR	Surrogate-	88			ug/kg	*			1	Y	
SIW-SS-CDUP-001	8260B	SUR	Surrogate-	79			ug/kg				1	Y	
SIW-SS-CDUP-001	8260B	SUR	Surrogate-	99			ug/kg	*			1	Y	
SIW-SS-CDUP-001	8260B	SUR	Surrogate-	67			ug/kg				1	Y	
SIW-SS-CDUP-001	8260B	SUR	Surrogate-	94			ug/kg	*			1	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
LABQC	8270C	BLK	1,2,4-Trich	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	1,2-Dichlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	1,3-Dichlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	1,4-Dichlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4,5-Trich	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4,6-Trich	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4-Dichlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4-Dimeth	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4-Dinitrop	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,4-Dinitrot	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2,6-Dinitrot	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Chlorona	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Chloroph	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Methylna	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Methylph	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Nitroanili	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	2-Nitrophe	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	3,3'-Dichlo	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	3-Methylph	660		660	ug/kg	U			1	Y	
LABQC	8270C	BLK	3-Nitroanili	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	4,6-Dinitro-	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Bromoph	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Chloro-3-	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Chloroan	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Chloroph	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Nitroanili	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	4-Nitrophe	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	Acenaphthe	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Acenaphthy	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Aniline	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Anthracene	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Azobenzen	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzidine	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzo(a)ar	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzo(a)py	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzo(b)flu	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzo(ghi)	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzo(k)flu	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzoic ac	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	Benzyl alco	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	bis(2-Chlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	bis(2-Chlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	bis(2-Chlor	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	bis(2-Ethyll	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Butyl benzy	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Carbazole	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Chrysene	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Dibenz(a,h	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Dibenzofur	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Diethyl phtl	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Dimethyl pl	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Di-n-butyl p	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Di-n-octyl p	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Fluoranthe	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Fluorene	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Hexachlorc	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Hexachlorc	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Hexachlorc	1600		1600	ug/kg	U			1	Y	
LABQC	8270C	BLK	Hexachlorc	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Indeno(1,2	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Isophorone	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Naphthaler	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Nitrobenze	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	N-Nitrosod	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	N-Nitrosod	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Pentachlor	660		660	ug/kg	U			1	Y	
LABQC	8270C	BLK	Phenanthre	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Phenol	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Pyrene	330		330	ug/kg	U			1	Y	
LABQC	8270C	BLK	Pyridine	660		660	ug/kg	U			1	Y	
LABQC	8270C	LCS	1,2,4-Trich	77			%				1	Y	
LABQC	8270C	LCS	1,2-Dichlor	72			%				1	Y	
LABQC	8270C	LCS	1,3-Dichlor	70			%				1	Y	
LABQC	8270C	LCS	1,4-Dichlor	69			%				1	Y	
LABQC	8270C	LCS	2,4,5-Trich	70			%				1	Y	
LABQC	8270C	LCS	2,4,6-Trich	72			%				1	Y	
LABQC	8270C	LCS	2,4-Dichlor	69			%				1	Y	
LABQC	8270C	LCS	2,4-Dimeth	71			%				1	Y	

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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
LABQC	8270C	LCS	2,4-Dinitrop	45			%				1	Y	
LABQC	8270C	LCS	2,4-Dinitrot	79			%				1	Y	
LABQC	8270C	LCS	2,6-Dinitrot	77			%				1	Y	
LABQC	8270C	LCS	2-Chlorona	72			%				1	Y	
LABQC	8270C	LCS	2-Chloroph	71			%				1	Y	
LABQC	8270C	LCS	2-Methylna	69			%				1	Y	
LABQC	8270C	LCS	2-Methylph	69			%				1	Y	
LABQC	8270C	LCS	2-Nitroanili	80			%				1	Y	
LABQC	8270C	LCS	2-Nitrophe	73			%				1	Y	
LABQC	8270C	LCS	3,3'-Dichlor	67			%				1	Y	
LABQC	8270C	LCS	3-Methylph	77			%				1	Y	
LABQC	8270C	LCS	3-Nitroanili	70			%				1	Y	
LABQC	8270C	LCS	4,6-Dinitro-	66			%				1	Y	
LABQC	8270C	LCS	4-Bromoph	78			%				1	Y	
LABQC	8270C	LCS	4-Chloro-3-	71			%				1	Y	
LABQC	8270C	LCS	4-Chloroan	52			%				1	Y	
LABQC	8270C	LCS	4-Chloroph	74			%				1	Y	
LABQC	8270C	LCS	4-Nitroanili	76			%				1	Y	
LABQC	8270C	LCS	4-Nitrophe	84			%				1	Y	
LABQC	8270C	LCS	Acenaphthe	74			%				1	Y	
LABQC	8270C	LCS	Acenaphthy	74			%				1	Y	
LABQC	8270C	LCS	Anthracene	76			%				1	Y	
LABQC	8270C	LCS	Benzo(a)ar	82			%				1	Y	
LABQC	8270C	LCS	Benzo(a)py	79			%				1	Y	
LABQC	8270C	LCS	Benzo(b)flu	78			%				1	Y	
LABQC	8270C	LCS	Benzo(ghi)p	101			%				1	Y	
LABQC	8270C	LCS	Benzo(k)flu	83			%				1	Y	
LABQC	8270C	LCS	bis(2-Chlor	69			%				1	Y	
LABQC	8270C	LCS	bis(2-Chlor	69			%				1	Y	
LABQC	8270C	LCS	bis(2-Chlor	70			%				1	Y	
LABQC	8270C	LCS	bis(2-Ethyll	82			%				1	Y	
LABQC	8270C	LCS	Butyl benzy	82			%				1	Y	
LABQC	8270C	LCS	Carbazole	75			%				1	Y	
LABQC	8270C	LCS	Chrysene	81			%				1	Y	
LABQC	8270C	LCS	Dibenz(a,h	99			%				1	Y	
LABQC	8270C	LCS	Dibenzofur	71			%				1	Y	
LABQC	8270C	LCS	Diethyl phtl	74			%				1	Y	
LABQC	8270C	LCS	Dimethyl pl	73			%				1	Y	
LABQC	8270C	LCS	Di-n-butyl p	76			%				1	Y	
LABQC	8270C	LCS	Di-n-octyl p	82			%				1	Y	
LABQC	8270C	LCS	Fluoranthe	79			%				1	Y	
LABQC	8270C	LCS	Fluorene	76			%				1	Y	
LABQC	8270C	LCS	Hexachlorc	81			%				1	Y	
LABQC	8270C	LCS	Hexachlorc	77			%				1	Y	
LABQC	8270C	LCS	Hexachlorc	90			%				1	Y	
LABQC	8270C	LCS	Hexachlorc	74			%				1	Y	
LABQC	8270C	LCS	Indeno(1,2	104			%				1	Y	
LABQC	8270C	LCS	Isophorone	76			%				1	Y	
LABQC	8270C	LCS	Naphthaler	72			%				1	Y	
LABQC	8270C	LCS	Nitrobenze	72			%				1	Y	
LABQC	8270C	LCS	N-Nitrosod	75			%				1	Y	
LABQC	8270C	LCS	N-Nitrosod	94			%				1	Y	
LABQC	8270C	LCS	Pentachlor	63			%				1	Y	
LABQC	8270C	LCS	Phenanthre	76			%				1	Y	
LABQC	8270C	LCS	Phenol	66			%				1	Y	
LABQC	8270C	LCS	Pyrene	80			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	1,2,4-Trich	77			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	1,2-Dichlor	69			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	1,3-Dichlor	66			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	1,4-Dichlor	65			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4,5-Trich	80			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4,6-Trich	79			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4-Dichlor	77			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4-Dimeth	77			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4-Dinitrop	20			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,4-Dinitrot	91			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2,6-Dinitrot	86			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Chlorona	77			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Chloroph	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Methylna	75			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Methylph	76			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Nitroanili	92			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	2-Nitrophe	76			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	3,3'-Dichlor	13			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	3-Methylph	87			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	3-Nitroanili	59			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4,6-Dinitro-	29			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Bromoph	79			%				1	Y	

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Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Chloro-3-	82			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Chloroan	43			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Chloroph	82			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Nitroanili	58			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	4-Nitrophe	104			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Acenaphthe	83			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Acenaphthy	96			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Anthracene	86			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Benzo(a)ar	95			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Benzo(a)py	106			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Benzo(b)flu	119			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Benzo(ghi)	104			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Benzo(k)flu	94			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	bis(2-Chlor	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	bis(2-Chlor	69			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	bis(2-Chlor	70			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	bis(2-Ethyll	68			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Butyl benzy	73			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Carbazole	81			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Chrysene	94			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Dibenz(a,h	83			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Dibenzofur	79			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Diethyl pht	85			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Dimethyl pl	82			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Di-n-butyl p	82			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Di-n-octyl p	86			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Fluoranthe	105			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Fluorene	85			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Hexachlorc	83			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Hexachlorc	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Hexachlorc	42			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Hexachlorc	68			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Indeno(1,2	108			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Isophorone	83			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Naphthaler	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Nitrobenze	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	N-Nitrosod	84			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	N-Nitrosod	93			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Pentachlor	68			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Phenanthre	85			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Phenol	72			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MS	Pyrene	74			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	1,2,4-Trich	0.27			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	1,2-Dichlor	0.56			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	1,3-Dichlor	0.63			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	1,4-Dichlor	1.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4,5-Trich	0.41			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4,6-Trich	0.07			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4-Dichlor	1.4			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4-Dimeth	1.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4-Dinitrop	24			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,4-Dinitrot	3			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2,6-Dinitrot	2.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Chlorona	1.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Chloroph	1.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Methylna	0.55			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Methylph	2.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Nitroanili	1.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	2-Nitrophe	2.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	3,3'-Dichlor	18			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	3-Methylph	3			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	3-Nitroanili	8.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4,6-Dinitro-	39			%	a p			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Bromoph	0.56			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Chloro-3-	1.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Chloroan	9.9			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Chloroph	1.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Nitroanili	5.9			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	4-Nitrophe	3.5			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Acenaphthe	1.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Acenaphthy	6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Anthracene	6.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Benzo(a)ar	6.4			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Benzo(a)py	9.9			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Benzo(b)flu	4.9			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Benzo(ghi)	21			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Benzo(k)flu	8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	bis(2-Chlor	0.28			%				1	Y	

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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-043PC-0.0-2.0	8270C	MSD	bis(2-Chlor	1.9			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	bis(2-Chlor	2.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	bis(2-Ethyl	5.7			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Butyl benzy	4.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Carbazole	1.4			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Chrysene	7.4			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Dibenz(a,h	11			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Dibenzofur	2.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Diethyl pht	0.14			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Dimethyl pl	1.1			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Di-n-butyl p	0.94			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Di-n-octyl p	0.7			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Fluoranthe	8.2			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Fluorene	1.8			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Hexachlorc	2.6			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Hexachlorc	1			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Hexachlorc	84			%	a p			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Hexachlorc	4.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Indeno(1,2	20			%	a			1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Isophorone	0.97			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Naphthaler	1.1			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Nitrobenze	1.1			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	N-Nitrosod	2.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	N-Nitrosod	1.2			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Pentachlor	1.9			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Phenanthre	1.3			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Phenol	0.7			%				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	MSD	Pyrene	14			%				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REA	Anthracene	7700		1800	ug/kg	D	J	G01	5	Y	
SIW-SS-CDUP-001	8270C	REA	Anthracene	36000		3600	ug/kg	D	J	G04	10	Y	
SIW-SS-CDUP-001	8270C	REA	Carbazole	13000		3600	ug/kg	D	J	G04	10	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	1,2,4-Trich	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	1,2-Dichlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	1,3-Dichlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	1,4-Dichlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4,5-Trich	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4,6-Trich	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4-Dichlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4-Dimeth	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4-Dinitrop	1800		1800	ug/kg	U	U	H04,H02,P	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,4-Dinitrot	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2,6-Dinitrot	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Chlorona	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Chloroph	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Methylna	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Methylph	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Nitroanili	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	2-Nitrophe	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	3,3'-Dichlor	1800		1800	ug/kg	U	UJ	H02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	3-Methylph	750		750	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	3-Nitroanili	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4,6-Dinitro-	1800		1800	ug/kg	U	UJ	H01; H04	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Bromoph	380		380	ug/kg	U	U	P02,H02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Chloro-3-	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Chloroan	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Chloroph	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Nitroanili	1800		1800	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	4-Nitrophe	1800		1800	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Acenaphth	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Acenaphth	150		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Aniline	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Anthracene	160		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Azobenzen	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzidine	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzo(a)ar	260		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzo(a)py	400		380	ug/kg		=	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzo(b)flu	540		380	ug/kg		J	H01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzo(ghi)	230		380	ug/kg	J	J	H01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzo(k)flu	180		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzoic ac	1800		1800	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Benzyl alc	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	bis(2-Chlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	bis(2-Chlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	bis(2-Chlor	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	bis(2-Ethyl	380		380	ug/kg	U	U	H02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Butyl benzy	380		380	ug/kg	U	U	H02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Carbazole	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Chrysene	310		380	ug/kg	J	J	G01	1	Y	

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SIW-SS-041PC-0.0-2.0	8270C	REG	Dibenz(a,h	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Dibenzofur	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Diethyl pht	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Dimethyl p	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Di-n-butyl p	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Di-n-octyl p	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Fluoranthe	300		380	ug/kg	J	J	H02; H04	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Fluorene	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Hexachlorc	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Hexachlorc	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Hexachlorc	1800		1800	ug/kg	U	UJ	H01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Hexachlorc	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Indeno(1,2	250		380	ug/kg	J	J	H01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Isophorone	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Naphthaler	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Nitrobenze	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	N-Nitrosod	380		380	ug/kg	U	U	P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	N-Nitrosod	380		380	ug/kg	U	U		1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Pentachlor	750		750	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Phenanthre	97		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Phenol	380		380	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Pyrene	200		380	ug/kg	J	J	G01	1	Y	
SIW-SS-041PC-0.0-2.0	8270C	REG	Pyridine	750		750	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	1,2,4-Trich	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	1,2-Dichlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	1,3-Dichlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	1,4-Dichlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4,5-Trich	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4,6-Trich	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4-Dichlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4-Dimeth	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4-Dinitrop	1700		1700	ug/kg	U	U	H04,H02,P	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,4-Dinitrot	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2,6-Dinitrot	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Chlorona	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Chloroph	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Methylna	110		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Methylph	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Nitroanili	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	2-Nitrophe	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	3,3'-Dichlo	1700		1700	ug/kg	U	UJ	H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	3-Methylph	680		680	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	3-Nitroanili	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4,6-Dinitro-	1700		1700	ug/kg	U	UJ	H04,H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Bromoph	340		340	ug/kg	U	U	P02,H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Chloro-3-	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Chloroan	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Chloroph	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Nitroanili	1700		1700	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	4-Nitrophe	1700		1700	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Acenaphthe	130		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Acenaphthy	350		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Aniline	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Anthracene	830		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Azobenzen	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzidine	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzo(a)ar	1800		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzo(a)py	1200		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzo(b)flu	1900		340	ug/kg		J	H01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzo(ghi)	690		340	ug/kg		J	H01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzo(k)flu	720		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzoic ac	170		170	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Benzyl alc	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	bis(2-Chlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	bis(2-Chlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	bis(2-Chlor	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	bis(2-Ethyl	340		340	ug/kg	U	U	H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Butyl benzy	340		340	ug/kg	U	U	H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Carbazole	330		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Chrysene	1800		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Dibenz(a,h	230		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Dibenzofur	290		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Diethyl pht	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Dimethyl p	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Di-n-butyl p	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Di-n-octyl p	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Fluoranthe	4600		340	ug/kg		J	H02, H04	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Fluorene	490		340	ug/kg		=	G01	1	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-042PC-0.0-2.0	8270C	REG	Hexachlorc	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Hexachlorc	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Hexachlorc	1700		1700	ug/kg	U	UJ	H04,H02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Hexachlorc	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Indeno(1,2	790		340	ug/kg		=	H01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Isophorone	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Naphthaler	99		340	ug/kg	J	J	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Nitrobenze	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	N-Nitrosod	340		340	ug/kg	U	U	P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	N-Nitrosod	340		340	ug/kg	U	U		1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Pentachlor	680		680	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Phenanthre	3600		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Phenol	340		340	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Pyrene	3200		340	ug/kg		=	G01	1	Y	
SIW-SS-042PC-0.0-2.0	8270C	REG	Pyridine	680		680	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	1,2,4-Trich	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	1,2-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	1,3-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	1,4-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4,5-Trich	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4,6-Trich	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4-Dimeth	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4-Dinitrop	1700		1700	ug/kg	U	U	H04,H02,P	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,4-Dinitrot	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2,6-Dinitrot	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Chlorona	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Chloroph	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Methylna	51		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Methylph	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Nitroanili	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	2-Nitrophe	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	3,3'-Dichlor	1700		1700	ug/kg	U	UJ	H02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	3-Methylph	720		720	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	3-Nitroanili	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4,6-Dinitro-	1700		1700	ug/kg	U	UJ	H02, H04	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Bromoph	360		360	ug/kg	U	U	P02,H02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Chloro-3-	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Chloroan	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Chloroph	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Nitroanili	1700		1700	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	4-Nitrophe	1700		1700	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Acenaphth	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Acenaphthy	650		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Aniline	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Anthracene	610		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Azobenzen	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzidine	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzo(a)ar	1000		360	ug/kg		=	H01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzo(a)py	1300		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzo(b)flu	2000		360	ug/kg		J	H01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzo(ghi)	1400		360	ug/kg		J	H01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzo(k)flu	720		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzoic ac	1700		1700	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Benzyl alc	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	bis(2-Ethyl	390		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Butyl benzy	66		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Carbazole	160		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Chrysene	1200		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Dibenz(a,h	270		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Dibenzofur	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Diethyl phtl	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Dimethyl pl	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Di-n-butyl p	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Di-n-octyl p	130		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Fluoranthe	1600		360	ug/kg		J	H02; H04	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Fluorene	69		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Hexachlorc	1700		1700	ug/kg	U	UJ	H01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Indeno(1,2	1100		360	ug/kg		=	H01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Isophorone	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Naphthaler	56		360	ug/kg	J	J	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Nitrobenze	360		360	ug/kg	U	U	H02,P02	1	Y	

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Validated by:
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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-043PC-0.0-2.0	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U		1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Pentachlor	720		720	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Phenanthre	580		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Phenol	1300		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Pyrene	1300		360	ug/kg		=	G01	1	Y	
SIW-SS-043PC-0.0-2.0	8270C	REG	Pyridine	720		720	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	1,2,4-Trich	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	1,2-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	1,3-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	1,4-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4,5-Trich	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4,6-Trich	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4-Dichlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4-Dimeth	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4-Dinitro	1700		1700	ug/kg	U	U	H04,H02,P	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,4-Dinitrot	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2,6-Dinitrot	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Chlorona	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Chloroph	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Methylna	170		360	ug/kg	J	J	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Methylph	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Nitroanili	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	2-Nitrophe	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	3,3'-Dichlor	1700		1700	ug/kg	U	UJ	H02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	3-Methylph	720		720	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	3-Nitroanili	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4,6-Dinitro-	1700		1700	ug/kg	U	UJ	H04,H02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Bromoph	360		360	ug/kg	U	U	P02,H02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Chloro-3-	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Chloroan	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Chloroph	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Nitroanili	1700		1700	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	4-Nitrophe	1700		1700	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Acenaphth	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Acenaphth	1800		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Aniline	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Azobenzen	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzidine	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzo(a)ar	3000		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzo(a)py	4300		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzo(b)flu	6100		360	ug/kg		J	H01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzo(ghi)	7200		360	ug/kg		J	H01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzo(k)flu	2100		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzoic ac	1700		1700	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Benzyl alc	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	bis(2-Ethyl	130		360	ug/kg	J	J	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Butyl benzy	360		360	ug/kg	U	U	H02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Carbazole	3800		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Chrysene	4900		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Dibenz(a,h	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Dibenzofur	360		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Diethyl phtl	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Dimethyl pl	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Di-n-butyl p	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Di-n-octyl p	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Fluoranthe	6200		360	ug/kg		J	H02; H04	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Fluorene	480		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Hexachlorc	1700		1700	ug/kg	U	U	H04,H02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Indeno(1,2	5300		360	ug/kg		=	H01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Isophorone	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Naphthaler	230		360	ug/kg	J	J	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Nitrobenze	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U	P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U		1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Pentachlor	720		720	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Phenanthre	4100		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Phenol	360		360	ug/kg	U	U	H02,P02	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Pyrene	4500		360	ug/kg		=	G01	1	Y	
SIW-SS-044PC-0.0-2.0	8270C	REG	Pyridine	720		720	ug/kg	U	U		1	Y	
SIW-SS-CDUP-001	8270C	REG	1,2,4-Trich	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	1,2-Dichlor	360		360	ug/kg	U	U	G02	1	Y	

Verified by: Jessica Mattison 9/30/2011 11:52:59 AM
Validated by:
Peer Reviewed by: Jay Wilkins 10/4/2011 9:33:33 AM

Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-CDUP-001	8270C	REG	1,3-Dichlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	1,4-Dichlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4,5-Trich	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4,6-Trich	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4-Dichlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4-Dimeth	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4-Dinitrop	1700		1700	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,4-Dinitrot	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2,6-Dinitrot	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Chlorona	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Chloroph	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Methylna	130		360	ug/kg	J	J	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Methylph	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Nitroanili	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	2-Nitrophe	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	3,3'-Dichlor	1700		1700	ug/kg	U	UJ	H02	1	Y	
SIW-SS-CDUP-001	8270C	REG	3-Methylph	720		720	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	3-Nitroanili	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4,6-Dinitro-	1700		1700	ug/kg	U	UJ	H02, H04	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Bromoph	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Chloro-3-	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Chloroan	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Chloroph	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Nitroanili	1700		1700	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	4-Nitrophe	1700		1700	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Acenaphth	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Acenaphthy	1300		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Aniline	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Azobenzen	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzidine	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzo(a)ar	1900		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzo(a)py	3000		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzo(b)flu	4000		360	ug/kg		J	H01	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzo(ghi)	4600		360	ug/kg		J	H01	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzo(k)flu	1400		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzoic ac	1700		1700	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Benzyl alc	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	bis(2-Chlor	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	bis(2-Ethyl	94		360	ug/kg	J	J	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Butyl benzy	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Chrysene	4600		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Dibenz(a,h	920		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Dibenzofur	290		360	ug/kg	J	J	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Diethyl pht	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Dimethyl pl	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Di-n-butyl p	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Di-n-octyl p	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Fluoranthe	2800		360	ug/kg		J	H02; H04	1	Y	
SIW-SS-CDUP-001	8270C	REG	Fluorene	540		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Hexachlorc	1700		1700	ug/kg	U	UJ	H01	1	Y	
SIW-SS-CDUP-001	8270C	REG	Hexachlorc	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Indeno(1,2	3200		360	ug/kg		=	H01	1	Y	
SIW-SS-CDUP-001	8270C	REG	Isophorone	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Naphthaler	210		360	ug/kg	J	J	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Nitrobenze	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	N-Nitrosod	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Pentachlor	720		720	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Phenanthre	2600		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Phenol	360		360	ug/kg	U	U	G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Pyrene	2700		360	ug/kg		=	G01,G02	1	Y	
SIW-SS-CDUP-001	8270C	REG	Pyridine	720		720	ug/kg	U	U	G02	1	Y	
LABQC	8270C	SUR	Surrogate-2	1900			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	2100			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1300			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1240			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1790			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1800			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1300			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1270			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1890			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	2000			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1570			ug/kg				1	Y	
LABQC	8270C	SUR	Surrogate-2	1600			ug/kg				1	Y	

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Sample Id	Method	Type	Analyte	Result	Error	DL	Units	LQ	VQ	RC	Dilution	Use?	Filtered
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	4200		380	ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	2400		380	ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	3300		380	ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	2500		380	ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	3600		380	ug/kg				1	Y	
SIW-SS-041PC-0.0-2.0	8270C	SUR	Surrogate-	2400		380	ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	1600			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	950			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	1500			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	1100			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	1700			ug/kg				1	Y	
SIW-SS-042PC-0.0-2.0	8270C	SUR	Surrogate-	1300			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2100			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2520			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2460			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1400			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1420			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1430			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2030			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2050			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2000			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1450			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1470			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1500			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2240			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2270			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	2100			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1400			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1450			ug/kg				1	Y	
SIW-SS-043PC-0.0-2.0	8270C	SUR	Surrogate-	1300			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1900			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	2700			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1200			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1700			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1900			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	2500			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1800			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1300			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	2700			ug/kg				1	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	2000			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1300			ug/kg				5	Y	
SIW-SS-044PC-0.0-2.0	8270C	SUR	Surrogate-	1800			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	2000			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	1300			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	2100			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	1500			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	2200			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	1600			ug/kg				1	Y	
SIW-SS-CDUP-001	8270C	SUR	Surrogate-	0			ug/kg	DIL *			10	Y	

APPENDIX D

PHOTOGRAPH LOGS

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Staten Island Warehouse

Photographic Documentation

July 2011

View of Bayonne Bridge facing North

View of Bayonne Bridge facing West

View of the Site and Bayonne Bridge facing West

View of the Bayonne Bridge facing Northwest

Preparing equipment during Site setup

Preparing equipment during Site setup

Brush clearing

Brush clearing

Brush clearing

Brush clearing

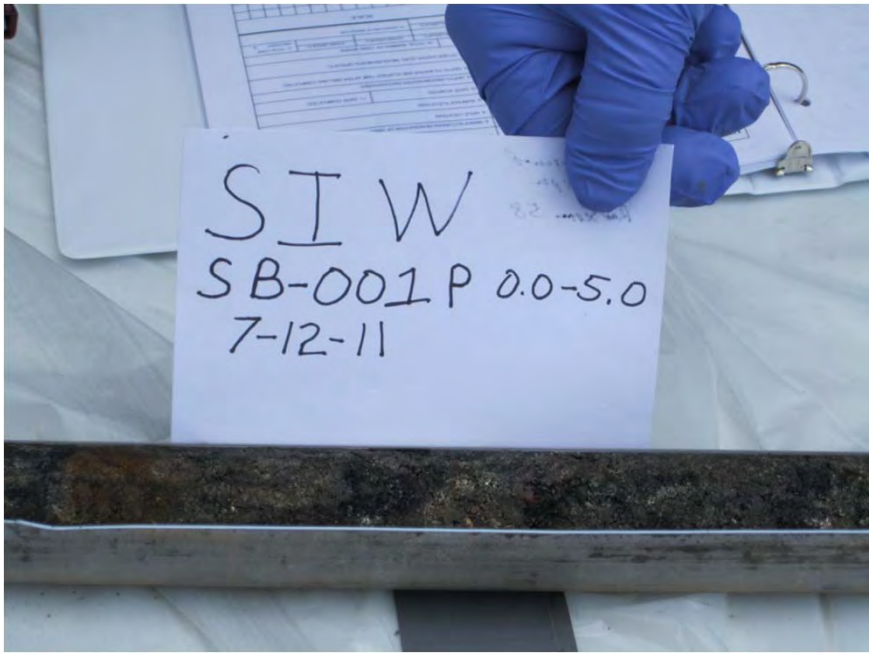
Subsurface sample collection

View of sample logging area

Subsurface sample collection within exclusion zone

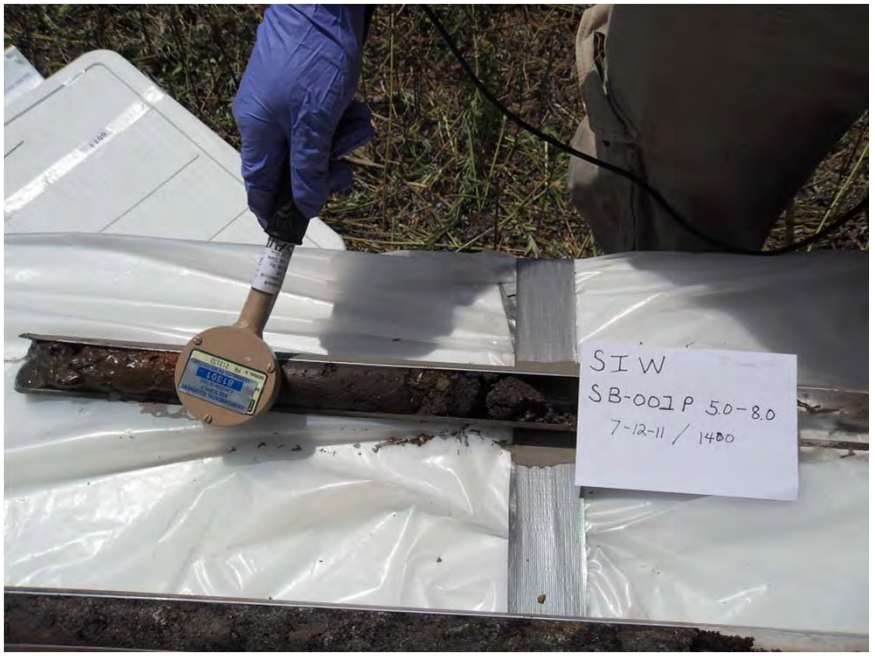
Subsurface sample collection on beach

Subsurface sample collection on beach



Soil core from SB-001

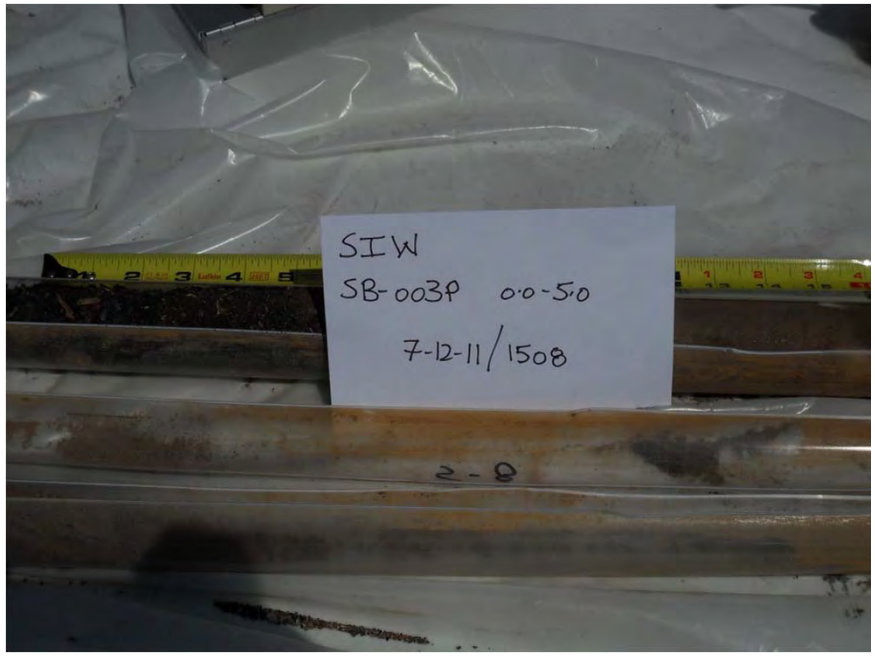
Soil core from SB-001



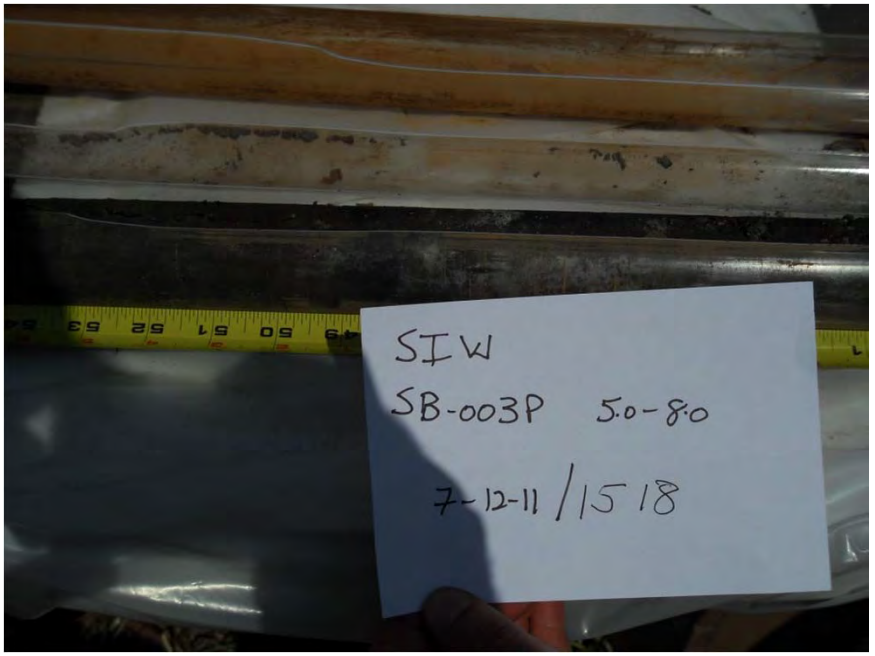
Rad scanning SB-001 soil core

Soil core from SB-001

Soil core from SB-002



Soil core from SB-003



Soil core from SB-003

Soil core from SB-004

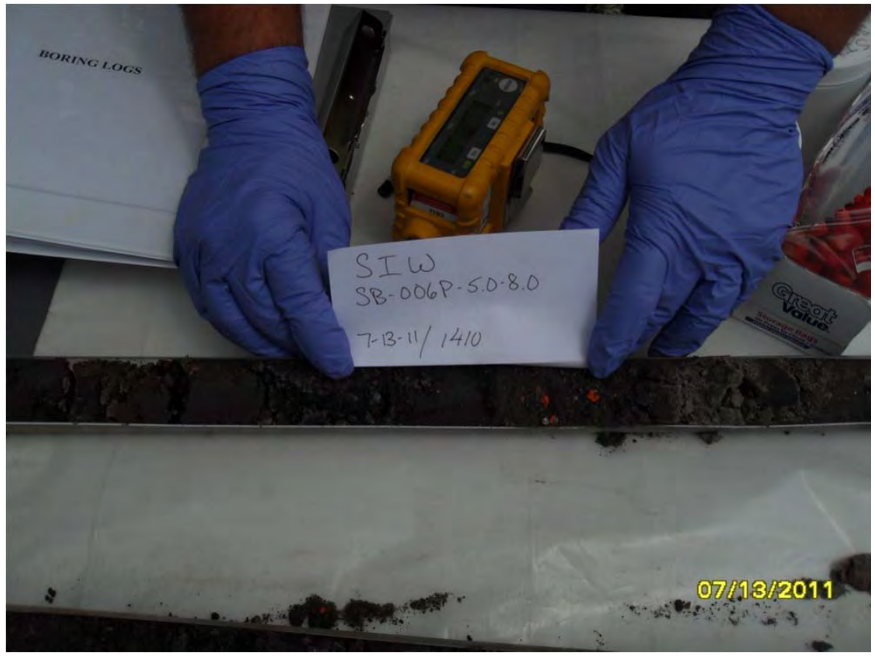
Soil core from SB-004

Soil core from SB-005

Soil core from SB-005

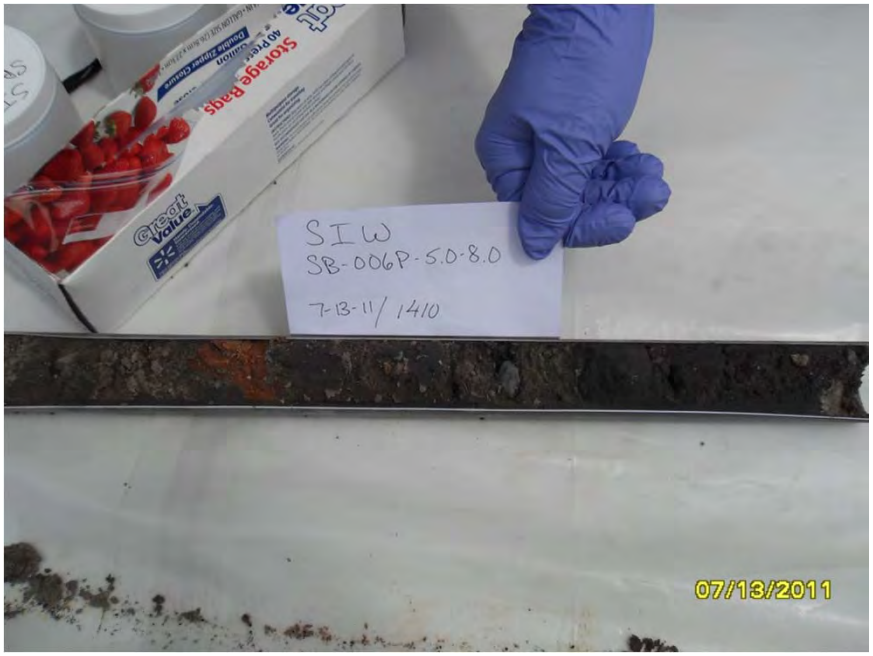
Soil core from SB-006

Soil core from SB-006



Soil core from SB-006

Soil core from SB-006



Soil core from SB-006

Soil core from SB-007

Soil core from SB-007

Soil core from SB-007

Soil core from SB-007

Soil core from SB-008

Soil core from SB-008

Soil core from SB-009

Soil core from SB-009

Soil core from SB-009

Soil core from SB-009

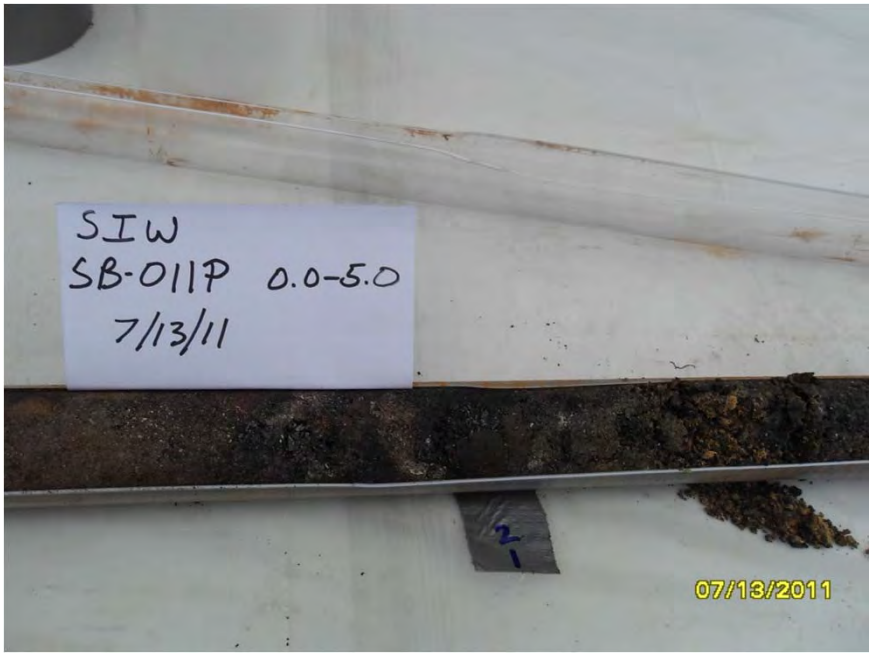
Soil core from SB-010

Soil core from SB-010

Soil core from SB-010

Soil core from SB-010

Soil core from SB-011



Soil core from SB-011

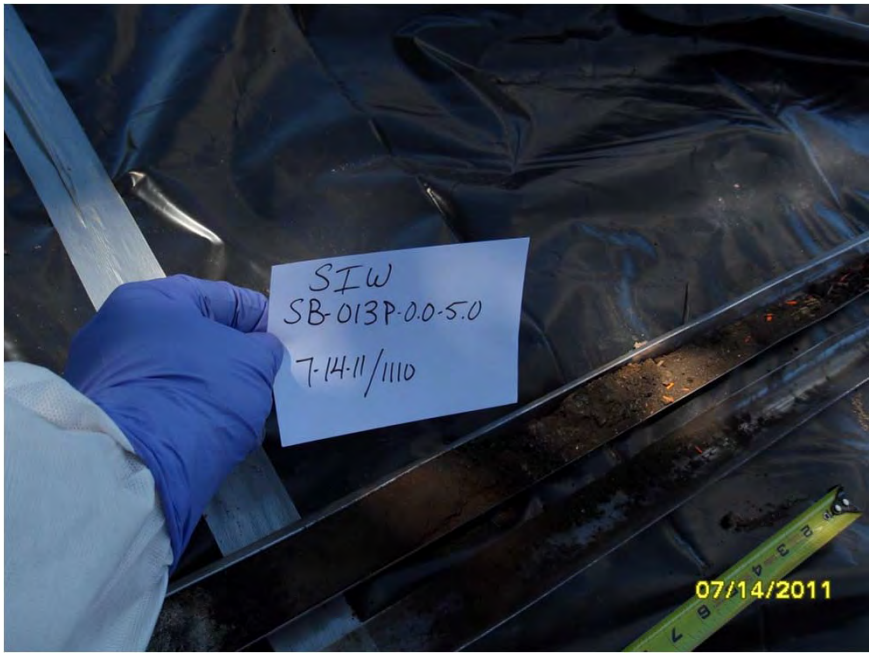
Soil core from SB-011

Soil core from SB-011

Soil core from SB-011

Soil core from SB-012

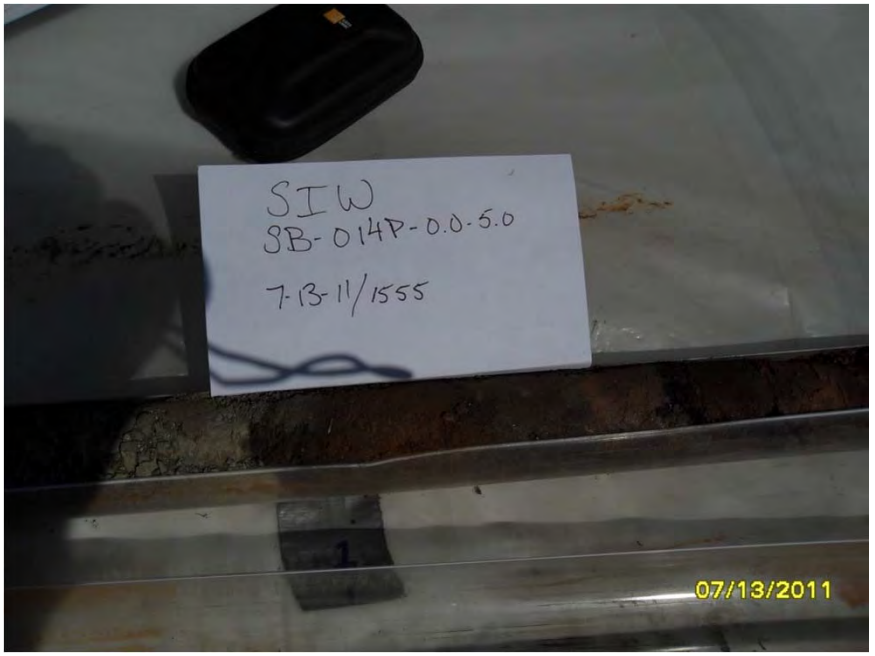
Soil core from SB-012



Soil core from SB-013

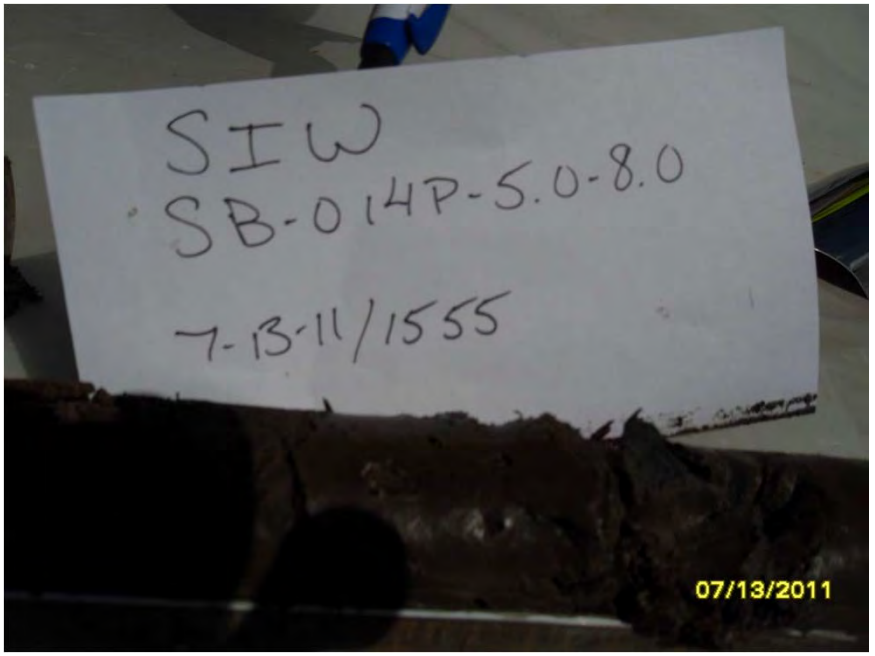
Soil core from SB-013

Soil core from SB-014



Soil core from SB-014

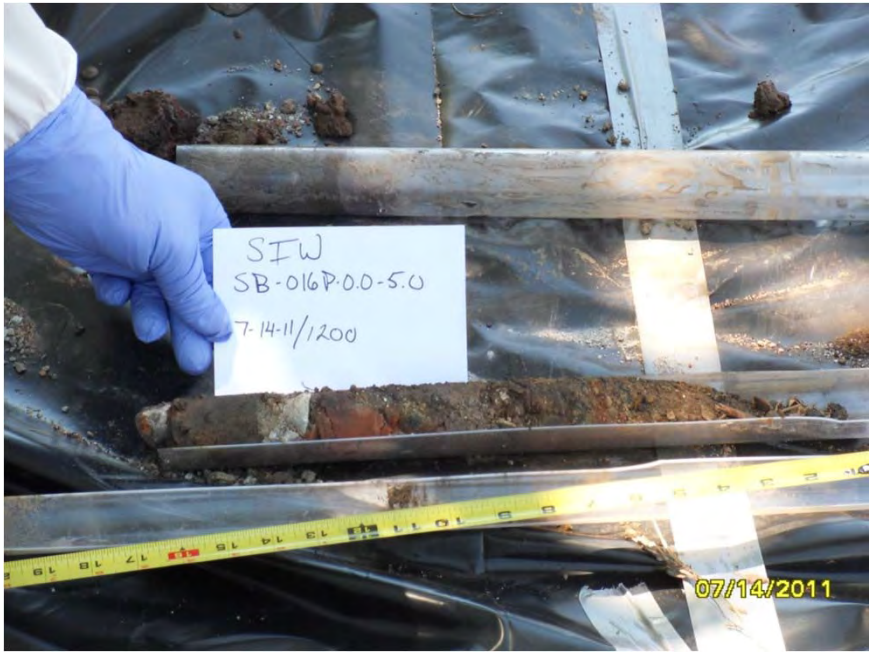
Soil core from SB-014



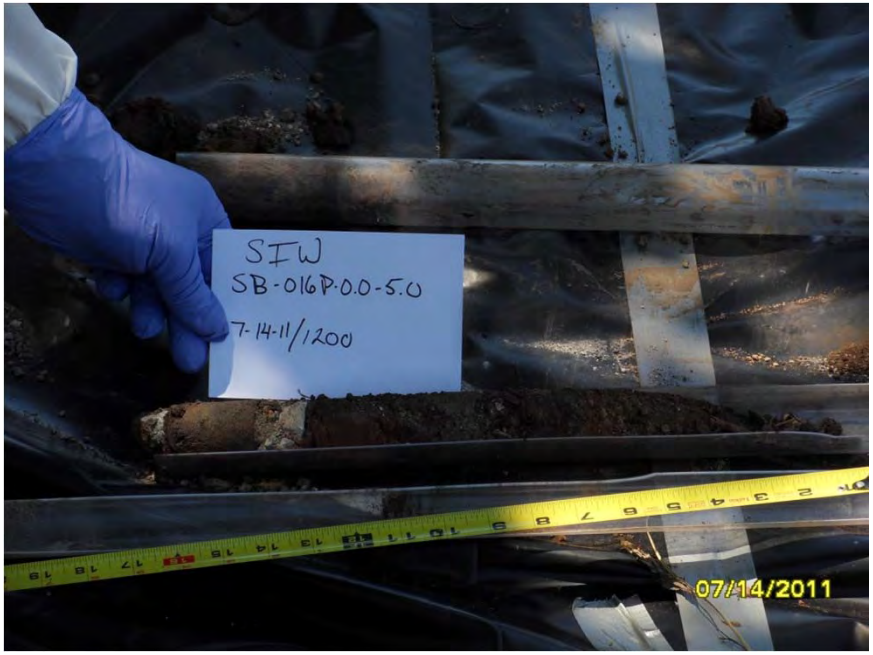
Soil core from SB-014

Soil core from SB-014

Soil core from SB-015



Soil core from SB-016

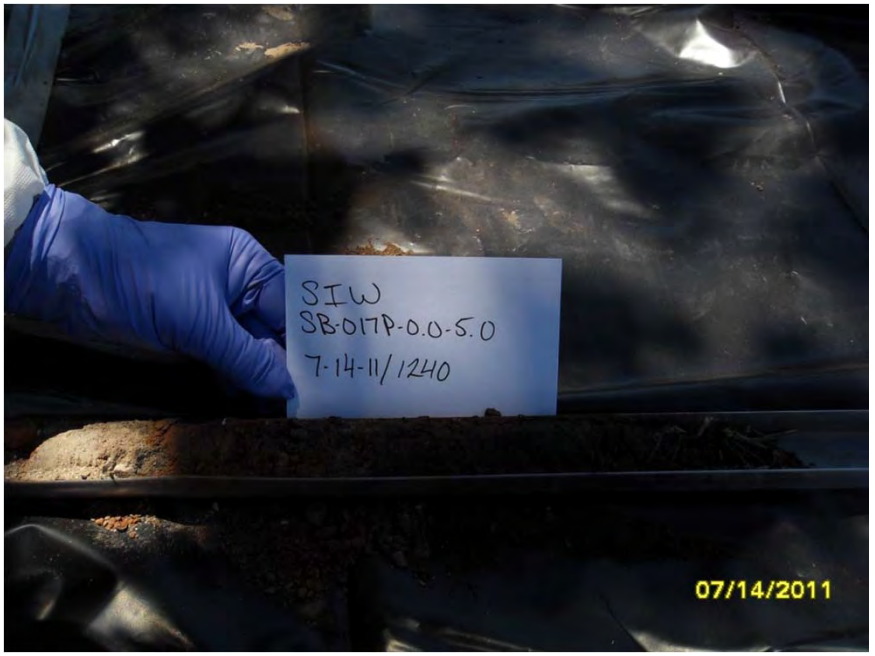


Soil core from SB-016

Soil core from SB-016

Soil core from SB-016

Soil core from SB-017

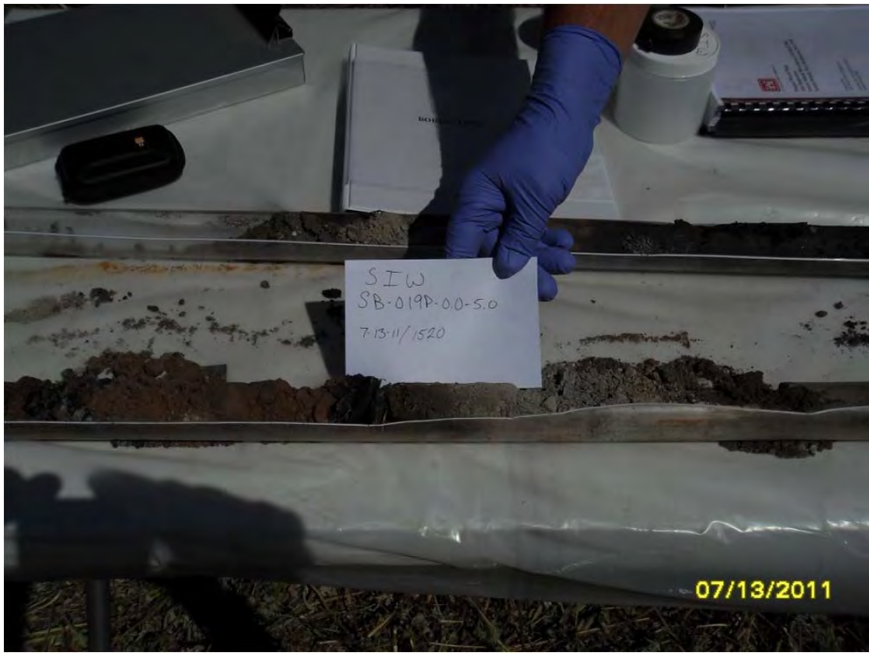


Soil core from SB-017

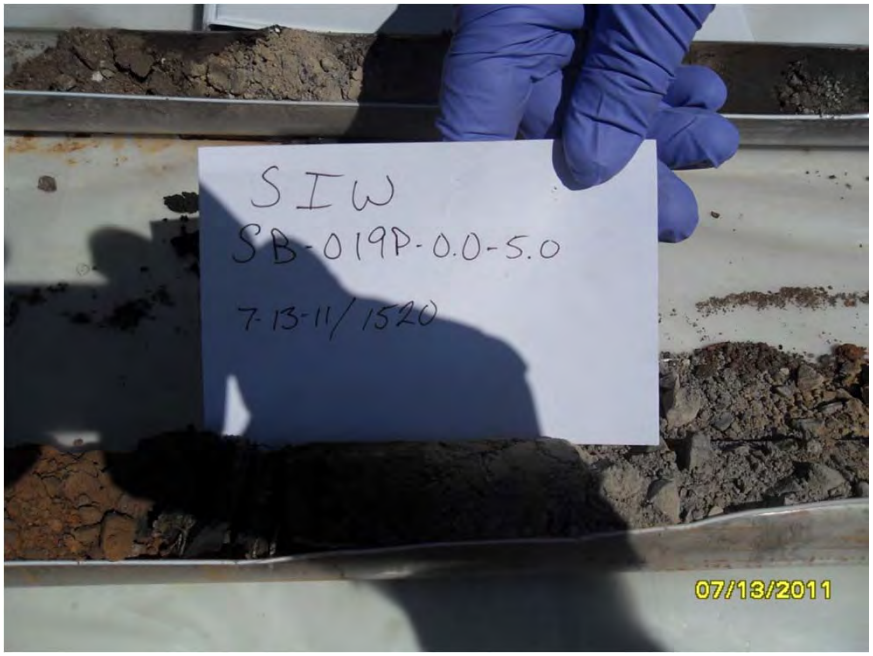
Soil core from SB-018

Soil core from SB-018

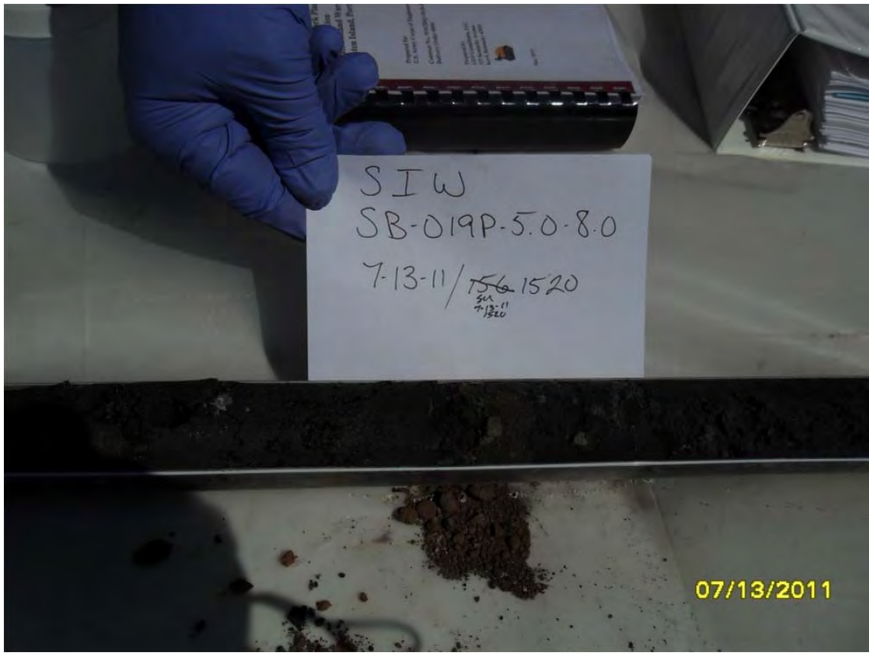
Soil core from SB-019



Soil core from SB-019



Soil core from SB-019



Soil core from SB-019

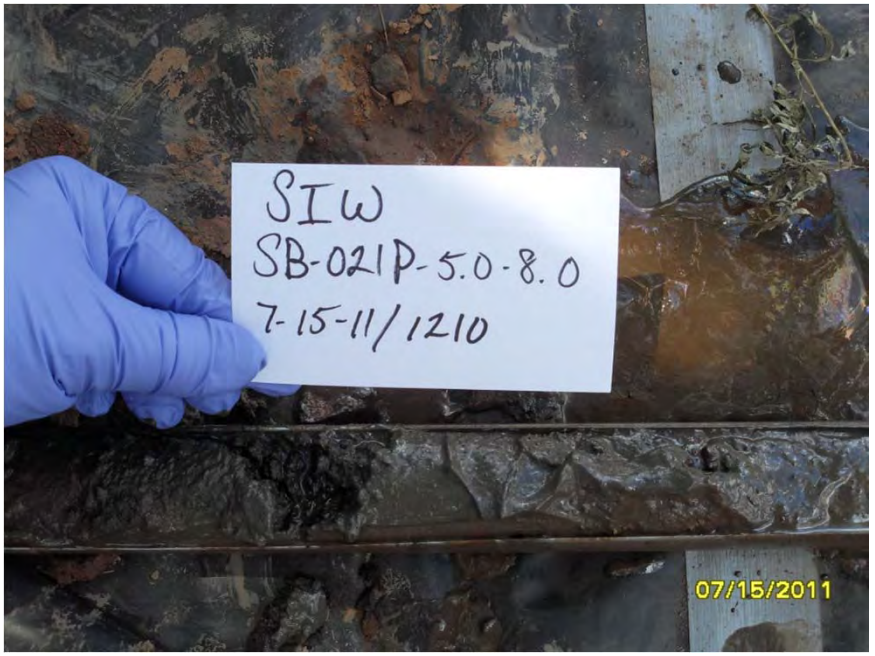
Soil core from SB-019

Soil core from SB-021

Soil core from SB-021

Soil core from SB-021

Soil core from SB-021



Soil core from SB-021

Soil core from SB-022

Soil core from SB-022

Soil core from SB-023

Soil core from SB-023

Soil core from SB-024

Soil core from SB-025

Soil core from SB-025

Soil core from SB-026

Soil core from SB-026

Soil core from SB-026

View of DPT rig setup

Surface soil sample collection

Surface soil sample collection

View of test pit excavation

View of test pit excavation

View of test pit excavation

View of test pit excavation

View of test pit excavation

View of test pit soil and fill

View of test pit soil and fill

View of Test Pit TP-01

View of Test Pit TP-01

View of Test Pit TP-01

View of Soil and Debris From Test Pit TP-01

Typical view of test pit

Soil and debris removed from Test Pit TP-02

Soil and debris removed from Test Pit TP-02

View of fill from Test Pit TP-02

View of Test Pit TP-02

View of Test Pit TP-02

View of Test Pit TP-02 material

View of Test Pit TP-02

View of Test Pit TP-02

View of Test Pit excavation

View of Test Pit TP-03

View of Test Pit TP-03

TP-03 digging operations

Test Pit TP-03

Test Pit TP-03

Test Pit TP-03

Test Pit TP-03

Soil removed from Test Pit TP-04

Soil removed from Test Pit TP-04

APPENDIX E

LABORATORY DATA PACKAGES

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APPENDIX F

ELECTRONIC DATA DELIVERABLES

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APPENDIX G

GIS DATA

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APPENDIX H

RADIOLOGICAL SCAN DATA SHEETS

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Occupational Air Sample Report

Date: 7/11/2011	Sample ID: BZ-071111-01		HSWP#: SI-11-001.0
Alpha DAC value: 8.00E-11 µCi/ml (H)		Beta DAC value: 8.00E-11 µCi/ml (H)	
General Area: ☐	Boundary: ☐	Breathing Zone: ☑	
Site: Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha	
Location: Staten Island Warehouse FUSRAP Site		Sampled By: David Lawson	
Activity Performed: Grass cutting & brush clearing			
Wearer (if applicable): Barry Kinsall			
Monitor Workers: Brad Gough and Sam Martin			
Pump Model:	S/N: 691427	Calibration Due Date:	11/17/2011
Flow Meter: SM-6	S/N: N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/11/11 11:45			
	Stop	7/11/11 17:00		Start	4
				Stop	4
	Total minutes	315	Average Flow Rate:		4

Min Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 315 (minutes) = **1.26E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/12/11			07/12/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		0			451		
Sample Count Rate	CPM	0.00	#DIV/0!	#DIV/0!	45.1	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.26E+03	1.26E+03	1.26E+03	1.26E+03	1.26E+03	1.26E+03
Net count Rate (CPM) (B)	CPM	-0.10	#DIV/0!	#DIV/0!	-1.9	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	-0.27	#DIV/0!	#DIV/0!	-6.46	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	-9.7073E-14	#DIV/0!	#DIV/0!	-2.31E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		-0.0012	#DIV/0!	#DIV/0!	-0.03	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/12/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date: 7/12/2011	Sample ID: BZ-071211-01		HSWP#: SI-11-001.0
Alpha DAC value: 8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐	Breathing Zone:	☑
Site: Staten Island Warehouse FUSRAP Site	Radionuclides: Gross Alpha		
Location: Staten Island Warehouse FUSRAP Site	Sampled By: David Lawson		
Activity Performed: Grass cutting & brush clearing			
Wearer (if applicable): Todd Buchanan			
Monitor Workers: Brad Gough and Sam Martin			
Pump Model:	S/N: 691427	Calibration Due Date:	11/17/2011
Flow Meter: SM-6	S/N: N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/12/11 8:40	7/12/11 11:35		
	Stop	7/12/11 11:00	7/12/11 12:45	Start	4
				Stop	4
	Total minutes	210	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 210 (minutes) = **8.40E+02** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/13/11			07/13/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		2			482		
Sample Count Rate	CPM	0.20	#DIV/0!	#DIV/0!	48.2	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	8.40E+02	8.40E+02	8.40E+02	8.40E+02	8.40E+02	8.40E+02
Net count Rate (CPM) (B)	CPM	0.10	#DIV/0!	#DIV/0!	1.2	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.27	#DIV/0!	#DIV/0!	4.08	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	1.45609E-13	#DIV/0!	#DIV/0!	2.189E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0018	#DIV/0!	#DIV/0!	0.03	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/13/11

Reviewed By: [signature] Date: 7/29/11

Occupational Air Sample Report

Date:	7/12/2011	Sample ID:	BZ-071211-02	HSWP#:	SI-11-005.0
Alpha DAC value:	8.00E-11 µCi/ml (H)			Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐			Breathing Zone:	☑
Site:	Staten Island Warehouse FUSRAP Site			Radionuclides:	Gross Alpha
Location:	Staten Island Warehouse FUSRAP Site			Sampled By:	David Lawson
Activity Performed:	Geoprobe Soil Sampling				
Wearer (if applicable):	Brian Sweeney				
Monitor Workers:	David Lawson, Howard Hammel, Brad Gough and Sam Martin				
Pump Model:		S/N:	691398	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/12/11 13:45		Start	4
	Stop	7/12/11 15:45		Stop	4
	Total minutes	120		Average Flow Rate:	4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 120 (minutes) = **4.80E+02** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/13/11			07/13/11		
Count Time		740			740		
Sample Count Time	Minutes	10			10		
Total Count		2			485		
Sample Count Rate	CPM	0.20	#DIV/0!	#DIV/0!	48.5	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	4.80E+02	4.80E+02	4.80E+02	4.80E+02	4.80E+02	4.80E+02
Net count Rate (CPM) (B)	CPM	0.10	#DIV/0!	#DIV/0!	1.5	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.27	#DIV/0!	#DIV/0!	5.10	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	2.54817E-13	#DIV/0!	#DIV/0!	4.787E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0032	#DIV/0!	#DIV/0!	0.06	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/13/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date: 7/13/2011	Sample ID: BZ-071311-01		HSWP#: SI-11-005.0
Alpha DAC value: 8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐	Breathing Zone:	☑
Site: Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha	
Location: Staten Island Warehouse FUSRAP Site		Sampled By: David Lawson	
Activity Performed: Geoprobe Soil Sampling			
Wearer (if applicable): Brian Sweeney			
Monitor Workers: David Lawson, Howard Hammel, Brad Gough and Sam Martin			
Pump Model:	S/N: 691398	Calibration Due Date:	
Flow Meter: SM-6	S/N: N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/13/11 9:55	7/13/11 13:15		
	Stop	7/13/11 12:04	7/13/11 16:17	Start	4
				Stop	4
		Total minutes: 311		Average Flow Rate:	4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 311 (minutes) = **1.24E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/14/11			07/14/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		1			449		
Sample Count Rate	CPM	0.10	#DIV/0!	#DIV/0!	44.9	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.24E+03	1.24E+03	1.24E+03	1.24E+03	1.24E+03	1.24E+03
Net count Rate (CPM) (B)	CPM	0.00	#DIV/0!	#DIV/0!	-2.1	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.00	#DIV/0!	#DIV/0!	-7.14	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	0	#DIV/0!	#DIV/0!	-2.586E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0000	#DIV/0!	#DIV/0!	-0.03	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/14/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date: 7/14/2011	Sample ID: BZ-071411-01		HSWP#: SI-11-003 0
Alpha DAC value: 8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐	Breathing Zone:	☑
Site: Staten Island Warehouse FUSRAP Site	Radionuclides: Gross Alpha		
Location: Staten Island Warehouse FUSRAP Site	Sampled By: David Lawson		
Activity Performed: Hand Auger Soil Sampling			
Wearer (if applicable): Barry Kinsall			
Monitor Workers: Brad Gough and Sam Martin			
Pump Model:	S/N: 691427	Calibration Due Date:	
Flow Meter: SM-6	S/N: N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/14/11 9:20	7/14/11 13:56		
	Stop	7/14/11 12:52	7/14/11 16:55	Start	4
				Stop	4
	Total minutes	391	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 391 (minutes) = **1.56E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/15/11			07/15/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		1			469		
Sample Count Rate	CPM	0.10	#DIV/0!	#DIV/0!	46.9	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03
Net count Rate (CPM) (B)	CPM	0.00	#DIV/0!	#DIV/0!	-0.1	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.00	#DIV/0!	#DIV/0!	-0.34	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	0	#DIV/0!	#DIV/0!	-9.795E-14	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0000	#DIV/0!	#DIV/0!	0.00	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: Date: 7/15/11

Reviewed By: Date: 7/24/11

Occupational Air Sample Report

Date:	7/14/2011	Sample ID:	BZ-071411-02	HSWP#:	SI-11-005.0
Alpha DAC value:	8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)	
General Area: ☐	Boundary: ☐		Breathing Zone: ☑		
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides: Gross Alpha			
Location:	Staten Island Warehouse FUSRAP Site	Sampled By: David Lawson			
Activity Performed:	Geoprobe Soil Sampling				
Wearer (if applicable):	Brian Sweeney				
Monitor Workers:	David Lawson and Howard Hammel				
Pump Model:		S/N: 691398	Calibration Due Date:		
Flow Meter:	SM-6	S/N: N/A	Calibration Due Date:	11/17/2011	

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/14/11 9:20	7/14/11 13:56		
	Stop	7/14/11 12:52	7/14/11 16:55	Start	4
				Stop	4
	Total minutes	391	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 391 (minutes) = **1.56E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/15/11			07/15/11		
Count Time		740			740		
Sample Count Time	Minutes	10			10		
Total Count		3			469		
Sample Count Rate	CPM	0.30	#DIV/0!	#DIV/0!	46.9	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03
Net count Rate (CPM) (B)	CPM	0.20	#DIV/0!	#DIV/0!	-0.1	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.54	#DIV/0!	#DIV/0!	-0.34	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	1.56409E-13	#DIV/0!	#DIV/0!	-9.795E-14	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0020	#DIV/0!	#DIV/0!	0.00	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/15/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date:	7/15/2011	Sample ID:	BZ-071511-01	HSWP#:	SI-11-005.0
Alpha DAC value:	8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)	
General Area: ☐	Boundary: ☐		Breathing Zone: ☑		
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides:	Gross Alpha		
Location:	Staten Island Warehouse FUSRAP Site	Sampled By:	David Lawson		
Activity Performed:	Geoprobe Soil Sampling				
Wearer (if applicable):	Brian Sweeney				
Monitor Workers:	David Lawson and Howard Hammel				
Pump Model:		S/N:	691398	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/15/11 9:15			
	Stop	7/15/11 12:40		Start	4
				Stop	4
	Total minutes	205	Average Flow Rate:		4

Min Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 205 (minutes) = **8.20E+02** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/16/11			07/16/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		1			424		
Sample Count Rate	CPM	0.10	#DIV/0!	#DIV/0!	42.4	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	8.20E+02	8.20E+02	8.20E+02	8.20E+02	8.20E+02	8.20E+02
Net count Rate (CPM) (B)	CPM	0.00	#DIV/0!	#DIV/0!	-4.6	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.00	#DIV/0!	#DIV/0!	-15.64	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	0	#DIV/0!	#DIV/0!	-8.594E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0000	#DIV/0!	#DIV/0!	-0.11	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/16/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date:	7/15/2011	Sample ID:	BZ-071511-02	HSWP#:	SI-11-004.0
Alpha DAC value:	8.00E-11 µCi/ml (H)			Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐			Breathing Zone:	☑
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides:	Gross Alpha		
Location:	Staten Island Warehouse FUSRAP Site	Sampled By:	David Lawson		
Activity Performed:	Hand Auger Soil Sampling				
Wearer (if applicable):	Barry Kinsall				
Monitor Workers:	Brad Gough and Sam Martin				
Pump Model:		S/N:	691427	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/15/11 9:15	7/15/11 16:08		
	Stop	7/15/11 13:00	7/15/11 18:21	Start	4
				Stop	4
	Total minutes	358	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 358 (minutes) = **1.43E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/16/11			07/16/11		
Count Time		740			740		
Sample Count Time	Minutes	10			10		
Total Count		4			502		
Sample Count Rate	CPM	0.40	#DIV/0!	#DIV/0!	50.2	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.43E+03	1.43E+03	1.43E+03	1.43E+03	1.43E+03	1.43E+03
Net count Rate (CPM) (B)	CPM	0.30	#DIV/0!	#DIV/0!	3.2	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.81	#DIV/0!	#DIV/0!	10.88	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	2.5624E-13	#DIV/0!	#DIV/0!	3.423E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0032	#DIV/0!	#DIV/0!	0.04	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/16/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date: 7/16/2011	Sample ID: BZ-071611-01		HSWP#: SI-11-005.0
Alpha DAC value: 8.00E-11 µCi/ml (H)		Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐	Breathing Zone:	☑
Site: Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha	
Location: Staten Island Warehouse FUSRAP Site		Sampled By: David Lawson	
Activity Performed: Excavatoring Test Pits			
Wearer (if applicable): Todd Buchanan			
Monitor Workers: David Lawson and Brad Gough			
Pump Model:	S/N: 691398	Calibration Due Date:	
Flow Meter: SM-6	S/N: N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/16/11 12:00			
	Stop	7/16/11 18:40		Start	4
				Stop	4
	Total minutes	400	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 400 (minutes) = **1.60E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/17/11			07/17/11		
Count Time		730			730		
Sample Count Time	Minutes	10			10		
Total Count		6			453		
Sample Count Rate	CPM	0.60	#DIV/0!	#DIV/0!	45.3	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.60E+03	1.60E+03	1.60E+03	1.60E+03	1.60E+03	1.60E+03
Net count Rate (CPM) (B)	CPM	0.50	#DIV/0!	#DIV/0!	-1.7	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	1.36	#DIV/0!	#DIV/0!	-5.78	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	3.82225E-13	#DIV/0!	#DIV/0!	-1.628E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0048	#DIV/0!	#DIV/0!	-0.02	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/17/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date:	7/16/2011	Sample ID:	BZ-071611-02	HSWP#:	SI-11-004.0
Alpha DAC value:	8.00E-11 µCi/ml (H)			Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐			Breathing Zone:	☑
Site:	Staten Island Warehouse FUSRAP Site			Radionuclides:	Gross Alpha
Location:	Staten Island Warehouse FUSRAP Site			Sampled By:	David Lawson
Activity Performed:	Hand Auger Soil Sampling				
Wearer (if applicable):	Barry Kinsall				
Monitor Workers:	David Lawson, Brad Gough and Sam Martin				
Pump Model:		S/N:	691427	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/16/11 8:06			
	Stop	7/16/11 11:28		Start	4
				Stop	4
	Total minutes	202	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 202 (minutes) = **8.08E+02** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/17/11			07/17/11		
Count Time		740			740		
Sample Count Time	Minutes	10			10		
Total Count		1			468		
Sample Count Rate	CPM	0.10	#DIV/0!	#DIV/0!	46.8	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02	8.08E+02
Net count Rate (CPM) (B)	CPM	0.00	#DIV/0!	#DIV/0!	-0.2	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.00	#DIV/0!	#DIV/0!	-0.68	#DIV/0!	#DIV/0!
Conc =(F) / (2.22E9*(A)) (G)	µCi/ml	0	#DIV/0!	#DIV/0!	-3.792E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0000	#DIV/0!	#DIV/0!	0.00	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/17/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date:	7/17/2011	Sample ID:	BZ-071711-01	HSWP#:	SI-11-004.0
Alpha DAC value:	8.00E-11 µCi/ml (H)			Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐			Breathing Zone:	☑
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides:	Gross Alpha		
Location:	Staten Island Warehouse FUSRAP Site	Sampled By:	David Lawson		
Activity Performed:	Temporay Well Sampling and Removal				
Wearer (if applicable):	Barry Kinsall				
Monitor Workers:	Sam Martin				
Pump Model:		S/N:	691427	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/17/11 8:30	7/17/11 13:15		
	Stop	7/17/11 13:00	7/17/11 15:55	Start	4
				Stop	4
	Total minutes	430	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 430 (minutes) = **1.72E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/17/11			07/17/11		
Count Time		1930			1930		
Sample Count Time	Minutes	10			10		
Total Count		0			457		
Sample Count Rate	CPM	0.00	#DIV/0!	#DIV/0!	45.7	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.72E+03	1.72E+03	1.72E+03	1.72E+03	1.72E+03	1.72E+03
Net count Rate (CPM) (B)	CPM	-0.10	#DIV/0!	#DIV/0!	-1.3	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	-0.27	#DIV/0!	#DIV/0!	-4.42	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	-7.11116E-14	#DIV/0!	#DIV/0!	-1.158E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		-0.0009	#DIV/0!	#DIV/0!	-0.01	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/17/11

Reviewed By: [signature] Date: 7/24/11

Occupational Air Sample Report

Date:	7/17/2011	Sample ID:	BZ-071711-02	HSWP#:	SI-11-004.0
Alpha DAC value:	8.00E-11 µCi/ml (H)			Beta DAC value:	8.00E-11 µCi/ml (H)
General Area: ☐	Boundary: ☐			Breathing Zone:	☑
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides:	Gross Alpha		
Location:	Staten Island Warehouse FUSRAP Site	Sampled By:	David Lawson		
Activity Performed:	Hand Auger Soil Sampling				
Wearer (if applicable):	Todd Buchanan				
Monitor Workers:	David Lawson and Brad Gough				
Pump Model:		S/N:	691398	Calibration Due Date:	
Flow Meter:	SM-6	S/N:	N/A	Calibration Due Date:	11/17/2011

Date & Time		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/17/11 8:30	7/17/11 10:45		
	Stop	7/17/11 10:26	7/17/11 13:00	Start	4
				Stop	4
	Total minutes	251	Average Flow Rate:		4

Min. Occupational Air Sample Volume= 720 L

Sample Volume = 4 (lpm) x 251 (minutes) = **1.00E+03** Liters (A)

Remarks:

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "D"	157320	157821	6/21/2012	6/21/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/17/11			07/17/11		
Count Time		1940			1940		
Sample Count Time	Minutes	10			10		
Total Count		1			411		
Sample Count Rate	CPM	0.10	#DIV/0!	#DIV/0!	41.1	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.00E+03	1.00E+03	1.00E+03	1.00E+03	1.00E+03	1.00E+03
Net count Rate (CPM) (B)	CPM	0.00	#DIV/0!	#DIV/0!	-5.9	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.00	#DIV/0!	#DIV/0!	-20.07	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	0	#DIV/0!	#DIV/0!	-9.003E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0000	#DIV/0!	#DIV/0!	-0.11	#DIV/0!	#DIV/0!
Final Count?		☑	☐	☐	☑	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/17/11

Reviewed By: [signature] Date: 7/24/11

Non - Occupational Air Sample Report

Date:	7/12/2011	Sample ID:	GA-071211-01	RWP#:	SI-11-005.0
Alpha AE value:	4.00E-14 µCi/ml (H)		Beta AE value:	4.00E-14 µCi/ml (H)	
General Area: ☐	Boundary: ☑		Breathing Zone:		
Site:	Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha		
Location:	Property Boundary		Sampled By: David Lawson		
Activity Performed:	Grass cutting, brush clearing and Geoprobe soil sampling.				
Wearer (if applicable):	N/A				
Monitor Workers:	N/A				
Pump Model:	LV-1	S/N:	81283	Calibration Due Date:	5/31/2012
Flow Meter:	Integral on pump	S/N:	N/A	Calibration Due Date:	N/A

Sample Information		Date & Time		Date & Time		Flow Rate (lpm)
	Start	7/12/11 8:35			Start	40
	Stop	7/12/11 16:40			Stop	40
	Total minutes	485		Average Flow Rate:		40

Min Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 485 (minutes) = **1.94E+04** Liters (A)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/12/11			07/12/11		
Count Time		1900			1900		
Sample Count Time	Minutes	100			100		
Total Count		64			3583		
Sample Count Rate	CPM	0.6	#DIV/0!	#DIV/0!	35.8	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.94E+04	1.94E+04	1.94E+04	1.94E+04	1.94E+04	1.94E+04
Net count Rate (CPM) (B)	CPM	0.54	#DIV/0!	#DIV/0!	-11.2	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	1.47	#DIV/0!	#DIV/0!	-37.99	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	3.40456E-14	#DIV/0!	#DIV/0!	-8.821E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.8511	#DIV/0!	#DIV/0!	-22.05	#DIV/0!	#DIV/0!
Final Count?		☒	☐	☐	☒	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/12/11

Reviewed By: [signature] Date: 7/24/11

Non - Occupational Air Sample Report

Date:	7/13/2011	Sample ID:	GA-071311-01	RWP#:	SI-11-005.0
Alpha AE value:	4.00E-14 µCi/ml (H)			Beta AE value:	4.00E-14 µCi/ml (H)
General Area: ☐	Boundary: ☑			Breathing Zone:	
Site:	Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha		
Location:	Property Boundary			Sampled By:	David Lawson
Activity Performed:	Grass cutting, brush clearing and Geoprobe soil sampling.				
Wearer (if applicable):	N/A				
Monitor Workers:	N/A				
Pump Model:	LV-1	S/N:	81283	Calibration Due Date:	5/31/2012
Flow Meter:	Integral on pump	S/N:	N/A	Calibration Due Date:	N/A

Sample Information		Date & Time		Date & Time		Flow Rate (lpm)
	Start	7/13/11 9:00			Start	40
	Stop	7/13/11 16:30			Stop	40
		Total minutes	450		Average Flow Rate:	40

Min. Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 450 (minutes) = **1.80E+04** Liters (**A**)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/13/11			07/13/11		
Count Time		1935			1935		
Sample Count Time	Minutes	100			100		
Total Count		14			3363		
Sample Count Rate	CPM	0.1	#DIV/0!	#DIV/0!	33.6	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	1.80E+04	1.80E+04	1.80E+04	1.80E+04	1.80E+04	1.80E+04
Net count Rate (CPM) (B)	CPM	0.04	#DIV/0!	#DIV/0!	-13.4	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.11	#DIV/0!	#DIV/0!	-45.47	#DIV/0!	#DIV/0!
Conc =(F) / (2.22E9*(A)) (G)	µCi/ml	2.71804E-15	#DIV/0!	#DIV/0!	-1.138E-12	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.0680	#DIV/0!	#DIV/0!	-28.45	#DIV/0!	#DIV/0!
Final Count?		☒	☐	☐	☒	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/13/11

Reviewed By: [signature] Date: 7/29/11

Non - Occupational Air Sample Report

Date:	7/14/2011	Sample ID:	GA-071411-01	RWP#:	SI-11-005.0
Alpha AE value:	4.00E-14 µCi/ml (H)		Beta AE value:	4.00E-14 µCi/ml (H)	
General Area: ☐	Boundary: ☑		Breathing Zone:		
Site:	Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha		
Location:	Property Boundary		Sampled By: David Lawson		
Activity Performed:	Geoprobe soil sampling.				
Wearer (if applicable):	N/A				
Monitor Workers:	N/A				

Pump Model:	LV-1	S/N:	81283	Calibration Due Date:	5/31/2012
Flow Meter:	Integral on pump	S/N:	N/A	Calibration Due Date:	N/A

Sample Information		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/14/11 7:23			
	Stop	7/14/11 17:45		Start	40
				Stop	40
	Total minutes	622	Average Flow Rate:		40

Min. Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 622 (minutes) = **2.49E+04** Liters (A)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/14/11			07/14/11		
Count Time		2000			2000		
Sample Count Time	Minutes	100			100		
Total Count		55			3606		
Sample Count Rate	CPM	0.6	#DIV/0!	#DIV/0!	36.1	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	2.49E+04	2.49E+04	2.49E+04	2.49E+04	2.49E+04	2.49E+04
Net count Rate (CPM) (B)	CPM	0.45	#DIV/0!	#DIV/0!	-10.9	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	1.22	#DIV/0!	#DIV/0!	-37.21	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	2.21223E-14	#DIV/0!	#DIV/0!	-6.736E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.5531	#DIV/0!	#DIV/0!	-16.84	#DIV/0!	#DIV/0!
Final Count?		☒	☐	☐	☒	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/14/11

Reviewed By: [signature] Date: 7/24/11

Non - Occupational Air Sample Report

Date:	7/15/2011	Sample ID:	GA-071511-01	RWP#:	SI-11-005.0
Alpha AE value:	4.00E-14 µCi/ml (H)			Beta AE value:	4.00E-14 µCi/ml (H)
General Area: ☐	Boundary: ☑			Breathing Zone:	
Site: Staten Island Warehouse FUSRAP Site			Radionuclides: Gross Alpha		
Location: Property Boundary				Sampled By: David Lawson	
Activity Performed: Geoprobe soil sampling.					
Wearer (if applicable): N/A					
Monitor Workers: N/A					
Pump Model: LV-1		S/N: 81283		Calibration Due Date:	5/31/2012
Flow Meter: Integral on pump		S/N: N/A		Calibration Due Date:	N/A

Sample Information		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/15/11 7:15		Start	40
	Stop	7/15/11 18:14		Stop	40
	Total minutes	659	Average Flow Rate:		40

Min. Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 659 (minutes) = **2.64E+04** Liters (**A**)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/15/11			07/15/11		
Count Time		2030			2030		
Sample Count Time	Minutes	100			100		
Total Count		13			3512		
Sample Count Rate	CPM	0.1	#DIV/0!	#DIV/0!	35.1	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (**A**)	Liters	2.64E+04	2.64E+04	2.64E+04	2.64E+04	2.64E+04	2.64E+04
Net count Rate (CPM) (**B**)	CPM	0.03	#DIV/0!	#DIV/0!	-11.9	#DIV/0!	#DIV/0!
Counter Efficiency (**C**)		0.372			0.297		
Collection Efficiency (**D**)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (**C**)*(**D**) (**E**)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (**B**) / (**E**) (**F**)	DPM	0.08	#DIV/0!	#DIV/0!	-40.40	#DIV/0!	#DIV/0!
Conc.=(**F**) / (2.22E9*(**A**)) (**G**)	µCi/ml	1.39202E-15	#DIV/0!	#DIV/0!	-6.904E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (**G**)/(**H**)		0.0348	#DIV/0!	#DIV/0!	-17.26	#DIV/0!	#DIV/0!
Final Count?		☒	☐	☐	☒	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/15/11

Reviewed By: [signature] Date: 7/24/11

Non - Occupational Air Sample Report

Date:	7/16/2011	Sample ID:	GA-071611-01	RWP#:	SI-11-005 0
Alpha AE value:	4.00E-14 µCi/ml (H)		Beta AE value:	4.00E-14 µCi/ml (H)	
General Area: ☐	Boundary: ☑		Breathing Zone:		
Site:	Staten Island Warehouse FUSRAP Site		Radionuclides: Gross Alpha		
Location:	Property Boundary		Sampled By: David Lawson		
Activity Performed:	Geoprobe soil sampling.				
Wearer (if applicable):	N/A				
Monitor Workers:	N/A				
Pump Model:	LV-1	S/N:	81283	Calibration Due Date:	5/31/2012
Flow Meter:	Integral on pump	S/N:	N/A	Calibration Due Date:	N/A

Sample Information		Date & Time		Date & Time		Flow Rate (lpm)
	Start	7/16/11 7:30				
	Stop	7/16/11 18:40			Start	40
					Stop	40
		Total minutes	670		Average Flow Rate:	40

Min. Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 670 (minutes) = **2.68E+04** Liters (A)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/16/11			07/16/11		
Count Time		2020			2020		
Sample Count Time	Minutes	100			100		
Total Count		22			3470		
Sample Count Rate	CPM	0.2	#DIV/0!	#DIV/0!	34.7	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (A)	Liters	2.68E+04	2.68E+04	2.68E+04	2.68E+04	2.68E+04	2.68E+04
Net count Rate (CPM) (B)	CPM	0.12	#DIV/0!	#DIV/0!	-12.3	#DIV/0!	#DIV/0!
Counter Efficiency (C)		0.372			0.297		
Collection Efficiency (D)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (C)*(D) (E)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (B) / (E) (F)	DPM	0.33	#DIV/0!	#DIV/0!	-41.83	#DIV/0!	#DIV/0!
Conc.=(F) / (2.22E9*(A)) (G)	µCi/ml	5.47665E-15	#DIV/0!	#DIV/0!	-7.031E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (G)/(H)		0.1369	#DIV/0!	#DIV/0!	-17.58	#DIV/0!	#DIV/0!
Final Count?		☐	☐	☐	☐	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/16/11

Reviewed By: [signature] Date: 7/24/11

Non - Occupational Air Sample Report

Date:	7/17/2011	Sample ID:	GA-071711-01	RWP#:	SI-11-004.0
Alpha AE value:	4.00E-14 µCi/ml (H)		Beta AE value:	4.00E-14 µCi/ml (H)	
General Area: ☐	Boundary: ☑		Breathing Zone:		
Site:	Staten Island Warehouse FUSRAP Site	Radionuclides: Gross Alpha			
Location:	Property Boundary		Sampled By: David Lawson		
Activity Performed:	Soil sampling and test pit sampling.				
Wearer (if applicable):	N/A				
Monitor Workers:	N/A				
Pump Model:	LV-1	S/N:	81283	Calibration Due Date:	5/31/2012
Flow Meter:	Integral on pump	S/N:	N/A	Calibration Due Date:	N/A

Sample Information		Date & Time	Date & Time		Flow Rate (lpm)
	Start	7/17/11 7:00			
	Stop	7/17/11 15:35		Start	40
				Stop	40
	Total minutes	515	Average Flow Rate:		40

Min. Non-Occupational Air Sample Volume= 570 L

Sample Volume = 40 (lpm) x 515 (minutes) = **2.06E+04** Liters (**A**)

Remarks: Collected on the property boundary between the site and the nearest neighbor.

Sent to lab **after** a screen for final count ☐ Sent to lab **without** a screen for final count ☐

Instrument Information	Serial Number		Cal. Due Date		1st Count	2nd Count	3rd Count
Instrument Type	meter	detector	meter	detector			
Ludlum 43-10-1 "A"	147736	150788	5/31/2012	5/31/2012	☐	☐	☐
Ludlum 43-10-1 "B"	166716	170380	4/26/2012	4/26/2012	☑	☐	☐
Ludlum 43-10-1 "C"	157329	207851	5/31/2012	5/31/2012	☐	☐	☐

Screening Count Information		**ALPHA**			**BETA**		
Variables	**Units**	**1st Count**	**2nd Count**	**3rd Count**	**1st Count**	**2nd Count**	**3rd Count**
Count Date		07/17/11			07/17/11		
Count Time		1900			1900		
Sample Count Time	Minutes	100			100		
Total Count		26			3499		
Sample Count Rate	CPM	0.3	#DIV/0!	#DIV/0!	35.0	#DIV/0!	#DIV/0!
Background Count Rate	CPM	0.1			47.0		
Volume of Air (Liters) (**A**)	Liters	2.06E+04	2.06E+04	2.06E+04	2.06E+04	2.06E+04	2.06E+04
Net count Rate (CPM) (**B**)	CPM	0.16	#DIV/0!	#DIV/0!	-12.0	#DIV/0!	#DIV/0!
Counter Efficiency (**C**)		0.372			0.297		
Collection Efficiency (**D**)	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Efficiency = (**C**)*(**D**) (**E**)		0.368	0.00	0.00	0.29	0.00	0.00
Activity (DPM)= (**B**) / (**E**) (**F**)	DPM	0.43	#DIV/0!	#DIV/0!	-40.85	#DIV/0!	#DIV/0!
Conc.=(**F**) / (2.22E9*(**A**)) (**G**)	µCi/ml	9.49996E-15	#DIV/0!	#DIV/0!	-8.932E-13	#DIV/0!	#DIV/0!
DAC/AE Fraction = (**G**)/(**H**)		0.2375	#DIV/0!	#DIV/0!	-22.33	#DIV/0!	#DIV/0!
Final Count?		☐	☐	☐	☐	☐	☐

Note: DAC/AE Fractions > 1.0 requires immediate RPM notification.

RPM Notified ☐

Calculated By: [signature] Date: 7/17/11

Reviewed By: [signature] Date: 7/24/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 1
PURPOSE OF SURVEY: Incoming survey on equipment.	DATE: 7/11/11	TIME: 1300

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9 ___	15.5								
☐ Micro - R ___	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Stihl Chainsaw	0	0	< MDA	59	12	< MDA	2	1	< MDA	234	0	< MDA	NA
2	Stihl Weedeater 'A'	0	0	< MDA	46	0	< MDA	3	2	< MDA	255	0	< MDA	NA
3	Stihl Weedeater 'B'	0	0	< MDA	51	4	< MDA	2	1	< MDA	243	0	< MDA	NA
4	GPR	0	0	< MDA	46	0	< MDA	4	3	< MDA	268	0	< MDA	NA
5	Magnetometer	0	0	< MDA	52	5	< MDA	4	3	< MDA	249	0	< MDA	NA
6														
7														
8						NA								
9														
10														

REMARKS: NA

TECHNICIAN(S) SIGNATURE/ DATE: [signature] / 7/11/11 /

REVIEWER SIGNATURE/ DATE: [signature] / 7/26/11 /

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 1
PURPOSE OF SURVEY: Incoming survey on Geoprobe 6620DT.	DATE: 7/12/11	TIME: 830

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9 ___	15.5								
☐ Micro - R ___	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
1	Right Track :From front)	0	0	< MDA	49	2	< MDA	3	2	< MDA	250	0	< MDA	NA
2	Left Track	0	0	< MDA	52	5	< MDA	4	3	< MDA	196	0	< MDA	NA
3	Contro Panel	1	1	< MDA	38	0	< MDA	3	2	< MDA	222	0	< MDA	NA
4	Right Stabilizer	0	0	< MDA	44	0	< MDA	1	0	< MDA	241	0	< MDA	NA
5	Left Stabilizer	0	0	< MDA	51	4	< MDA	2	1	< MDA	236	0	< MDA	NA
6	Clamp	0	0	< MDA	40	0	< MDA	2	1	< MDA	255	0	< MDA	NA
7	Tool Tray	0	0	< MDA	46	0	< MDA	1	0	< MDA	245	0	< MDA	NA
8	Foot	0	0	< MDA	56	9	< MDA	4	3	< MDA	244	0	< MDA	NA
9	Mast/Hammer	0	0	< MDA	51	4	< MDA	3	2	< MDA	249	0	< MDA	NA
10	Push Rods(x4)	0	0	< MDA	50	3	< MDA	1	0	< MDA	172	0	< MDA	NA

REMARKS: Geoprobe Model #28-006-5152 and Serial #64592

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/12/11 /

REVIEWER SIGNATURE/ DATE: Jennifer Chanker 7/26/11 /

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 1
PURPOSE OF SURVEY Release survey on Geophyiscal survey equipment.	DATE: 7/12/11	TIME: 1500

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9	15.5								
☐ Micro - R	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Magnetometer Base	0	0	< MDA	63	16	< MDA	1	0	< MDA	271	0	< MDA	NA
2	Magnetometer Controls	0	0	< MDA	42	0	< MDA	3	2	< MDA	248	0	< MDA	NA
3	GPR Base	3	3	< MDA	41	0	< MDA	2	1	< MDA	251	0	< MDA	NA
4	GPR Wheels	0	0	< MDA	43	0	< MDA	1	0	< MDA	256	0	< MDA	NA
						N/A								

REMARKS: All survey locations were scanned with 43-89, the removable smear and one minute count were collected at the location where the highest counts were recorded. No counts were recorded above background.

TECHNICIAN(S) SIGNATURE/ DATE: [signature] / 7/12/11 /

REVIEWER SIGNATURE/ DATE: Jennifer Chamberlain / 7/26/11 /

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 1
PURPOSE OF SURVEY: Incoming survey on Takeuchi Mini-Excavator.	DATE: 7/14/11	TIME: 1700

Instrument Type(s):	Detector Area (cm^2)	Serial Number:		Cal. Due Date		Background: (CPM)		Efficiency: (%)	
		meter	detector	meter	detector	Alpha (α)	Beta (βγ)	Alpha (α)	Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9 ___	15.5								
☐ Micro - R ___	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
1	Right Track (From front)	0	0	< MDA	44	0	< MDA	2	1	< MDA	201	0	< MDA	NA
2	Left Track	0	0	< MDA	49	2	< MDA	1	0	< MDA	190	0	< MDA	NA
3	Blade	0	0	< MDA	48	1	< MDA	2	1	< MDA	226	0	< MDA	NA
4	Bucket	0	0	< MDA	44	0	< MDA	1	0	< MDA	203	0	< MDA	NA
5	Arm	0	0	< MDA	35	0	< MDA	1	0	< MDA	153	0	< MDA	NA
6	Foot Pedals	0	0	< MDA	50	3	< MDA	0	0	< MDA	169	0	< MDA	NA
7	Controls	0	0	< MDA	47	0	< MDA	0	0	< MDA	168	0	< MDA	NA
8	Seat	1	1	< MDA	38	0	< MDA	0	0	< MDA	166	0	< MDA	NA
9	Floorboard	1	1	< MDA	48	1	< MDA	0	0	< MDA	155	0	< MDA	NA
10	Hydralic Arm	0	0	< MDA	51	4	< MDA	1	0	< MDA	203	0	< MDA	NA

REMARKS: Excavator Model #TB228 and Serial #122800442

TECHNICIAN(S) SIGNATURE/ DATE: [signature] / 7/14/11 / ___ /

REVIEWER SIGNATURE/ DATE: Jennifer Chamberlain / 7/26/11 / ___ /

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Release survey on Geoprobe 6620DT.	DATE: 7/15/11	TIME: 1300

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9 ___	15.5								
☐ Micro - R ___	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Right Track (From front)	0	0	< MDA	49	2	< MDA	3	2	< MDA	295	6	< MDA	NA
2	Left Track	0	0	< MDA	50	3	< MDA	2	1	< MDA	265	0	< MDA	NA
3	Control Panel	0	0	< MDA	36	0	< MDA	2	1	< MDA	284	0	< MDA	NA
4	Right Stabilizer	0	0	< MDA	43	0	< MDA	3	2	< MDA	320	31	< MDA	NA
5	Left Stabilizer	0	0	< MDA	48	1	< MDA	3	2	< MDA	318	29	< MDA	NA
6	Clamp	2	2	< MDA	42	0	< MDA	1	0	< MDA	291	2	< MDA	NA
7	Tool Tray	0	0	< MDA	40	0	< MDA	4	3	< MDA	277	0	< MDA	NA
8	Foot right side	0	0	< MDA	48	1	< MDA	0	0	< MDA	278	0	< MDA	NA
9	Foot left side	0	0	< MDA	50	3	< MDA	1	0	< MDA	263	0	< MDA	NA
10	Mast (Hammer)	0	0	< MDA	37	0	< MDA	1	0	< MDA	273	0	< MDA	NA

REMARKS: Geoprobe Model #28-006-5152 and Serial #64592. All survey locations were scanned with 43-89, the removable smear and one minute count were collected at the location where the highest counts were recorded. No counts were recorded above background.

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/15/11 /

REVIEWER SIGNATURE/ DATE: Jennis R Chamberlain 7/26/11 /

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area

Administrative Contamination Limits: (dpm/100cm²)		Removable α 20			Removable βγ 1000			Total α 100			Total βγ 5000			BKG
Instrument MDA: (dpm/100cm²)		α MDA 11			βγ MDA 90			α MDA 32			βγ MDA 358			NA
Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
11	Rods (x4)	0	0	< MDA	43	0	< MDA	3	2	< MDA	299	10	< MDA	NA
12	Wrenches (x3)	0	0	< MDA	50	3	< MDA	4	3	< MDA	279	0	< MDA	NA
13	Razor Knife	0	0	< MDA	58	11	< MDA	2	1	< MDA	301	12	< MDA	NA
14	Hammer	0	0	< MDA	55	8	< MDA	1	0	< MDA	302	13	< MDA	NA
15	Shoe (x2)	0	0	< MDA	49	2	< MDA	3	2	< MDA	311	22	< MDA	NA
16	Geoprobe Remote Control	0	0	< MDA	40	0	< MDA	1	0	< MDA	285	0	< MDA	NA
						NA								

REMARKS: Geoprobe Model #28-006-5152 and Serial #64592. All survey locations were scanned with 43-89, the removable smear and one minute count were collected at the location where the highest counts were recorded. No counts were recorded above background.

TECHNICIAN(S) SIGNATURE/ DATE: 7/15/11

REVIEWER SIGNATURE/ DATE: Jennifer Chamberlain 7/26/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Post decon survey of Geoprobe push rods and other equipment.	DATE: 7/16/11	TIME: 0948

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☐ Ludlum 2360 / 43-89	125								
☑ Ludlum 2221 / 44-9	15.5	197790	212132	3/28/12	3/28/12	NA	48	NA	18.9%
☐ Micro - R	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA NA	βγ MDA NA	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
1	5' Push Rods used at location SB-009	0	0	< MDA	42	0	< MDA							NA
2	5' Push Rods used at location SB-025	1	1	< MDA	50	3	< MDA							NA
3	Geoprobe tools	3	3	< MDA	54	7	< MDA							NA
4	5' Push Rods used at location SB-013	0	0	< MDA	43	0	< MDA							NA
5	5' Push Rods used at location SB-023	0	0	< MDA	47	0	< MDA							NA
6	5' Push Rods used at location SB-018	1	1	< MDA	48	1	< MDA							NA
7	5' Push Rods used at location SB-015	2	2	< MDA	51	4	< MDA							NA
8	5' Push Rods used at location SB-017	0	0	< MDA	45	0	< MDA							NA
9	5' Push Rods used at location SB-021	0	0	< MDA	51	4	< MDA							NA
10	5' Push Rods used at location SB-010	1	1	< MDA	46	0	< MDA							NA

REMARKS: All push rods and tools were decontaminated and then scanned with 44-9, the removable smears were collected at the location where the highest counts were recorded. No counts were recorded above background.

TECHNICIAN(S) SIGNATURE/ DATE: 7/16/11

REVIEWER SIGNATURE/ DATE: Jennifer Chamberlain 7/16/11

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area

Administrative Contamination Limits: (dpm/100cm²)		Removable α 20			Removable βγ 1000			Total α 100			Total βγ 5000			BKG
Instrument MDA: (dpm/100cm²)		α MDA 11			βγ MDA 90			α MDA NA			βγ MDA NA			NA
Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
11	5' Push Rods used at location SB-024	1	1	< MDA	62	15	< MDA							NA
12	5' Push Rods used at location SB-008	0	0	< MDA	58	11	< MDA				NA			NA
13	5' Push Rods used at location SB-016	0	0	< MDA	50	3	< MDA							NA
						NA								

REMARKS: All push rods and tools were decontaminated and then scanned with 44-9, the removable smears were collected at the location where the highest counts were recorded. No counts were recorded above background.

TECHNICIAN(S) SIGNATURE/ DATE: 7/16/11

REVIEWER SIGNATURE/ DATE: James P Chamberlain 7/24/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Release survey on Takeuchi Mini-Excavator.	DATE: 7/17/11	TIME: 0845

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9 ___	15.5								
☐ Micro - R ___	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Right Track (From front)	0	0	< MDA	37	0	< MDA	0	0	< MDA	299	10	< MDA	NA
2	Left Track	0	0	< MDA	47	0	< MDA	0	0	< MDA	301	12	< MDA	NA
3	Blade face	1	1	< MDA	59	12	< MDA	3	2	< MDA	293	4	< MDA	NA
4	Bucket (Inside)	0	0	< MDA	57	10	< MDA	3	2	< MDA	309	20	< MDA	NA
5	Arm	0	0	< MDA	51	4	< MDA	2	1	< MDA	296	7	< MDA	NA
6	Foot Pedals	0	0	< MDA	42	0	< MDA	2	1	< MDA	276	0	< MDA	NA
7	Controls	3	3	< MDA	53	6	< MDA	2	1	< MDA	303	14	< MDA	NA
8	Seat	1	1	< MDA	42	0	< MDA	1	0	< MDA	279	0	< MDA	NA
9	Floorboard	0	0	< MDA	42	0	< MDA	2	1	< MDA	277	0	< MDA	NA
10	Hydralic Arm	0	0	< MDA	38	0	< MDA	3	2	< MDA	277	0	< MDA	NA

REMARKS: Excavator Model #TB228 and Serial #122800442

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/17/11

REVIEWER SIGNATURE/ DATE: Jennifer Chamka 7/26/11

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area | Page 2 of 2

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	NA

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
11	Bucket (Outside)	0	0	< MDA	52	5	< MDA	2	1	< MDA	270	0	< MDA	NA
12	Blade Bottom	0	0	< MDA	49	2	< MDA	2	1	< MDA	296	7	< MDA	NA
13	Left Step	0	0	< MDA	36	0	< MDA	3	2	< MDA	250	0	< MDA	NA
14	Right Track Base	0	0	< MDA	54	7	< MDA	1	0	< MDA	312	23	< MDA	NA
15	Left Track Base	2	2	< MDA	38	0	< MDA	1	0	< MDA	257	0	< MDA	NA
16														
17														
18														
19														
20						NA								
21														
22														
23														
24														
25														

REMARKS: Excavator Model #TB228 and Serial #122800442

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/17/11

REVIEWER SIGNATURE/ DATE: Jennifer Chambers 7/24/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Shipping Survey on Sample Coolers	DATE: 7/17/11	TIME: 1500

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☐ Ludlum 2360 / 43-89 ___	125								
☐ Ludlum 2221 / 44-9 ___	15.5								
☑ Micro - R C	N/A	209723	NA	5/17/12	NA	NA	NA	NA	NA

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG 7
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA N/A	βγ MDA N/A	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Cooler #1 Exterior	0	0	< MDA	39	0	< MDA							10
2	Cooler #1 Interior	1	1	< MDA	51	4	< MDA							NA
3	Cooler #2 Exterior	1	1	< MDA	48	1	< MDA							8
4	Cooler #2 Inerior	3	3	< MDA	52	5	< MDA							NA
5	Cooler #3 Exterior	0	0	< MDA	44	0	< MDA							9
6	Cooler #3 Inerior	1	1	< MDA	50	3	< MDA							NA
7	Cooler #4 Exterior	0	0	< MDA	43	0	< MDA							8
8	Cooler #4 Inerior	1	1	< MDA	50	3	< MDA							NA
9	Cooler #5 Exterior	1	1	< MDA	49	2	< MDA							10
10	Cooler #5 Inerior	2	2	< MDA	53	6	< MDA							NA

REMARKS: Survey performed in compliance with DOT UN2910.

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/17/11 /

REVIEWER SIGNATURE/ DATE: Jennis R Chambers 7/26/11 /

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area — Page 2 of 2

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA NA	βγ MDA NA	7

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
11	Cooler #6 Exterior	0	0	< MDA	47	0	< MDA							12
12	Cooler #6 Interior	2	2	< MDA	47	0	< MDA							NA
13	Cooler #7 Exterior	1	1	< MDA	48	1	< MDA							9
14	Cooler #7 Interior	3	3	< MDA	41	0	< MDA							NA
15	Cooler #8 Exterior	0	0	< MDA	36	0	< MDA							12
16	Cooler #8 Interior	0	0	< MDA	48	1	< MDA							NA
17	Cooler #9 Exterior	0	0	< MDA	54	7	< MDA							11
18	Cooler #9 Interior	3	3	< MDA	44	0	< MDA							NA
					NA									

REMARKS: Survey performed in compliance with DOT UN2910.

TECHNICIAN(S) SIGNATURE/ DATE: 7/12/11

REVIEWER SIGNATURE/ DATE: 7/24/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Release survey on equipment that used onsite.	DATE: 7/17/11	TIME: 1555

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9	15.5								
☐ Micro - R	N/A								

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG NA
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA 32	βγ MDA 358	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	Stihl Chainsaw	0	0	< MDA	42	0	< MDA	1	0	< MDA	278	0	< MDA	NA
2	Stihl Weedeater 'A'	0	0	< MDA	51	4	< MDA	1	0	< MDA	307	18	< MDA	NA
3	Stihl Weedeater 'B'	0	0	< MDA	35	0	< MDA	0	0	< MDA	283	0	< MDA	NA
4	Survey Rod	0	0	< MDA	41	0	< MDA	1	0	< MDA	305	16	< MDA	NA
5	Geopump (Geo-657)	0	0	< MDA	52	5	< MDA	4	3	< MDA	261	0	< MDA	NA
6	WLI	1	1	< MDA	56	9	< MDA	1	0	< MDA	316	27	< MDA	NA
7	Autocraft Battery	0	0	< MDA	40	0	< MDA	0	0	< MDA	285	0	< MDA	NA
8	Augers (x5)	0	0	< MDA	41	0	< MDA	4	3	< MDA	274	0	< MDA	NA
9	T-Bar Handle (x2)	1	1	< MDA	51	4	< MDA	2	1	< MDA	313	24	< MDA	NA
10	Water Sprayer	1	1	< MDA	53	6	< MDA	3	2	< MDA	293	4	< MDA	NA

REMARKS: All survey items were 100% scanned with 43-89, no counts were recorded above background. The removable smear were collected at the location where the highest counts were recorded.

TECHNICIAN(S) SIGNATURE/ DATE: 7/17/11 /

REVIEWER SIGNATURE/ DATE: Jennifer R Chamberlain 7/20/11 /

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area | Page 2 of 2

Administrative Contamination Limits: (dpm/100cm²)		Removable α 20			Removable βγ 1000			Total α 100			Total βγ 5000			BKG
Instrument MDA: (dpm/100cm²)		α MDA 11			βγ MDA 90			α MDA 32			βγ MDA 358			NA
Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm β Total	uR/hr
11	External GPS Antenna	0	0	< MDA	53	6	< MDA	4	3	< MDA	293	4	< MDA	NA
12	Hydrolab SN-QD01654	1	1	< MDA	47	0	< MDA	2	1	< MDA	269	0	< MDA	NA
13	Orange Highway Cones (x2)	0	0	< MDA	49	2	< MDA	3	2	< MDA	301	12	< MDA	NA
							NA							

REMARKS: All survey items were 100% scanned with 43-89, no counts were recorded above background. The removable smear were collected at the location where the highest counts were recorded.

TECHNICIAN(S) SIGNATURE/ DATE: 7/17/11

REVIEWER SIGNATURE/ DATE: Jennis L Chambers 7/18/11

SAIC RADIOLOGICAL SURVEY REPORT

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area	HSWP: SI-11-002.0	Page 1 of 2
PURPOSE OF SURVEY: Release survey on used disposable equipment.	DATE: 7/17/11	TIME: 1800

Instrument Type(s):	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date meter	Cal. Due Date detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency: (%) Alpha (α)	Efficiency: (%) Beta (βγ)
☑ Ludlum 2929 / 43-10-1 B	N/A	166716	170380	4/26/12	4/26/12	0.1	47	37.2%	29.7%
☑ Ludlum 2360 / 43-89 C	125	202463	199349	6/1/12	6/1/12	0.6	289	14.0%	13.8%
☐ Ludlum 2221 / 44-9	15.5								
☑ Micro - R C	N/A	209723	NA	5/17/12	NA	NA	NA	NA	NA

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG 7
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA N/A	βγ MDA N/A	

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
1	7/11/11 PPE	1	1	< MDA	49	2	< MDA							7
2	7/12/11 PPE	0	0	< MDA	59	12	< MDA							6
3	7/12/11 Liners	1	1	< MDA	48	1	< MDA							8
4	7/13/11 PPE	3	3	< MDA	58	11	< MDA							6
5	7/13/11 Liners	1	1	< MDA	52	5	< MDA							6
6	7/14/11 PPE	0	0	< MDA	49	2	< MDA							7
7	7/14/11 Liners	0	0	< MDA	35	0	< MDA							6
8	7/15/11 PPE	1	1	< MDA	46	0	< MDA							7
9	7/15/11 Liners	3	3	< MDA	49	2	< MDA							7
10	7/15/11 Plastic Sheeting	0	0	< MDA	59	12	< MDA							7

REMARKS: All survey items were 100% scanned with 43-89, no counts were recorded above background. The removable smear were collected at the location where the highest counts were recorded.

TECHNICIAN(S) SIGNATURE/ DATE: [signature] 7/17/11 /

REVIEWER SIGNATURE/ DATE: Jennifer Chambers 7/24/11 /

SAIC RADIOLOGICAL SURVEY REPORT (Supplement)

SURVEY LOCATION: Staten Island FUSRAP Warehouse Site, Staging Area — Page 2 of 2

Administrative Contamination Limits: (dpm/100cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100cm²)	α MDA 11	βγ MDA 90	α MDA NA	βγ MDA NA	7

Sample No.	Description / Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM β Removable	Net CPM β Removable	dpm/100cm² β Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM β Total	Net CPM β Total	dpm/100cm² β Total	uR/hr
11	7/16/11 PPE	0	0	< MDA	48	1	< MDA							9
12	Temporary well screens	0	0	< MDA	36	0	< MDA							7
13	Tubing	1	1	< MDA	49	2	< MDA				NA			7
14	Pin flags	0	0	< MDA	50	3	< MDA							7
15	Plywood	1	1	< MDA	44	0	< MDA							6
16	7/17/11 PPE	1	1	< MDA	44	0	< MDA							8
						NA								

REMARKS: All survey items were 100% scanned with 43-89, no counts were recorded above background. The removable smear were collected at the location where the highest counts were recorded.

TECHNICIAN(S) SIGNATURE/ DATE: 7/17/11

REVIEWER SIGNATURE/ DATE: Jennifer Chambers 7/18/11