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FINAL RCRA FACILITY INVESTIGATION FOR SOLID WASTE MANAGEMENT UNIT 16, 33, 34, 39, 42 AND AREA OF CONCERN 6 AND 15 NAS FORT WORTH TX
7/1/2000
HYDROGEOLOGIC

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NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

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FINAL RCRA FACILITY INVESTIGATION REPORT SWMUS 16, 33, 34, 39, 42, AND AOCS 6 AND 15 NAS FORT WORTH JRB, TEXAS

Prepared for
U.S. Air Force Center for Environmental Excellence
Brooks AFB, Texas

Contract Number F41624-95-D-8005

July 2000

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641 2

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
BROOKS AIR FORCE BASE TEXAS

21 July, 2000

MEMORANDUM FOR RAY RISNER (TNRCC)

FROM: HQ AFCEE/ERD
P.O. Box 27008
Fort Worth, Texas 76127-0008

SUBJECT: Naval Air Station Joint Reserve Base
Formerly Carswell AFB
TNRCC Solid Waste Registration No. 65004
EPA ID No. TX0571924042
Final RCRA Facility Investigation Report, SWMUs 16, 33, 34, 39, 42, and AOCs, 6 and 15

Dear Mr. Risner,

Please find enclosed two copies of the Final RCRA Facility Investigation Report requesting closure of SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 for your review.

Should you have any questions regarding this letter, please contact me at (210) 536-5290, or via e-mail at *Holmes.Ficklen@hqafcee.brooks.af.mil*.

Sincerely,

Don Ficklen
Restoration Team Chief
NAS Ft. Worth JRB

cc:

Printed on Recycled Paper

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FINAL RCRA FACILITY INVESTIGATION REPORT SWMUS 16, 33, 34, 39, 42, AND AOCS 6 AND 15 NAS FORT WORTH JRB, TEXAS

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13 ABSTRACT (Maximum 200 words)

This document presents the Final RCRA Facility Investigation Report for SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 located at the Naval Air Station Fort Worth Joint Reserve Base, Texas. Field observations and analytical results included in this RFI Report indicate that a release of hazardous constituents listed in 40 Code of Federal Regulations Part 264, Appendix IX has not occurred to the environment. Based on this information, no further action is warranted, and the subject sites are recommended for closure.

14 SUBJECT TERMS			15 NUMBER OF PAGES 16 PRICE CODE
17 SECURITY CLASSIFICATION OF REPORT	18 SECURITY CLASSIFICATION OF THIS PAGE	18 SECURITY CLASSIFICATION OF ABSTRACT	20 LIMITATION OF ABSTRACT

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PREFACE

This document contains the Final Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report for solid waste management units (SWMUs) 16, 33, 34, 39, 42, and areas of concern (AOCs) 6 and 15 at the Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB), Texas.

HydroGeoLogic, Inc. (HydroGeoLogic) prepared this report under contract to the U.S. Air Force (USAF) Center for Environmental Excellence (AFCEE), Contract No. F41624-95-D-8005, Delivery Order No. 0015, in support of the Air Force Installation Restoration Program (IRP).

Responsible key HydroGeoLogic personnel are as follows:

James P. Costello, P.G.	Program Manager
Todd C. Harrah	Project Manager

This contract will be administered by the Defense Contract Management Command (DCMC), 10500 Battleview Pkwy., Suite 200, Manassas, Virginia, 22110. The Contracting Officer is Mr. David Miller. The Contracting Officer's Representative is Mr. Don Ficklen (210/536-5290), representing the AFCEE Environmental Restoration Division (ERD), located at Headquarters AFCEE, 3207 North Road, Brooks Air Force Base (AFB), Texas 78235-5363.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AFCEE	U.S. Air Force Center for Environmental Excellence
AFP 4	Air Force Plant 4
AGE	aerospace ground equipment
AOC	area of concern
ASTM	American Society for Testing and Materials
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
cis-1,2-DCE	*cis*-1,2-dichloroethene
CFR	Code of Federal Regulations
cm/sec	centimeters per second
DCMC	Defense Contract Management Command
DPT	direct push technology
DQE	data quality evaluation
DRMO	Defense Reutilization and Marketing Office
EDD	electronic data deliverable
ERA	Environmental Restoration Account
ERD	Environmental Restoration Division
ERPIMS	Environmental Resources Program Information Management System
ft/d	feet per day
°F	degrees Fahrenheit
gpd/ft^2	gallons per day per square foot
HW	hazardous waste
HydroGeoLogic	HydroGeoLogic, Inc.
IRP	Installation Restoration Program
IT	International Technologies Corporation
JP-4	jet propulsion (grade-4) fuel
JRB	Joint Reserve Base

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

Law	Law Engineering
LCS	laboratory control samples
MEK	methyl ethyl ketone
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MQL	method quantitation limit
MSC	medium-specific concentration
MS/MSD	matrix spike/matrix spike duplicate
NAS	Naval Air Station
NDI	nondestructive inspection
NFA	no further action
NGVD	National Geodetic Vertical Datum
NPDES	National Pollution Discharge Elimination System
OVM	organic vapor monitor
OWS	oil/water separator
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PD-680	petroleum naptha
PQL	practical quantitation limit
QAPP	quality assurance project plan
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RRS	risk reduction standard
RV	recreational vehicle
SDG	sample delivery group
SPLP	Synthetic Precipitation Leaching Procedure
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TARA	Toxicology and Risk Assessment
TCE	trichloroethene
TNRCC	Texas Natural Resource Conservation Commission

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

TPH	total petroleum hydrocarbons
TWC	Texas Water Commission
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
WAA	waste accumulation area
WP	work plan

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TAB

Section 1

FINAL RCRA FACILITY INVESTIGATION REPORT SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 NAS FORT WORTH JRB, TEXAS

1.0 INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) requested that the USAF investigate SWMUs and AOCs located at what is currently NAS Fort Worth, JRB, Fort Worth, Texas. NAS Fort Worth JRB was formerly known as Carswell AFB. The TNRCC requested that an RFI be conducted at SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 to determine whether any hazardous constituents listed in 40 Code of Federal Regulations (CFR) Part 264, Appendix IX have been released into the environment. This RFI Report demonstrates that the SWMUs and AOCs listed above pose no significant risk to human health or the environment and provides justification for no further action (NFA).

1.1 PROJECT BACKGROUND

Carswell AFB was officially closed on September 30, 1993. A parcel of the former base now known as NAS Fort Worth JRB, has been transferred from USAF to U.S. Navy management. Before complete property transfer can be accomplished, required environmental investigations of potential contamination related to USAF activities occurring prior to September 30, 1993 on NAS Fort Worth JRB property are to be completed, and contaminated sites remediated.

On February 7, 1991, the former Carswell AFB (NAS Fort Worth JRB), was issued a RCRA hazardous waste (HW) permit (HW-50289) by the Texas Water Commission (TWC). This permit requires a RFI of all SWMUs and AOCs listed in Permit Provision VIII, as well as those SWMUs and AOCs subsequently added to the list, in order to determine whether any of the hazardous constituents listed in 40 CFR Part 264, Appendix IX have been released into the environment.

In accordance with permit HW-50289, a RFI was conducted on 14 SWMUs and 2 AOCs at NAS Fort Worth JRB, Texas (HydroGeoLogic, 1999a). The SWMUs and AOCs included in the RFI served mainly as waste accumulation areas (WAAs), which stored HW before it was either disposed of in landfills, reused on base, or processed through the Defense Reutilization and Marketing Office (DRMO) for off-base recycling or disposal.

The initial phase of the RFI was conducted at the subject SWMUs during May and June of 1999 in an effort to obtain closure under the TNRCC Risk Reduction Standard (RRS) program. As a result of the initial field investigation, 9 of the 16 SWMUs require further investigation and/or remediation before closure may be requested. These sites, including SWMUs 5, 6, 11, 12, 31, 32, 36, 51, and 61, are under an ongoing investigation, the results of which will be

presented under a separate cover at a later date. The remaining seven WAAs, including SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15, are the subject of this RFI Report.

This RFI Report demonstrates that SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 pose no significant risk to human health or the environment and provides justification for NFA and closure under RRS 1. This investigation was managed by the USAF under the Environmental Restoration Account (ERA). The primary regulatory programs that govern the RFI and closure of these sites are RCRA and the TNRCC RRS program. The TNRCC is the lead regulatory agency for activities conducted at the subject sites.

1.2 SITE IDENTIFICATION AND DESCRIPTION

The areas of interest for this RFI Report are five SWMUs and two AOCs located throughout the NAS Fort Worth JRB installation. The SWMUs and AOCs listed below are identified as they appear on the TNRCC letter dated March 2, 1995. The SWMU and AOC identifications below are based on the 1989 RCRA Facility Assessment (RFA) (A.T. Kearney, 1989) where each WAA was identified with the associated building number from which wastes were stored. These SWMUs and AOCs are identified as follows:

- SWMU 16 (Building 1060 Waste Accumulation Area)
- SWMU 33 (Building 1420 Waste Accumulation Area)
- SWMU 34 (Building 1194 Waste Accumulation Area)
- SWMU 39 (Building 1643 Waste Accumulation Area)
- SWMU 42 (Building 1414 Waste Accumulation Area)
- AOC 6 (Recreational Vehicle (RV) Parking Area)
- AOC 15 (Building 1190 Storage Shed)

SWMU 16 was listed in the permit HW-50289 for corrective action; SWMUs 33 and 42 were added to the permit in the TNRCC letter dated April 22, 1994; and all of the sites, including 34, 39, and AOCs 6 and 15, were listed in the TNRCC letter dated March 2, 1995, to the Air Force Base Conversion Agency (AFBCA), for inclusion into the permit requirement for investigation and/or corrective action.

In 1990, new metal storage sheds designated as WAAs were built at SWMUs 16 and 33 in order to be in compliance with Permit HW-50289. Each storage shed was assigned a new, individual building number. These new WAA buildings are listed on Table 1.1 along with a summary description of each SWMU/AOC. The new WAA buildings at SWMUs 16 and 33 are currently used for the storage of HW. AOC 6 continues to serve as a parking area for RVs at NAS Fort Worth JRB. Following the 1989 RFA, wastes were removed from SWMUs 34, 33, and 42. These SWMUs no longer serve as active WAAs at NAS Fort Worth JRB. In addition, there has been no evidence or record of HW storage at AOC 15, and this storage shed is currently empty.

The locations of the SWMUs and AOCs in relation to the base are presented on Figure 1.1. Table 1.1 provides a summary description of the waste handled at each SWMU and AOC and lists the current status of each site.

1.2.1 SWMU 16

SWMU 16 is located southeast of Building 1060, between Perimeter Road and Haile Drive. SWMU 16 operated from approximately 1982 until 1990 and was described as a 20- by 40-foot fenced area of the asphalt parking lot located southeast of Building 1060. WAA 1059 was built over the former SWMU in 1990, and is currently used by the Navy. Past and current photographs of SWMU 16 are shown in Figure 1.2.

SWMU 16 stored wastes from operations performed by the corrosion control shop within Building 1060. Corrosion control shop personnel were responsible for corrosion treatment and painting of B-52 and KC-135 aircraft, associated aircraft parts, and support equipment. This shop was equipped with a 160-gallon hot stripping tank and a 200-gallon soap tank. Wastes from the stripping tank (640 gallons/year) and wastes from the soap tank (120 gallons/year) were drummed and disposed of as HW. Waste polyurethane paint (600 gallons/year) and rags contaminated with polyurethane paint were also drummed and disposed of as HW. An unspecified amount of spent plastic bead blasting media was collected and stored in a 55-gallon drum. SWMU 16 also managed 120 gallons/year of waste hydraulic fluid generated by a hydraulic test stand in Building 1050's pneudraulics shop. This waste fluid was drummed at Building 1050 and taken to SWMU 16 after each drum became full. In addition to these wastes, surface stripper (36 gallons/year), paint remover (36 gallons/year), methyl ethyl ketone (MEK) (240 gallons/year), and petroleum naptha (PD-680) (Type II) (1,200 gallons/year) were listed as wastes managed by SWMU 16 (USAF, 1989). In addition to the wastes stored at SWMU 16, approximately 1.5 gallons/year of hydrofluoric acid and approximately 120 gallons/year of Alodine™ (acid) were used inside Building 1060. These acids were reported to have been neutralized and disposed of down the sanitary sewer (USAF, 1989).

1.2.2 SWMU 33

SWMU 33 is located northeast of Building 1420 near the intersection of 1st Street and Perimeter Road. This SWMU, which operated from approximately 1982 until 1990, served as a container storage area that received waste from Buildings 1420, and possibly received wastes from Buildings 1403, 1405, 1418, and 1434. Building 1420 housed the MMS[1] equipment maintenance shop, which was responsible for maintenance and periodic inspections of all munitions trailers. This shop was equipped with a 20-gallon PD-680 tank that was changed twice per month. Two to three trailer hydraulic systems were drained every month, and each hydraulic system held 17 gallons of hydraulic fluid. One-half gallon of MEK was used to flush each trailer's brake system. This MEK was reported to be used in process. All wastes were

[1] A definition of the acronym "MMS" was not found However, operations within Building 1420 suggest that MMS may be defined as "munitions maintenance service" or "munitions maintenance shop".

drummed and stored at the shop's accumulation site (USAF, 1989). Wastes handled at SWMU 33 included PD-680 (Type II) (480 gallons/year), and brake and hydraulic fluids (240 gallons/year). Possible wastes received from nearby corrosion control shops may have included waste paints and solvents, strippers, and thinners.

SWMU 33 was an outdoor, uncovered unit, surrounded on three sides by a wooden fence. The base of the unit was part concrete and part asphalt. Some of the 55-gallon drums that were stored at this unit rested horizontally on a metal rack. A new storage shed, WAA 1436, was built on top of the former SWMU in 1990, and is currently used as a satellite accumulation point by the Navy (A.T. Kearney, 1989). Past and current photographs of SWMU 33 are shown in Figure 1.3.

1.2.3 SWMU 34

SWMU 34 is located south of Building 1194, at the intersection of A Street and Knights Lake Road. SWMU 34 served as a WAA for the vehicle refueling shop within Building 1194 from an unknown startup date until approximately 1990. The vehicle refueling shop was used to maintain refueling and water servicing vehicles. Waste oils generated at the shop (240 gallons/year) were placed into a 300-gallon bowser located at the accumulation site. Waste transmission fluid (24 gallons/year), antifreeze (70 gallons/year), and spent PD-680 (Type II) (100 gallons/year) were drummed and stored at SWMU 34. These waste liquids were pumped out by a contractor for off- site disposal (USAF, 1989).

SWMU 34 was located on a paved concrete area adjacent to Building 1194 that sloped away to a parking lot. Wastes were stored in 55-gallon drums placed on a wooden pallet. Waste oils were stored in a 300-gallon bowser placed directly on the concrete. The area is surrounded by discontinuous concrete curbing (A.T. Kearney, 1989). Surface runoff flows from the unit across the parking lot onto bare ground and into a storm water sewer. No waste is currently stored at this area, and the concrete at this SWMU appears to be in good condition. Past and current photographs of SWMU 34 are shown in Figure 1.4.

1.2.4 SWMU 39

SWMU 39 is located east of Building 1643, between Rogner Drive and 1st Street. This SWMU, which operated from approximately 1982 until approximately 1990, stored containerized wastes from aircraft maintenance operations performed at three shops inside Building 1643. These shops were identified as the phase dock, the pneudraulics shop, and the wheel and tire shop. Phase dock personnel were responsible for inspecting the F4-E aircraft. Pneudraulics personnel were responsible for inspecting, servicing, repairing, overhauling, and bench checking hydraulic and pneumatic components on the F4-E aircraft. Wheel and tire shop personnel tore down, cleaned, and rebuilt main and nose wheels of F4-E aircraft. This shop was equipped with two PD-680 degreasing tanks, one 135-gallon and one 30-gallon, which were both changed out on a quarterly basis. Waste PD-680 (1,420 gallons/year), waste jet propulsion (grade-4) fuel (JP-4) (600 gallons/year), waste hydraulic fluid (192

gallons/year), and stripper (100 gallons/year) were drummed and stored at the accumulation area until they were eventually pumped out by a contractor for off-site disposal. Waste oil (12 gallons/year) was stored in a 200-gallon waste oil trailer. Other wastes reportedly generated at Building 1643 were aircraft soap and carbon remover. These wastes were disposed of through the oil/water separator (OWS) (USAF, 1989).

SWMU 39 was paved with asphalt and contained a 200-gallon waste oil trailer along with 55-gallon drums and smaller containers on top of wooden pallets. The area was surrounded by sand bags piled two high. Several 25-gallon containers were stacked in a locked cage measuring 3 by 6 feet, located just outside of the sand bag area. Surface runoff from the SWMU washed into the storm water drains (A.T. Kearney, 1989). No waste is currently stored in this area. Past and current photographs of SWMU 39 are shown in Figure 1.5.

1.2.5 SWMU 42

SWMU 42 is located near the southeast corner of Building 1414 at the intersection of Perimeter Road and 2nd Street. This SWMU operated from approximately 1982 until approximately 1990. SWMU 42 managed waste from the aerospace ground equipment (AGE) shop and the nondestructive inspection (NDI) shop located in Building 1414. SWMU 42 may have also received waste from corrosion control operations within Building 1434. The AGE shop was responsible for all maintenance and periodic inspections of AGE equipment. Waste fluids including PD-680 (Type II) (960 gallons/year), synthetic oils (1,800 gallons/year), hydraulic fluids (660 gallons/year), antifreeze (960 gallons/year), and fuels (4,080 gallons/year) were stored separately in 55-gallon drums at the shop's accumulation site until they were eventually pumped out by a contractor for off-base disposal. Waste oils (3,300 gallons/year) were collected and stored in a 500-gallon bowser. The NDI shop generated waste penetrant (220 gallons/year), emulsifier (220 gallons/year), and an unspecified amount of 1,1,1-trichloroethane. These wastes were drummed and stored at SWMU 42. The NDI shop also generated spent photo chemicals, which underwent a silver recovery process and were then disposed of down the sanitary sewer (USAF, 1989).

SWMU 42 consisted of an approximate 20- by 20-foot area located on asphalt pavement near the southeast corner of Building 1414. Chemical waste was stored at this area in 55-gallon carbon-steel drums. Waste oil was stored in a 500-gallon bowser set on the ground. The bowser was surrounded by sand bags piled two high. Surface runoff from the area washed into storm water drains. There are no wastes currently stored in the area of SWMU 42 (A.T. Kearney, 1989). WAA 1413 was built in 1990 near the southwest corner of Building 1414. This WAA is used by a private contractor and is not associated with SWMU 42. Past and current photographs of SWMU 42 are shown in Figure 1.6.

1.2.6 AOC 6

AOC 6, the RV Parking Area, is a large fenced parking lot located south of Building 1320 on Rogner Drive. This area has been used to store various motor homes, boats, and other

recreational equipment from an unknown startup date to the present. Although there is no record of wastes stored in this area, various types of waste oils, waste fuels, antifreeze, paints, thinners, and solvents may have been stored and used during maintenance operations performed on the recreational vehicles within the parking lot.

The AOC 6 parking area is covered with a surface of compacted gravel. Various types of RVs are still stored within the area. Photographs of AOC 6 are shown in Figure 1.7.

1.2.7 AOC 15

AOC 15 is described as the small storage shed located on the south side of Building 1190, within the fenced area of SWMU 51, the Central Waste Storage Area. Although AOC 15 is not described in the 1989 RFA, according to interviews with site personnel, small containers of waste oils and solvents may have been periodically stored within the shed. There are no wastes currently stored in this area. Photographs of AOC 15 are shown in Figure 1.8.

1.3 REGULATORY REQUIREMENTS

RFI field activities were conducted in May and June 1999 at the subject sites (HydroGeoLogic, 1999a). The RFI was designed to meet the requirements of Permit Provision VIII of RCRA permit HW-50289. The RFI Work Plans (WPs) and this RFI Report have been prepared using guidance documents from the IRP, RCRA, the U.S. Environmental Protection Agency (USEPA), and the TNRCC RRS program.

This RFI was conducted in accordance with the RFI WPs prepared by HydroGeoLogic dated May 1999. The RFI WPs contain the Field Sampling Plan, which was followed during all sampling activities. The Final Basewide Quality Assurance Project Plan (QAPP), prepared by HydroGeoLogic dated February 1998, was used as guidance for managing specific quality assurance (QA) and quality control (QC) procedures as well as analytical data generated from the RFI. Analytical data generation and assessment were designed to achieve data quality goals in accordance with the Basewide QAPP (HydroGeoLogic, 1998).

The overall objective of this project is to obtain closure of the subject SWMUs and AOCs under the TNRCC RRS program. An overview of the RRS program is presented in Section 4.1 of the RFI WPs (HydroGeoLogic, 1999a). In addition, the SWMUs at NAS Fort Worth JRB are subject to the specific requirements of the RCRA permit HW-50289. These sites are typically very small and each SWMU only received wastes produced from the industrial practices conducted within their associated building. As a result, a large soil boring network and the full suite of Appendix IX analyses were not justified at the majority of these sites. The Air Force has provided justification of a reduced list of soil and groundwater analytical requirements for this RFI in a letter to the TNRCC dated April 20, 1999. This letter is included as Appendix A.

To determine if a release has occurred at any of the SWMUs and AOCs, the results from samples collected and analyzed for inorganic compounds were compared to the approved base-specific background values as presented in the Final Basewide Background Study (Jacobs, 1998). The results from samples collected and analyzed for organic compounds were compared to respective method quantitation limits (MQLs). Furthermore, all analytical results were compared to available medium-specific concentrations (MSCs) to determine if detected contaminants posed a threat to shallow groundwater. Evaluation of initial RFI results against the above criteria indicated that a significant release of contaminants to soils has not occurred at SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15. Additionally, the data evaluation indicated that no further sampling is required to delineate detected contaminants to background or MQLs at the above referenced SWMUs and AOCs, as required by the Texas Risk Reduction Rules (30 TAC §335 Subchapter S).

1.4 INVESTIGATION STRATEGY

The RFI was designed and conducted to achieve the following objectives:

- Determine if a release from the units has occurred.
- If contamination was encountered, the nature and extent of the contamination must be characterized. As no evidence of contamination was encountered during the initial soil investigation, no further sampling will be conducted.
- If necessary, utilize the Synthetic Precipitation Leaching Procedure (SPLP) to provide an adjusted MSC. Site specific adjusted MSCs are presented and discussed in Section 4.0 of this report.

Prior to initiating the intrusive investigation at the subject sites, the structural integrity of each WAA storage shed's walls and floors was examined for cracks or gaps. As each shed's integrity appeared to be intact, intrusive activities did not take place within any of the WAA storage sheds.

Field tasks used to characterize each site included advancing continuous-core DPT soil borings in order to collect soil samples. This soil sampling method was used to determine the lithology of native soils and the nature and extent of any surface and subsurface contamination. At sites where the WAA storage shed was built over the former SWMU, the proposed soil borings were placed as close to the shed's walls as possible.

Soil samples were collected from each soil boring in 5-foot intervals from the ground surface to the top of the water table in order to determine the nature and extent of any surface and subsurface contamination. As previously noted, each SWMU and AOC received various types and amounts of HW throughout its respective period of operation. In order to determine if the subject SWMUs and AOCs present a threat to human health or the environment, essential information regarding each site was obtained. This information includes:

- The lithology of soils to the top of the water table beneath each SWMU/AOC
- The nature of wastes stored at each SWMU/AOC
- An assessment of potential contaminant impacts on the quality of soil within and around each SWMU/AOC

1.5 DATA QUALITY OBJECTIVES

The data generated by this project are of sufficient quality and quantity to meet the overall project objective, which is to determine if a release has occurred at any of the subject sites, and if not, to request closure of SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 under the TNRCC RRS program. Data from the following categories were required for this study:

Site Characterization - Data were used to evaluate physical and chemical properties of soil. The data were also used to characterize the nature and extent of any contaminants detected.

Health and Safety - Data were used to establish the level of protection needed for the sampling team and other site-related personnel. These data were gathered by the use of organic vapor monitors (OVMs) during intrusive activities.

A combination of screening level data and definitive level data was used during this RFI. Health and safety data were collected as screening data. All soil samples were analyzed following USEPA SW846 protocols. The definitions of screening data and definitive data, as established by the Data Quality Objectives Process for Superfund Interim Final Guidance (USEPA/540/G-93/071, 1993) are described below:

- Screening Data with Definitive Confirmation - Screening data can be generated by rapid, less precise methods of analysis with less rigorous sample preparation. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion and cleanup. Screening data provides analyte identification and quantification. Although the quantification may be determined using analytical methods with QA/QC procedures and criteria associated with definitive data, screening data without associated confirmation data are not considered to be data of known quality.

- Definitive Data - Definitive data were generated using rigorous analytical methods, such as approved USEPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. These methods produce tangible raw data (e.g., chromatograms, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an off-site location, as long as the QA/QC requirements are satisfied. For the data to be definitive, either analytical or total measurement error must be determined.

The methods of analysis selected for samples collected from NAS Fort Worth JRB produced screening as well as definitive data. The data generated by the laboratory analysis of samples were sufficiently sensitive to allow comparison of the results to the TNRCC RRS. The Basewide QAPP (HydroGeoLogic, 1998) describes each method that was performed as part of the investigation and outlines the quality assurance measures followed by the contract laboratory. A data quality assessment of the analytical data collected during this RFI is presented as Appendix E.

1.6 REPORT ORGANIZATION

The remainder of this document is divided into the following sections:

Section 2.0 summarizes the installation and site specific environmental settings for this RFI.

Section 3.0 summarizes any previous site investigations as well as activities that were conducted during this RFI. These activities included an inspection of each WAA storage shed and the collection of soil samples for analysis.

Section 4.0 presents the results of the RFI and the potential releases to the environment.

Section 5.0 presents a discussion and analysis of the results presented in Section 4.0.

Section 6.0 presents the conclusions of the RFI and recommendations for closure based on the results presented in Section 4.0.

Section 7.0 presents the references associated with the preparation of this report.

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TABLES

Table 1.1
SWMU and AOC Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Status
SWMU 16 WAA 1059	Building 1060 - Corrosion Control Shop Building 1050 - Pneudraulics Shop	Approx 1982 – Present	Surface stripper (36 gal/yr) - drummed Hot tank stripper (640 gal/yr) - drummed Paint remover (methylene chloride, toluene)(36 gal/yr) - drummed Hydrofluoric acid (1.5 gal/yr) - neutralized, down drain Alodine (acid) (120 gal/yr) - neutralized, down drain Aircraft soap (120 gal/yr) - drummed MEK (240 gal/yr) - drummed Waste polyurethane paint (600 gal/yr) - drummed Rags contaminated with polyurethane paint - drummed Spent bead blasting media (unspecified amount) - drummed Hydraulic fluid (120 gal/yr) - drummed PD-680 (Type II)(petroleum naptha solvent)(1200 gal/yr) - drummed	Approximately 2 feet of soil was removed from the SWMU before the new storage shed, WAA 1059, was built in 1990. WAA 1059 is currently used by the Navy.
SWMU 33 WAA 1436	Building 1420 - MMS Equipment Maintenance Shop Possibly received waste from Buildings 1403, 1405, 1418, and 1434 Corrosion Control Shops	Approx. 1982 - Present	PD-680 (Type II)(petroleum naptha solvent) (480 gal/yr) - drummed Brake and hydraulic fluids (240 gal/yr) - drummed MEK (0.5 gal/yr) - used in process Soap (120 gal/yr) - down drain Possibly received waste from Building 1434 Thinner (toluol, MEK, isopropanol, naptha, xylene)(15 gal/yr) - drummed Waste paints and solvents (1500 gal/yr) - unspecified container Strippers (methylene chloride, toluene) (unspecified amount) - unspecified container	The current storage shed was built on top of the former SWMU and is used as a satellite accumulation point by the Navy.
SWMU 34	Building 1194 - Vehicle Refueling Shop	Unknown startup date–1990	Waste engine oils (240 gal/yr) - 300-gallon bowser Transmission fluid (24 gal/yr) - drummed Antifreeze (70 gal/yr) - drummed PD-680 (Type II) (petroleum naptha solvent) (100 gal/yr) - drummed Aircraft cleaning soap (120 gal/yr) - OWS JP-4 (5000 gal/yr) - fire training pit Safety-Kleen (solvent) (300 gal/yr) - tank serviced by contractor	No waste is currently stored in this area, and the concrete appears to be in good condition.

Table 1.1 (continued)
SWMU and AOC Summary Table
NAS Forth Worth JRB, Texas

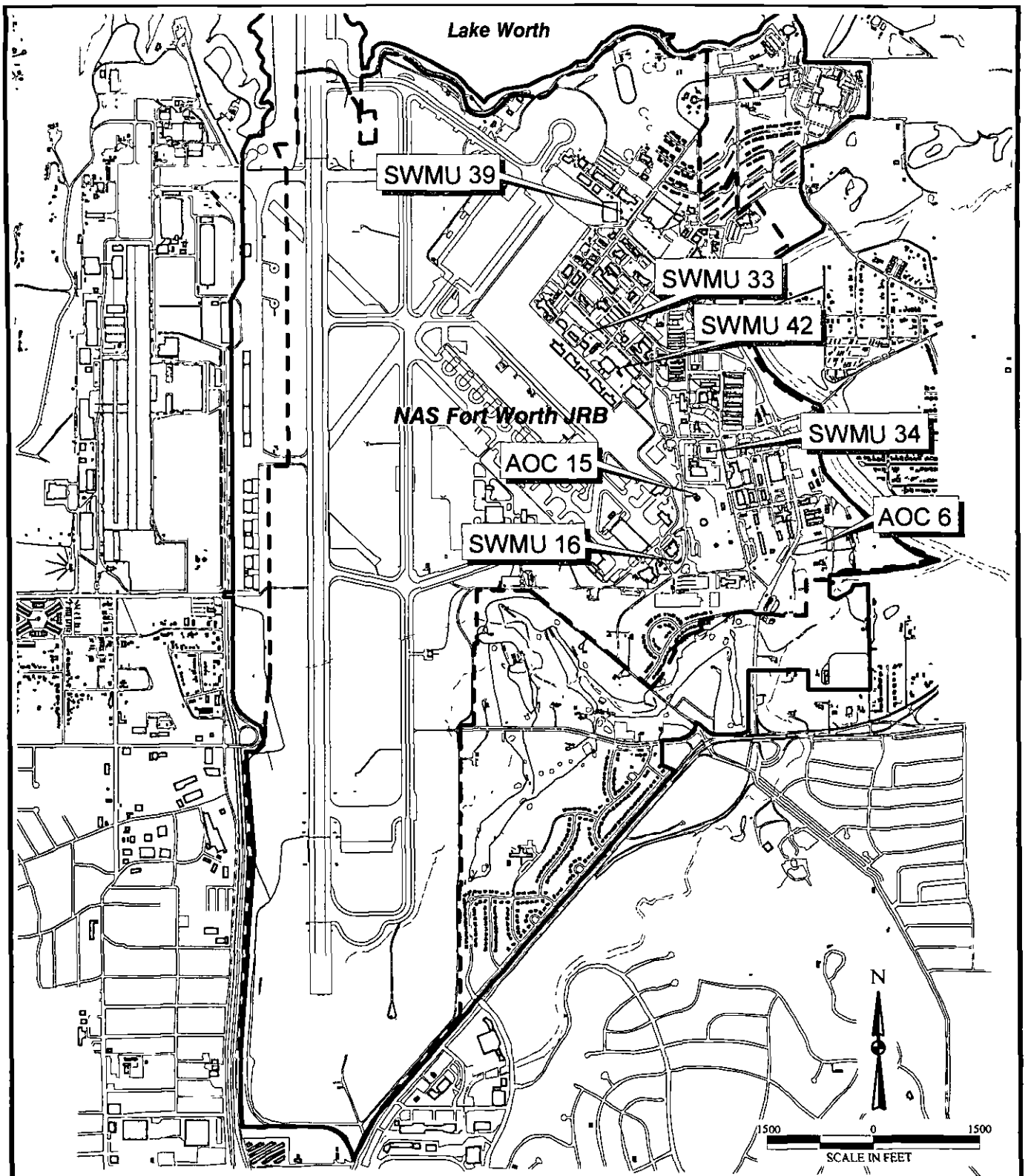
SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Status
SWMU 39	Building 1643 - Phase Dock Pheudraulics Shop Wheel and Tire Shop (all aircraft maintenance)	Approx. 1982 – 1990	PD-680 (Type II) (petroleum naptha solvent) (1420 gal/yr) - bowser, drummed JP-4 (600 gal/yr) - drummed Waste oil (12 gal/yr) - 200-gallon waste oil trailer Hydraulic fluid (192 gal/yr) - drummed, bowser Stripper (methylene chloride, toluene) (100 gal/yr) - drummed Mean Green Soap (12 gal/yr) - OWS Carbon remover (cresylic acid) (8 gal/yr) - OWS, used in process	No waste is currently stored in this area.
SWMU 42	Building 1414 - AGE Shop NDI Shop Possibly received waste from Building 1434 - Corrosion Control	Approx. 1982 – 1990	Waste PD-680 (Type II) (petroleum naptha solvent) (960 gal/yr) - drummed JP-4 (1500 gal/yr) - drummed Mogas (600 gal/yr) - drummed Diesel (1980 gal/yr) - drummed Waste oils (3300 gal/yr) - 500-gallon bowser Synthetic oils (1800 gal/yr) - drummed Hydraulic fluids (660 gal/yr) - drummed Antifreeze (960 gal/yr) - drummed Aircraft soap (1800 gal/yr) - sanitary sewer CitiKleen (solvent) (660 gal/yr) - OWS Die penetrant (aeromatic naptha, ethoxylated octophenol, biphenyl octyl phosphate, fluorescent dye) (220 gal/yr) - drummed Emulsifier (petroleum sulfonate, paraffin oil, ethoxylated octyenal, butyl zyethyl phosphate) (220 gal/yr) - drummed Developer (sodium chromate) (100 gal/yr) - sanitary sewer Fixer (ammonium thiosulfate, sodium thiosulfate, N-methylpyrrolidine) (200 gal/yr) - silver recovery, sanitary sewer 1,1,1-trichloroethane (unspecified amount) - drummed Possibly received waste from Building 1434 Thinner (toluol, MEK, isopropanol, naptha, xylene)(15 gal/yr) - drummed Waste paints and solvents (1500 gal/yr) - unspecified container Strippers (methylene chloride, toluene) (unspecified amount) - unspecified container	WAA 1413 is currently used as a storage area by a private contractor, and is not associated with SWMU 42 No waste is currently stored in the former SWMU location.

Table 1.1 (continued)
SWMU and AOC Summary Table
NAS Forth Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Status
AOC 6	RV Parking Area	Unknown startup date-Present	The following wastes may have been stored or utilized during maintenance activities on vehicles stored within this area: Waste oils (unspecified amount) - unspecified container Waste fuels (unspecified amount) - unspecified container Antifreeze (unspecified amount) - unspecified container Paints/thinners (unspecified amount) - unspecified container Solvents/cleaners (unspecified amount) - unspecified container	This AOC still serves as an RV Parking Area
AOC 15	Building 1190 - storage shed Area may have received runoff from SWMU 51	Unknown startup date-1990	PD-680 (unspecified quantity) - unspecified container Xylene (unspecified quantity) - unspecified container Possible runoff from SWMU 51 - central waste holding area	This area is currently maintained by the AFBCA and is no longer in use.

Sources
A.T Kearney 1989, RCRA Facility Assessment, PR/VSI Report, Carswell Air Force Base, Fort Worth, Texas
CH2M HILL, 1984, Installation Restoration Program Records Search for Carswell Air Force Base, Texas
The Earth Technology Corporation, 1993, Basewide Environmental Baseline Survey, Carswell Air Force Base, Texas
U.S. Air Force Occupational and Environmental Health Laboratory, Human Services Division, 1989, Hazardous Waste Technical Assistance Survey, Carswell AFB, Texas

FIGURES



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Revised 06 08 00 ap
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HYDRO GeoLogic INC.

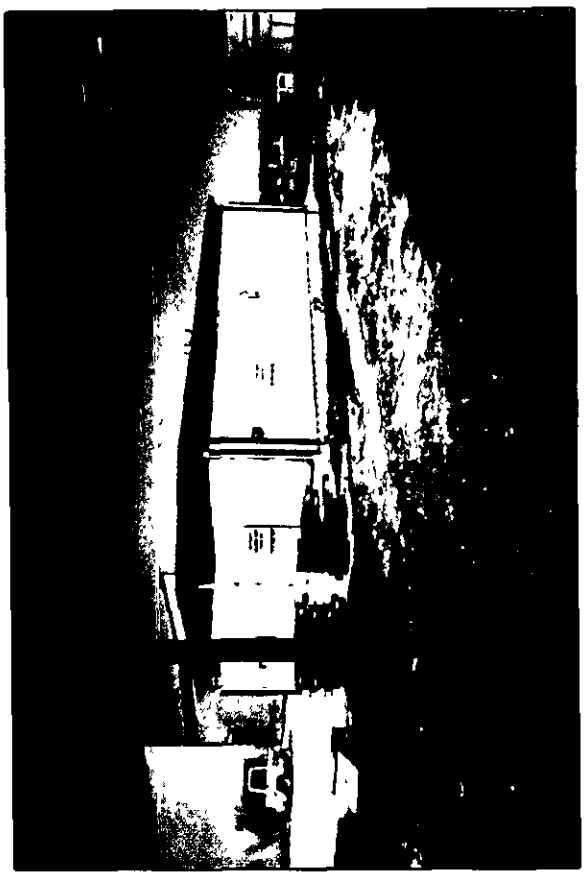
Legend

NAS Fort Worth JRB Boundary

Former Carswell AFB Boundary

Figure 1.1

SWMU and AOC Locations NAS Fort Worth JRB, Texas



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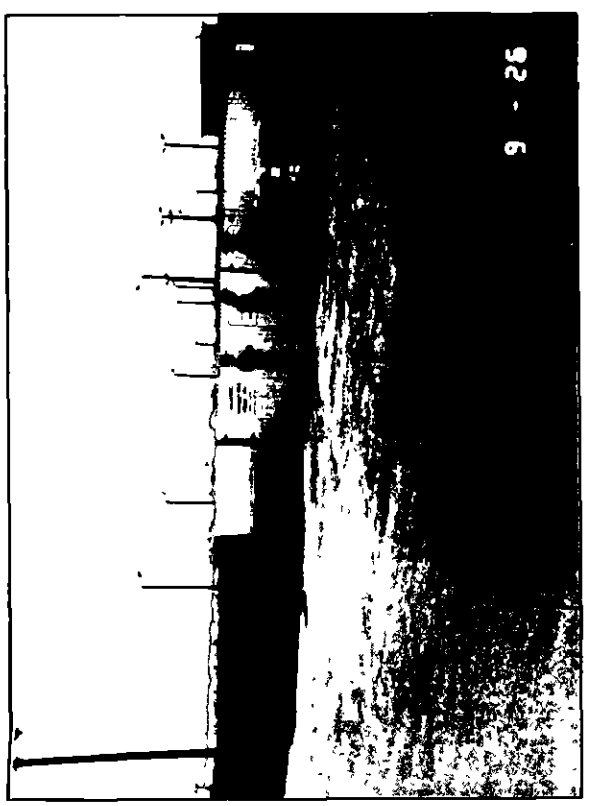

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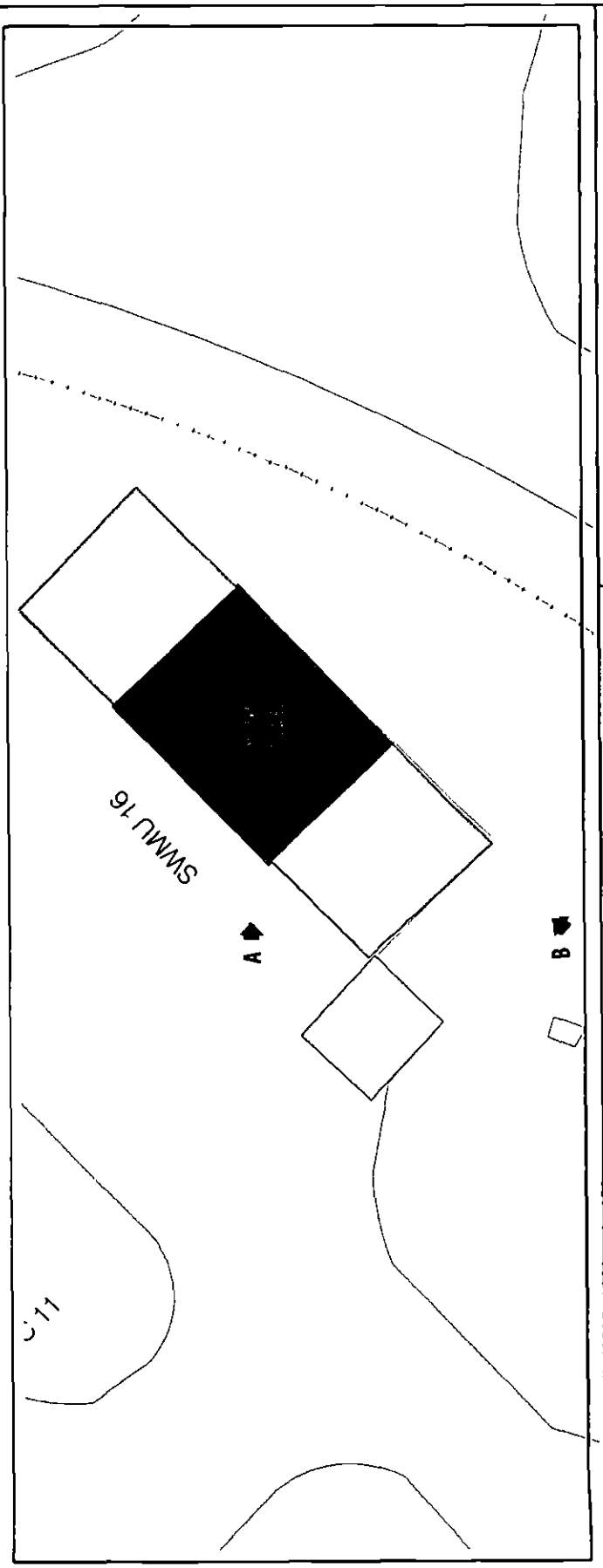

Figure 1.2
Photos and Location Map — SWMU 16

U S Air Force Center for Environmental Excellence
Brooks AFB, Texas

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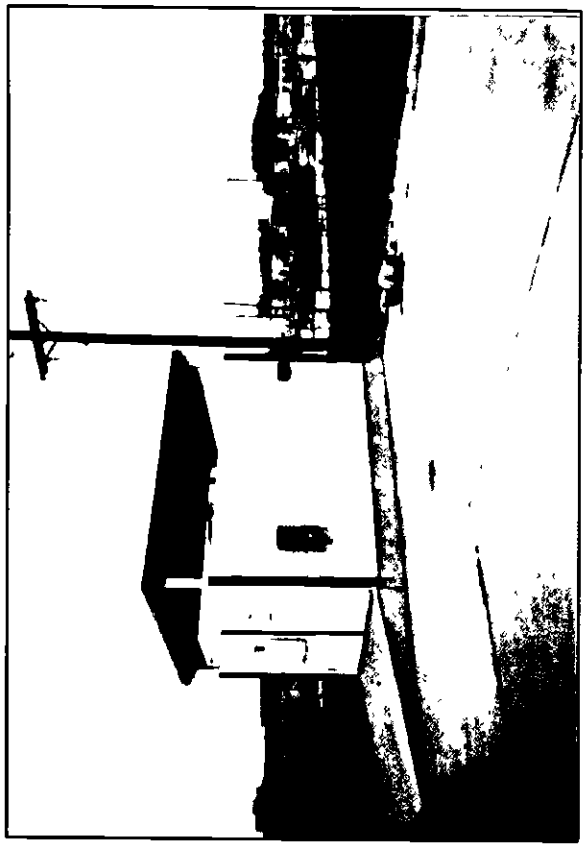

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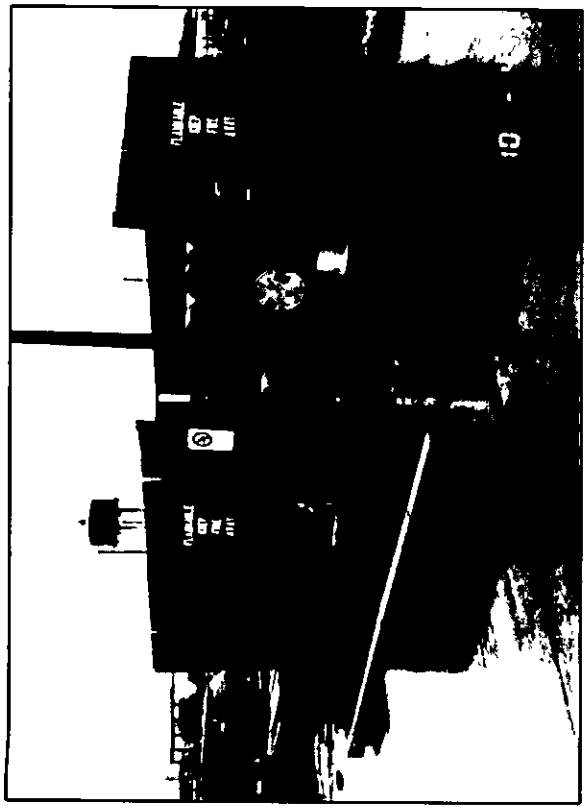

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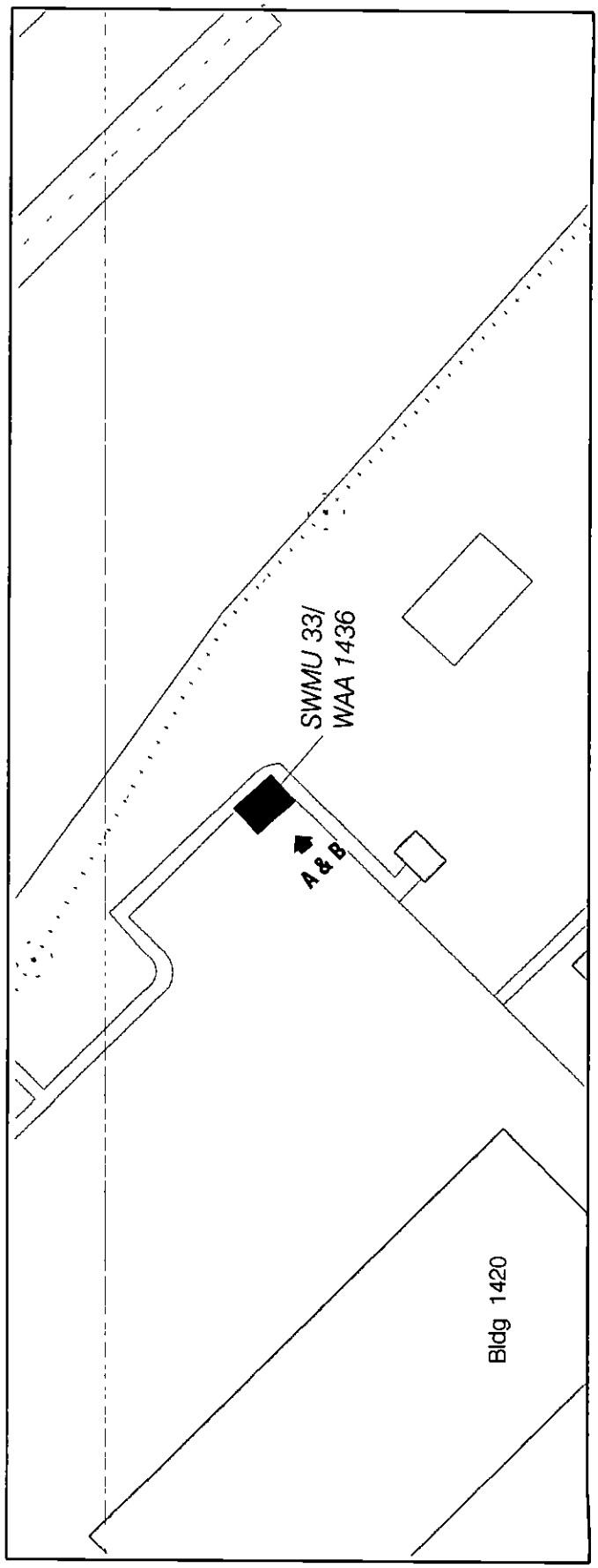

U S Air Force Center for Environmental Excellence
Brooks AFB, Texas

Figure 1.3
Photos and Location Map — SWMU 33

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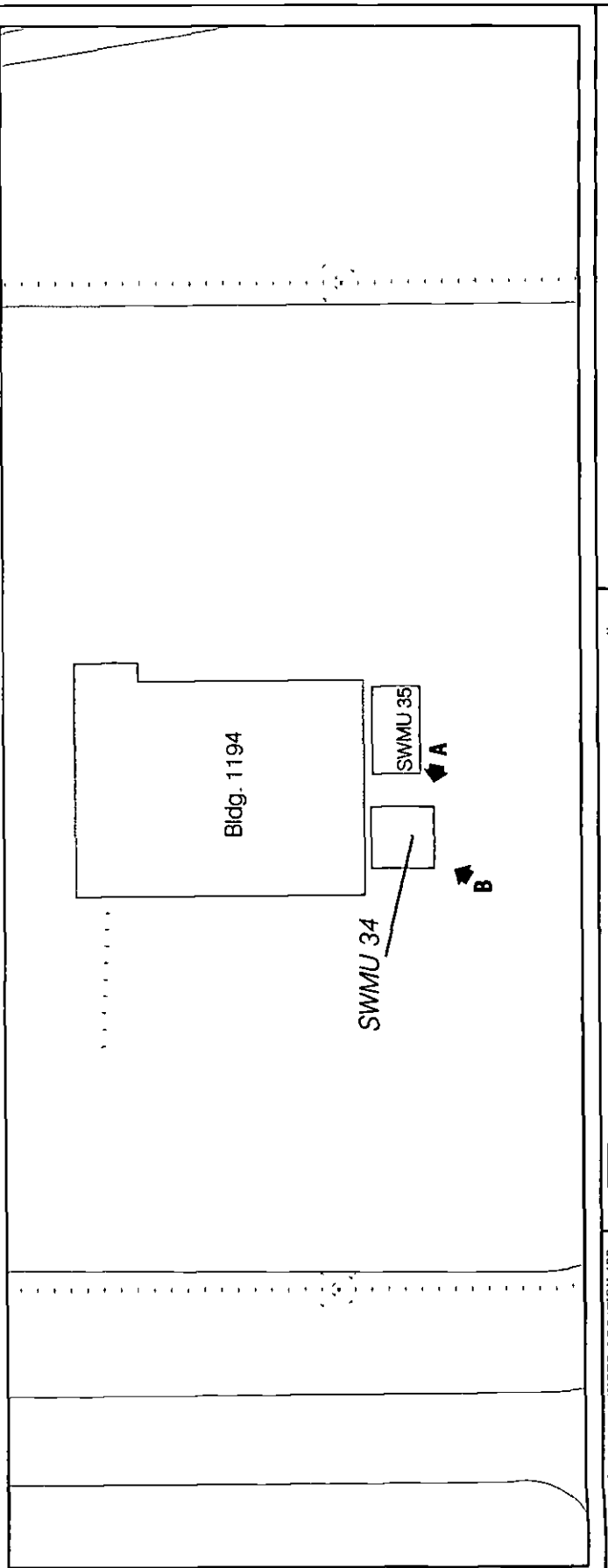

Figure 1.4
Photos and Location Map — SWMU 34

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Brooks AFB, Texas

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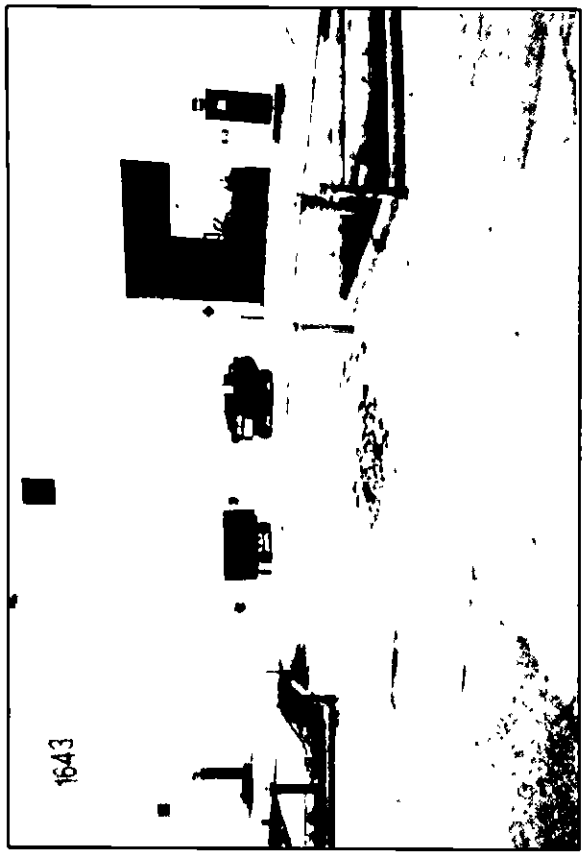

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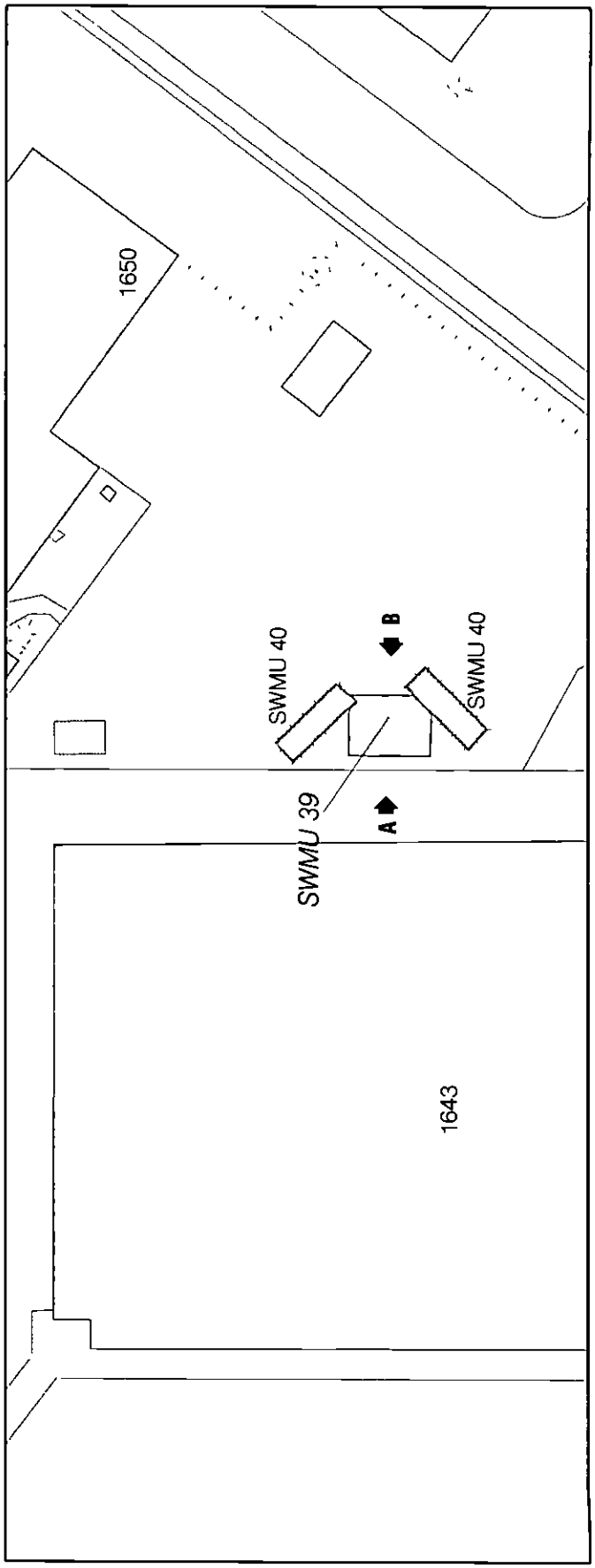

U S Air Force Center for Environmental Excellence
Brooks AFB, Texas

Figure 1.5
Photos and Location Map — SWMU 39

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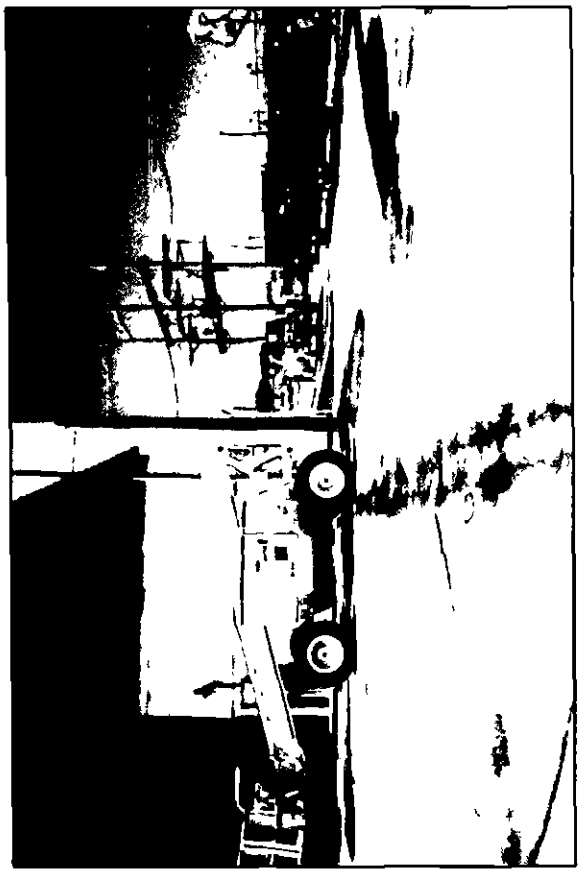

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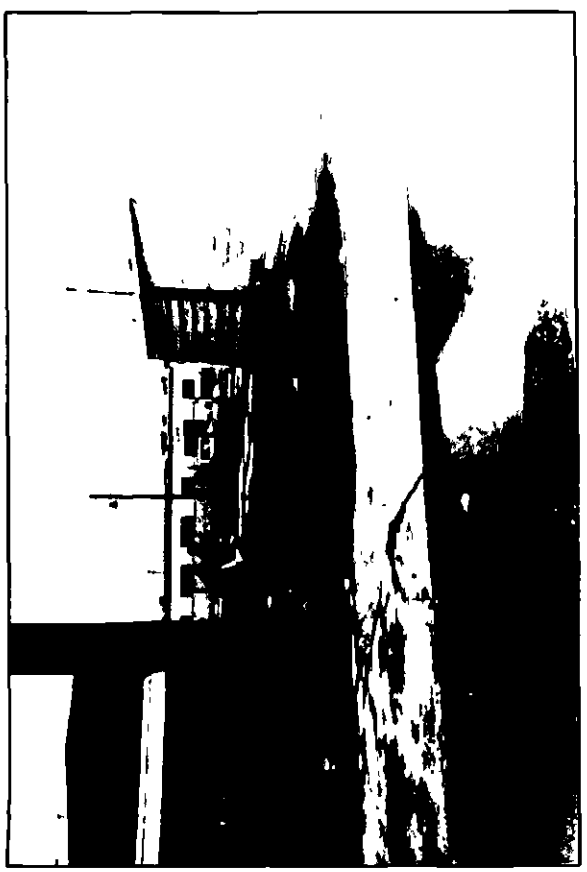

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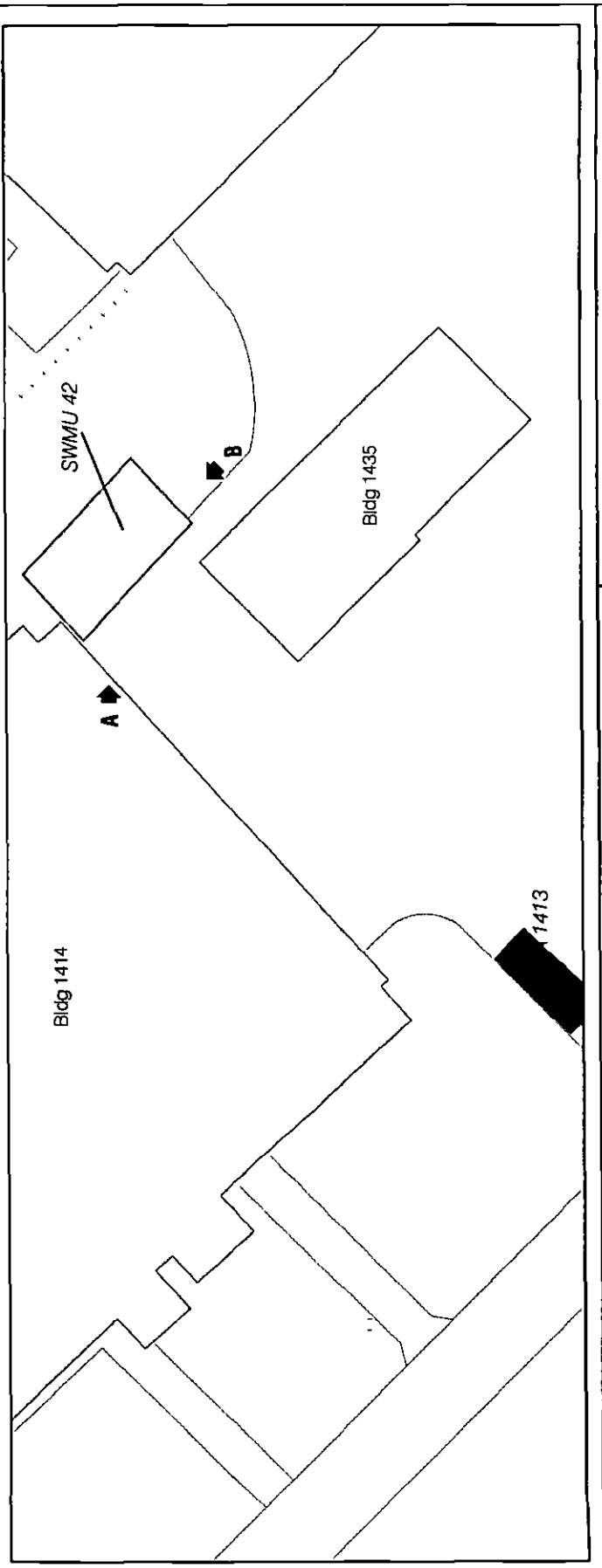

Figure 1.6
Photos and Location Map — SWMU 42

U S Air Force Center for Environmental Excellence
Brooks AFB, Texas

HYDRO GeoLogic Herndon, VA 20170

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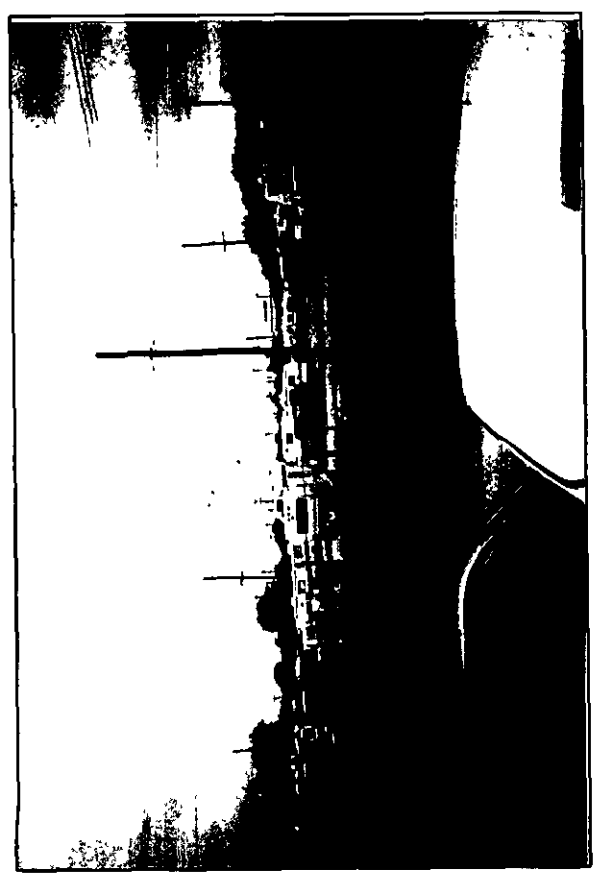
Source HGL Arc View Database

Photo Taken at Point B 05/14/98



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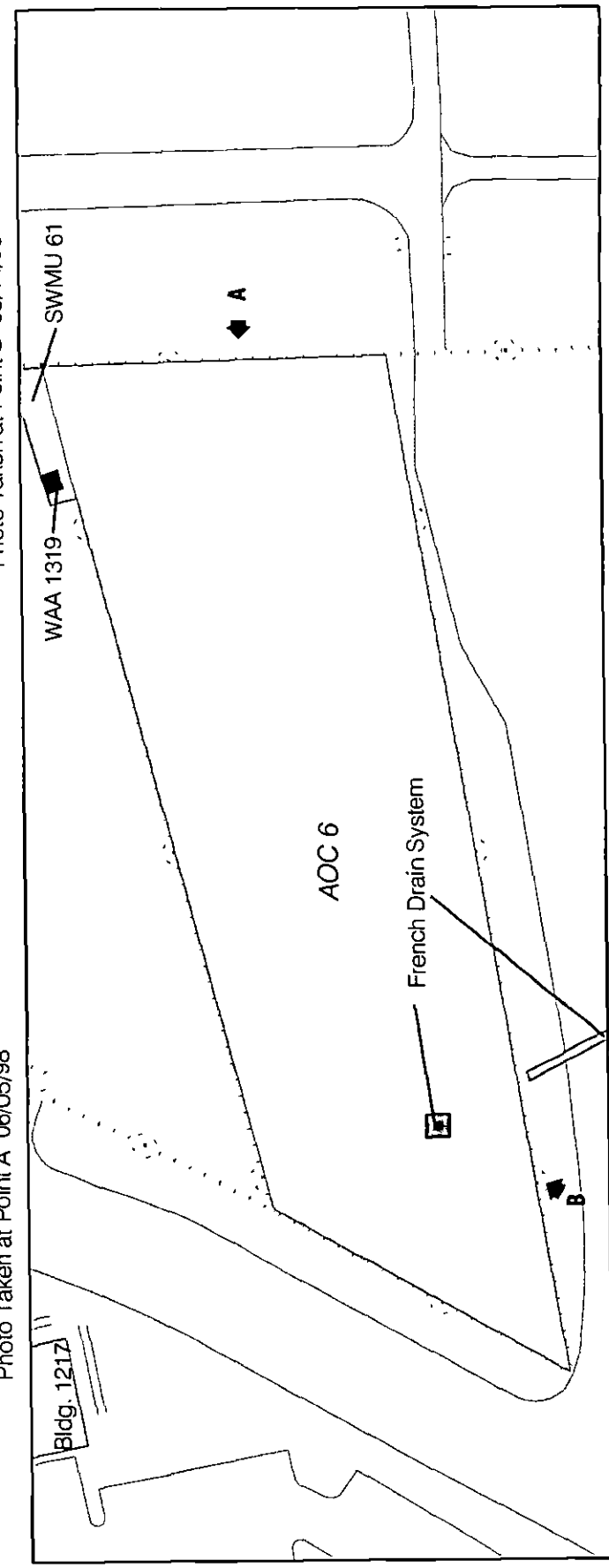

Figure 1.7
Photos and Location Map — AOC 6

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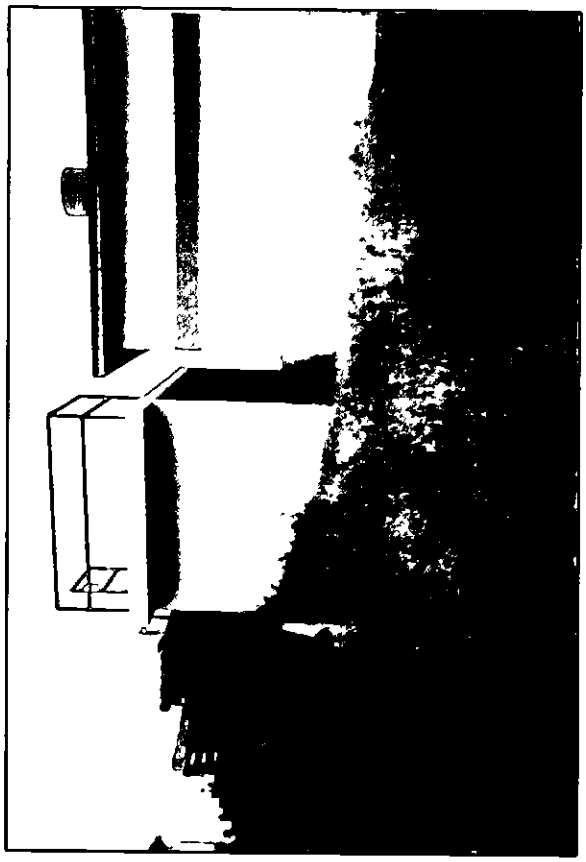
Herndon, VA 20170



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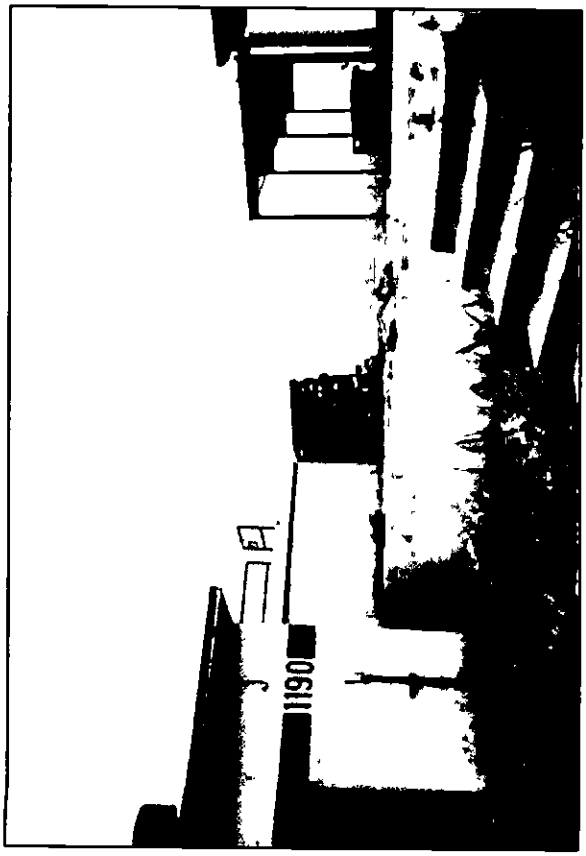

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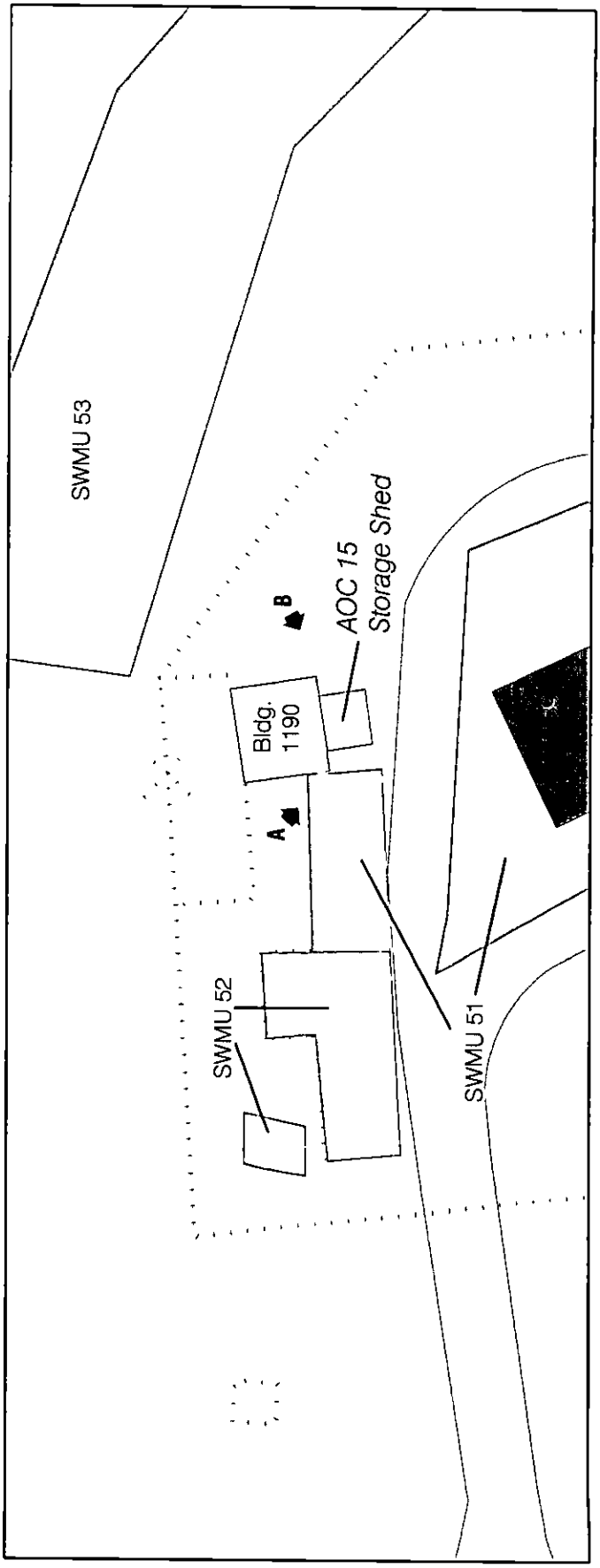

Figure 1.8
Photos and Location Map — AOC 15

U S Air Force Center for Environmental Excellence
Brooks AFB Texas

HYDRO Geologic
Herndon, VA 20170

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Source HGL Arc View Database

TAB

Section 2

2.0 SUMMARY OF EXISTING INFORMATION

The climate, physiography, geology, hydrology, biology, and demographics of the NAS Fort Worth JRB area are described in the following sections.

2.1 INSTALLATION ENVIRONMENTAL SETTING

2.1.1 Physiographic Province

NAS Fort Worth JRB is located along the border zone between two physiographic provinces. The southeastern part of the base is situated within the Grand Prairie section of the Central Lowlands Physiographic Province. Most of NAS Fort Worth JRB is located within this province. This region is characterized by broad, eastward-sloping terrace surfaces that are interrupted by westward-facing escarpments. The land surface is typically grass covered and treeless except for isolated stands of upland timber. The northwestern part of the NAS Fort Worth JRB area is situated within the Western Cross Timbers Physiographic Province. This area is characterized by rolling topography and a heavy growth of post and blackjack oaks (Radian, 1989a,b). Surface elevations for this region range from about 850 feet above National Geodetic Vertical Datum (NGVD) west of the base to approximately 550 feet above NGVD along the eastern side of the base. Figure 2.1 is a section of the Lake Worth, Texas, U.S. Geological Survey topographic map showing the relief of the NAS Fort Worth JRB/Air Force Plant 4 (AFP 4) region.

2.1.2 Regional Geology

The geologic units of interest for the region, from youngest to oldest, are as follows: (1) the Quaternary Alluvium (including fill material and terrace deposits), (2) the Cretaceous Goodland Limestone, (3) the Cretaceous Walnut Formation, (4) the Cretaceous Paluxy Formation, (5) the Cretaceous Glen Rose Formation, and (6) the Cretaceous Twin Mountains Formation. A generalized cross section of the geology beneath NAS Fort Worth JRB is presented in Figure 2.2 (Radian, 1989a,b). The areal limits of surface exposure of these units at NAS Fort Worth JRB are shown in Figure 2.3. Cross section locations and individual cross sections at NAS Fort Worth JRB are presented in Figures 2.4 through 2.7 (CH2M HILL, 1996). The regional dip of the stratigraphic units beneath NAS Fort Worth JRB is between 35 and 40 feet per mile in an easterly to southeasterly direction. NAS Fort Worth JRB is located on the relatively stable Texas Craton, west of the faults that lie along the Ouachita Structural Belt. No major faults or fracture zones have been mapped near the base

2.1.3 Groundwater

The water-bearing geologic formations located in the NAS Fort Worth JRB area may be divided into the following five hydrogeologic units, listed from the shallowest to the deepest: (1) an upper perched-water zone occurring in the alluvial terrace deposits associated with the Trinity River, (2) an aquitard of predominantly dry limestone of the Goodland and Walnut

Formations, (3) an aquifer in the Paluxy Sand, (4) an aquitard of relatively impermeable limestone in the Glen Rose Formation, and (5) a major aquifer in the sandstone of the Twin Mountains Formation. Each of these units is examined more explicitly in the following paragraphs. The relationship between these hydrogeologic units and geologic units is illustrated in Figure 2.8 (Radian, 1989a,b).

2.1.3.1 Alluvial Terrace Deposits

The uppermost groundwater in the area occurs within the pore space of the grains of coarse sand and gravels deposited by the Trinity River. In some parts of Tarrant County, primarily in those areas adjacent to the Trinity River, groundwater from the terrace deposits is used for irrigation and residential use. Groundwater from the terrace deposits is rarely used as a source of potable water due to its limited distribution and susceptibility to surface/storm water pollution (CH2M HILL, 1984).

Recharge to the water-bearing deposits occurs through infiltration from precipitation and from surface water bodies. Extensive on-site pavement and construction restricts this recharge. Additional recharge, however, comes from leakage in water supply lines, sewer systems, storm drains, and cooling water systems. In 1991, this leakage was calculated to be in excess of approximately 115.5 million gallons for NAS Fort Worth JRB and AFP 4 (General Dynamics Facility Management, 1992). This inflow of water to the shallow aquifer effects local groundwater flow patterns and contamination transport, along with increasing hydraulic head, which acts as the force to potentially drive water into lower aquifer systems. The estimated hydraulic conductivity of the alluvial aquifer is 4.57 gallons per day per square foot (gpd/ft^2) (Radian, 1989a,b).

This flow between aquifers is restricted by the Goodland/Walnut Formations; therefore, the alluvial terrace groundwater is not hydraulically connected to the underlying aquifers at NAS Fort Worth JRB. The primary water flow in the terrace deposits is generally eastward toward the West Fork Trinity River, although localized variations exist across the entire site. The hydraulic gradient across the base is variable, reflecting variations in the flow direction and localized recharge. Discharge from the aquifer occurs into surface water on-site, specifically Farmers Branch Creek.

Potentiometric maps of NAS Fort Worth JRB and AFP 4 alluvial terrace groundwater are presented as Figure 2.9 and Figure 2.10. Both the January 1999 and July 1999 groundwater elevation data show an easterly trend in groundwater flow over the area of NAS Fort Worth JRB toward the West Fork Trinity River (HydroGeoLogic, 1999b,d).

2.1.3.2 Goodland/Walnut Aquitard

The groundwater within the terrace deposits is isolated from groundwater within the lower aquifers by the low permeability of the Goodland Limestone and Walnut Formations. The primary inhibitors to vertical groundwater movement within these units are the fine-grained

clay and shale layers that are interbedded with layers of limestone. Some groundwater movement does occur between the individual bedding planes of both of these units, but the vertical hydraulic conductivity has been calculated to range between 1.2E-09 centimeters per second (cm/sec) to 7.3E-11 cm/sec for the NAS Fort Worth JRB and AFP 4 area. This corresponds to a vertical flow rate that ranges between 1.16E-03 feet per day (ft/d) to 5.22E-03 ft/d (ESE, 1994).

At the AFP 4 "window area," the Goodland/Walnut Aquitard is breached, and the alluvial terrace groundwater is in direct contact with the groundwater in the Paluxy Aquifer. Several wells and borings have been advanced at NAS Fort Worth JRB to the Goodland/Walnut Aquitard. There is no evidence that a similar window exists on the base property. All five monitoring wells that fully penetrate the Paluxy Aquifer on NAS Fort Worth JRB property are represented in cross sections (Figures 2.5 through 2.7). These wells are USGS01P, USGS05P, USGS06P, USGS07P, and Paluxy 1 (P1).

2.1.3.3 Paluxy Aquifer

The Paluxy Aquifer is an important source of potable groundwater for the Fort Worth area. Many of the surrounding communities, particularly White Settlement, obtain their municipal water supplies from the Paluxy Aquifer. Groundwater from the Paluxy is also used in some of the surrounding farms and ranches for agricultural purposes. Due to the extensive use of the Paluxy Aquifer, water levels have declined significantly over the years. Water levels in the NAS Fort Worth JRB vicinity have not decreased as much as in the Fort Worth area due to its proximity to the Lake Worth recharge area and the fact that the base does not obtain water from the Paluxy Aquifer. Drinking water at the base is supplied by the city of Fort Worth, which uses Lake Worth as its water source. The groundwater of the Paluxy Aquifer is contained within the openings created by gaps between bedding planes, cracks, and fissures in the sandstones of the Paluxy Formation. Just as the Paluxy Formation is divided into upper and lower sand members, the aquifer is likewise divided into upper and lower aquifers. The upper sand is finer grained and contains a higher percentage of shale than the lower sand. In 1989, Radian estimated the hydraulic conductivity and transmissivity to be 130 to 140 gpd/ft^2 and 1,263 to 13,808 gpd/ft^2, respectively.

2.1.3.4 Glen Rose Aquitard

Below the Paluxy Aquifer are the fine-grained limestone, shale, marl, and sandstone beds of the Glen Rose Formation. The thickness of the formation ranges from 250 to 450 feet. Although the sands in the Glen Rose Formation yield small quantities of groundwater in the area, the relatively impermeable limestone acts as an aquitard, restricting water movement between the Paluxy Aquifer above and the Twin Mountains Aquifer below.

2.1.3.5 Twin Mountains Aquifer

The Twin Mountains Formation is the oldest and deepest water supply source used in the NAS Fort Worth JRB area. The Twin Mountains Formation occurs approximately 600 feet below NAS Fort Worth JRB, with a thickness of between 250 to 430 feet. Recharge to the Twin Mountains Aquifer occurs west of NAS Fort Worth JRB, where the formation out crops. Groundwater movement is eastward in the downdip direction. The Twin Mountains groundwater occurs under unconfined conditions in the recharge area and becomes confined as it moves downdip. Transmissivities in the Twin Mountains Aquifer range from 1,950 to 29,700 gpd/ft^2 and average 8,450 gpd/ft^2 in Tarrant County. Permeabilities range from 8 to 165 gpd/ft^2 and average 68 gpd/ft^2 in Tarrant County (CH2M HILL, 1984).

2.1.3.6 Water Well Survey Results

An inventory of water supply wells within a one-half-mile radius of the NAS Fort Worth JRB boundary was conducted by HydroGeoLogic in 1997. Figure 2.11 illustrates the locations of 59 wells that were identified from TWC records. All of these wells were installed and completed in the Paluxy Aquifer or the Twin Mountains Aquifer. No active water wells are located on NAS Fort Worth JRB property. Water is supplied to the base by the city of Fort Worth, which obtains water from Lake Worth.

2.1.4 Surface Water

The topography of NAS Fort Worth JRB is fairly flat except for the lower lying areas along the tributaries of the Trinity River. The land surface slopes gently northeastward toward Lake Worth and eastward toward the West Fork Trinity River. Surface elevations range from about 690 feet above NGVD at the southwest corner of the base to approximately 550 feet above NGVD, along the eastern side of the base.

NAS Fort Worth JRB is located within the Trinity River Basin, adjacent to Lake Worth. The lake is a man-made reservoir created by damming the Trinity River at a point just northeast of the base. The surface area of the lake is approximately 2,500 acres. Lake Worth receives a limited amount of storm water runoff from NAS Fort Worth JRB during and immediately after rainfall events. Elevation of the water surface is fairly consistent at approximately 594 feet above NGVD, the fixed elevation of the dam spillway. Part of the eastern boundary of NAS Fort Worth JRB is defined by the West Fork Trinity River. River flow is towards the southeast into the Gulf of Mexico. Because the Trinity River has been dammed, the 100- and 500-year flood plains do not extend more than 400 feet from the center of the river or any of its tributaries.

Surface drainage is mainly east towards the West Fork Trinity River. The base is partly drained by Farmers Branch Creek, a tributary of the West Fork Trinity River. Farmers Branch Creek begins within the community of White Settlement and flows eastward. Just south of AFP 4, Farmers Branch flows under the runway within two large culverts identified

as an aqueduct. Most of the base drainage is intercepted by a series of storm drains and culverts, directed to OWSs, and discharged to the West Fork Trinity River downstream of Lake Worth. A small portion of the north end of the base drains directly into Lake Worth.

NAS Fort Worth JRB currently has three storm water discharge points that are subject to National Pollution Discharge Elimination System (NPDES) requirements. Each discharge point is monitored weekly for chemical oxygen demand, oil and grease, and pH. The permit has been violated on numerous occasions. In 1979, these violations prompted the USEPA to formally demand a corrective action (CH2M HILL, 1984). Several additional sampling points were established to determine the flow of pollutants onto and off of the base. Samples were collected for a variety of parameters (spills, fish kills, odors, and oil sheen) as circumstances dictated (Radian, 1989a,b).

2.1.5 Air

The climate in the Fort Worth area is classified as humid subtropical with hot summers and dry winters. Tropical maritime air masses control the weather during much of the year, but the passage of polar cold fronts and continental air masses can create large variations in winter temperatures. The average annual temperature in the area is 66 degrees Fahrenheit (°F), and monthly mean temperatures vary from 45°F in January to 86°F in July. The average daily minimum temperature in January is 35°F, and the lowest recorded temperature is 2°F. The average daily maximum temperature in July and August is 95°F, and the highest temperature ever recorded at the base was 111°F. Freezing temperatures occur at NAS Fort Worth JRB an average of 33 days per year (TNRCC, 1996d).

Mean annual precipitation recorded at the base is approximately 32 inches. The wettest months are April and May, with a secondary maximum in September. The period from November to March is generally dry, with a secondary minimum in August. Snowfall accounts for a small percentage of the total precipitation between November and March. Thunderstorm activity occurs at the base an average of 45 days per year, with the majority of the activity between April and June. Hail may fall 2 to 3 days per year. The maximum precipitation ever recorded in a 24-hour period is 5.9 inches. On the average, measurable snowfall occurs 2 days per year (TNRCC, 1996d).

Lake evaporation near NAS Fort Worth JRB is estimated to be approximately 57 inches per year. Evapotranspiration over land areas may be greater or less than lake evaporation depending on vegetative cover type and moisture availability. Average net precipitation is expected to be equal to the difference between average total precipitation and average lake evaporation, or approximately minus 25 inches per year. Mean cloud cover averages 50 percent at NAS Fort Worth JRB, with clear weather occurring frequently during the year. Some fog is present an average of 83 days per year. Wind speed averages 7 knots; however, a maximum of 80 knots has been recorded. Predominant wind direction is from the south-southwest throughout the year (TNRCC, 1996d).

Air quality in the Dallas-Fort Worth area meets USEPA National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, and respirable particulate matter. However, ozone levels exceed national standards, and the ozone pollution level in the area has a Federal classification of moderate. During 1996, ozone measurements showed an arithmetic mean concentration of 0.033 parts per million in North Tarrant County. Actual exceedances of the national standards for ozone concentrations was calculated to be 2 days for the measurement station in North Tarrant County. Additional control measures are being implemented as a result of 1990 Federal Clean Air Act mandates to bring the area into compliance with the national standard (TNRCC, 1996d).

2.1.6 Biology

Approximately 374 acres, or 14 percent, of NAS Fort Worth JRB is considered unimproved, indicating the presence of seminatural to natural biological/ecological conditions. The base lies in the Cross Timbers and Prairies Regions of Texas, where native vegetation is characterized by alternating bands of prairies and woodlands. The higher elevations on the base are covered by native and cultivated grasses such as little bluestem, Indian grass, big bluestem, side oats, grama, and buffalo grass. Forested areas occur primarily on the lower land and along the banks of streams. Common wood species include oak, elm, pecan, hackberry, and sumac. Several non-native species such as catalpa and chinaberry are common (Radian, 1989a,b).

Typical wildlife on the base includes black-tailed jackrabbits in grassy areas along the runway. In addition, there are cotton-tail rabbits, gray squirrels, and opossums in the wooded areas. Common birds include morning doves, meadowlarks, grackles, and starlings. Hunting and trapping are not allowed on the base, but in the nearby rural areas they are a very popular form of recreation (Radian, 1989a,b).

Reported game fish include black bass, sunfish, and catfish, all of which can be found in Lake Worth, Farmers Branch Creek, and one small pond located on base near the golf course equipment shed. According to the Texas Department of Parks and Wildlife and the U.S. Fish and Wildlife Service, there are no threatened or endangered species known to occur on NAS Fort Worth JRB. None of the federally listed endangered plant species for Texas are known to occur within 100 miles of Tarrant County. Of the federally listed endangered animals species, only the peregrine falcon and the whooping crane are known to occasionally inhabit the area; however, none of these is suspected to reside in the vicinity of NAS Fort Worth JRB (Radian, 1989a,b).

2.1.7 Demographics

The following sections describe the regional and site-specific demographics as they relate to the Fort Worth, Texas area and NAS Fort Worth JRB.

2.1.7.1 Regional Demographics

Approximately 1,278,606 people reside within Tarrant County, Texas (U.S. Department of Commerce, 1996). Of this population, 485,650 reside within the city limits of Fort Worth. Several smaller cities and villages make up the remainder of the population. The communities of White Settlement, Lake Worth, Westworth Village, River Oaks, and Sansom Park lie within a 3- mile radius of NAS Fort Worth JRB. The following populations that reside in the cities and villages are based on 1994 census data: White Settlement (city) 16,502; Lake Worth (city) 4,694; Westworth Village (town) 2,502; River Oaks (city) 6,747; and Sansom Park (city) 4,136 (U.S. Department of Commerce, 1994). Six schools are within a 2-mile radius of NAS Fort Worth JRB; the closest is 0.5 miles south (RUST, 1995).

The area surrounding NAS Fort Worth JRB is highly urbanized due to its proximity to the city of Fort Worth. The area is comprised of a combination of residential, commercial, and light industrial properties that employ the majority of local residents (RUST, 1995).

2.1.7.2 Site-Specific Demographics

The current full-time population at NAS Fort Worth JRB is approximately 3,600 people, comprising 400 officers, 1,400 civilians, and 1,800 active reservists. Part-time military reservists will increase this population to over 6,000 military personnel (CH2M HILL, 1996).

Approximately 86 percent of NAS Fort Worth JRB has been developed by way of buildings, roads, parking lots, runways, and housing and recreational areas. On-site activities include various maintenance, inspection, and support activities for fuel systems, weapons, jet engines, AGE, and specialized ground equipment (HydroGeoLogic, 1999b).

2.2 SITE-SPECIFIC ENVIRONMENTAL SETTING

The following sections describe the site-specific environmental setting of NAS Fort Worth JRB.

2.2.1 Site-Specific Soils

The U.S. Soil Conservation Service has identified four major soil associations in the area of NAS Fort Worth JRB The first association is the surficial soils of the nearly level to gently sloping clayey soils of the Sanger-Purves-Slidell Association. Second is the Aledo-Bolar-Sanger Association, which is located within the southwestern portion of the Sanger-Purves-Slidell Association and is characterized as an increasingly loamy clayey soil of gentle to moderate slope. The third association, the Bastsil-Silawa Association separates the Sanger-Purves-Slidell Association from the Frio-Trinity Association. The Bastsil-Silawa Association is characterized as a sandy clay loam of nearly level slope (ESE, 1994). The clayey soils of the Frio-Trinity Association make up the fourth soil association and are located along the flood

plain of the West Fork Trinity River. The areal limits of each of these soil associations and their occurrence on-site are shown in Figure 2.12.

2.2.2 Site-Specific Geology

The majority of NAS Fort Worth JRB is covered by alluvium deposited by the Trinity River during flood stages. The Quaternary Period alluvium (Holocene Epoch) occurs downstream from the Lake Worth Dam in the current flood plain of the West Fork Trinity River, on the east side of the facility. Older alluvial deposits and terrace deposits (Pleistocene Epoch) also occur on-site. The alluvium is composed of gravel, sand, silt, and clay of varying thicknesses and lateral extent. The thickness of these materials ranges from 0 to 60 feet. Fill material is also included within these deposits where landfills, waste pits, excavation sites, and other construction activities have altered the original land surface. This fill material is made up of clay, silt, sand, and gravel mixtures, but may also contain debris and other waste (Radian, 1989a,b).

Below the alluvial terrace deposits are the Cretaceous-age Goodland and Walnut Formations, which form the bedrock surface beneath NAS Fort Worth JRB. Both formations consist of interbedded, fossiliferous, hard limestone and calcareous shale. The upper formation, the Goodland Limestone, is exposed on the southern portion of the base, south of White Settlement Road. The Goodland is a chalky-white, fossiliferous limestone and marl. The thickness of the Goodland Limestone ranges from 20 to 25 feet. Below the Goodland Formation is the Walnut Formation (or Walnut Clay). The Walnut Formation is exposed in a small area along the shores of Lake Worth and Meandering Road Creek. This formation is a shell agglomerate limestone with varying amounts of clay and shale. It ranges in thickness from 25 to 35 feet throughout the site except where erosion has produced a few thinner areas. Subsurface investigations have located troughs and paleochannels that are eroded into the top of the bedrock at NAS Fort Worth JRB. These paleochannels are typical of an erosional surface modified by fluvial processes and are filled with sand and gravel deposits ranging in thickness from 15 to 35 feet (CH2M HILL, 1996).

Below the Walnut Formation is the Paluxy Formation (or Paluxy Sand). The Paluxy Formation underlies all of NAS Fort Worth JRB. The formation consists of several thick sandstone layers that are separated by thin, discontinuous shale and claystone layers. Sandstones in the formation are primarily a fine-to coarse-grained sand with minor amounts of clay, sandy clay, pyrite, lignite, and shale. The lower section of the Paluxy is generally coarser-grained than the upper section (CH2M HILL, 1996). Total formation thickness ranges from 130 to 175 feet, with variable thickness and occurrence of individual layers across the site. Only one unit in this formation, a shale/silty shale, can be extensively mapped across the base.

The older Glen Rose and Twin Mountains Formations are not exposed at NAS Fort Worth JRB. The Glen Rose Formation consists primarily of calcareous sedimentary rock and some sands, clays, and anhydrite. The Glen Rose caps the Twin Mountain Formation, which is the

oldest Cretaceous Formation in the NAS Fort Worth JRB area. The Twin Mountain Formation consists of a basal conglomerate of chert and quartz, grading upward into coarse- to fine-grained sand interspersed with varicolored shale

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FIGURES

Figure 2.1

Lake Worth Topographic Map Regional

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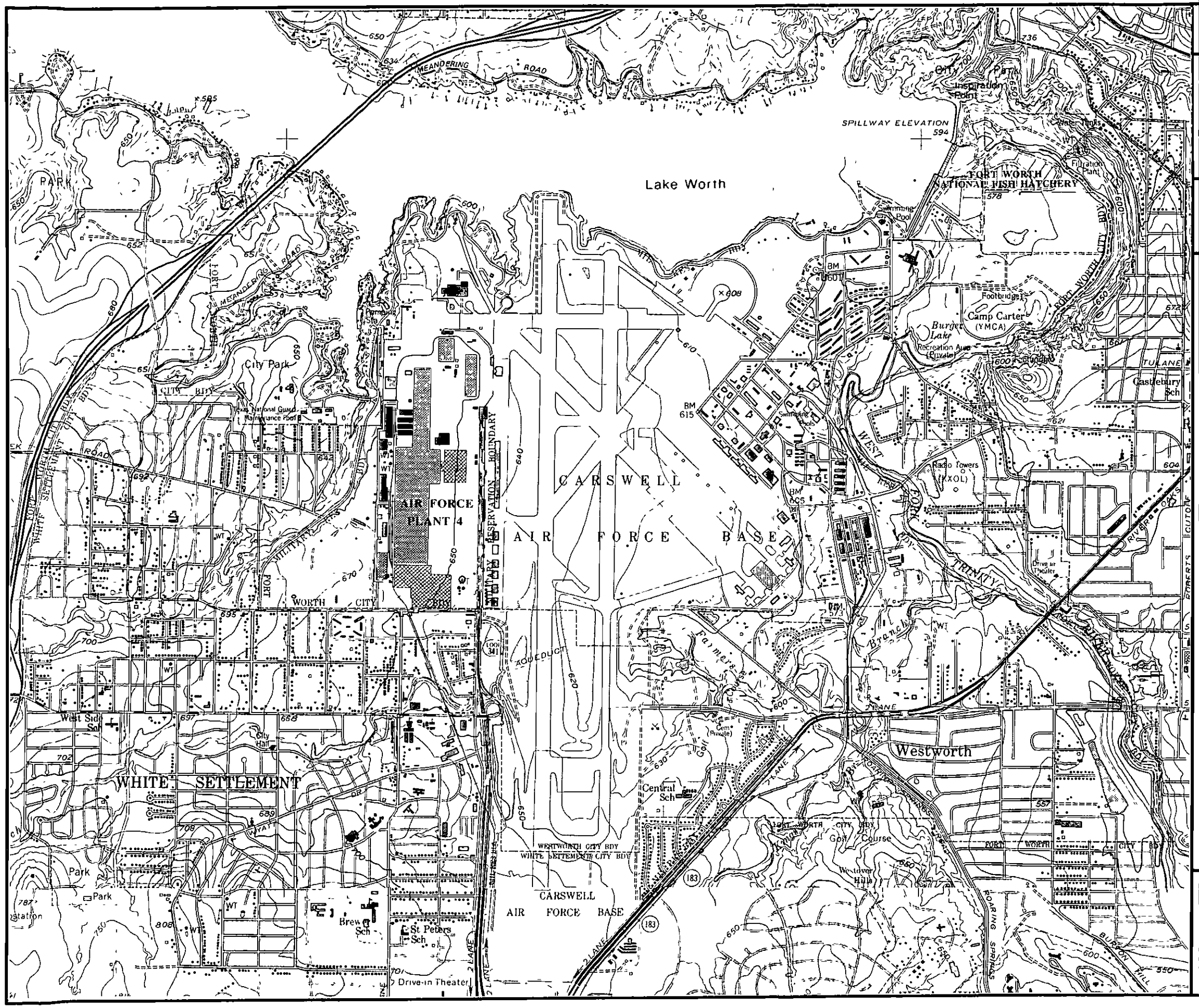

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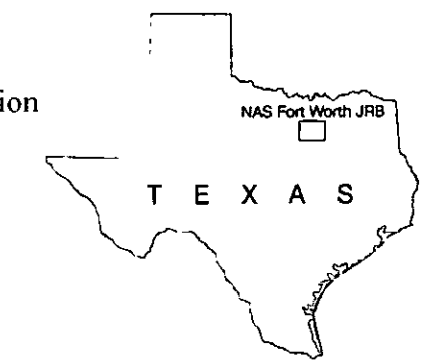

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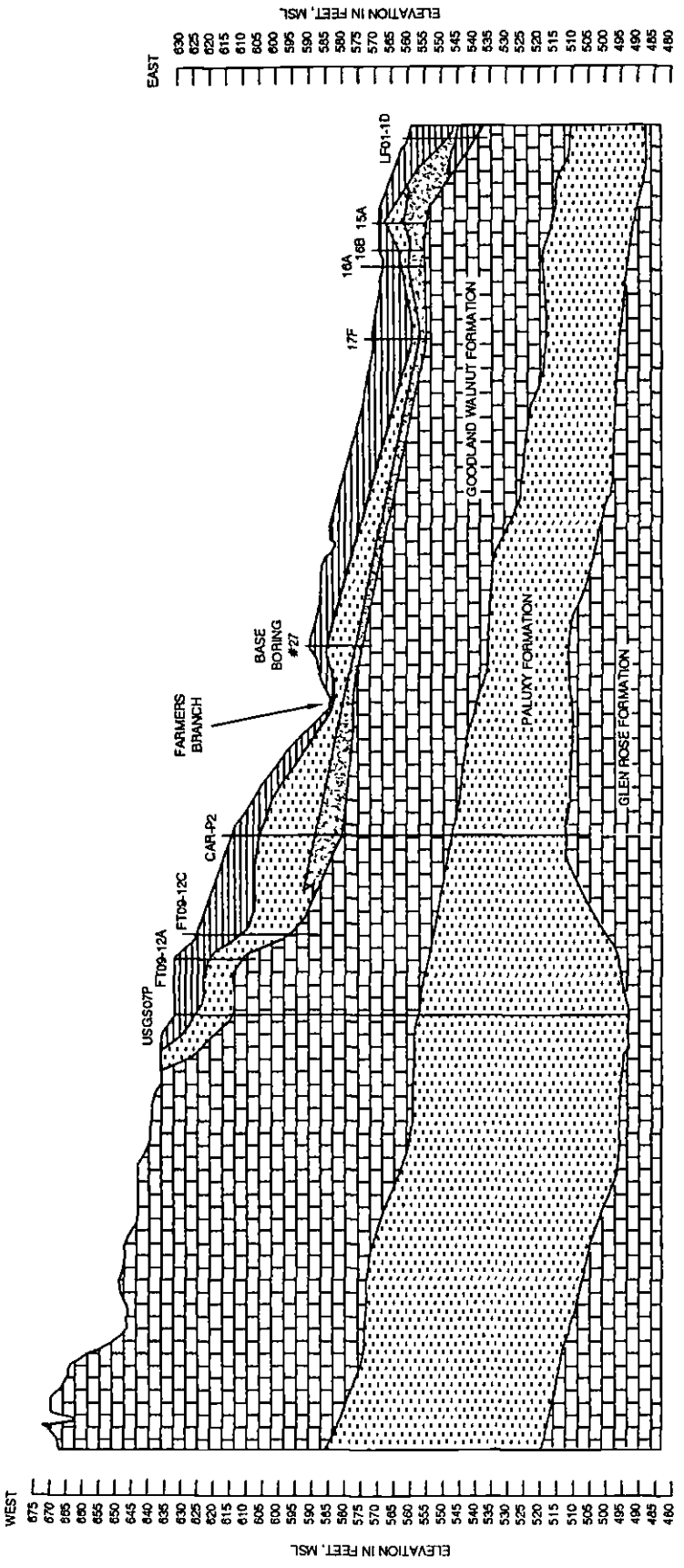
HYDRO GeoLogic INC



NOTES

1 STRATIGRAPHIC CONDITIONS ARE KNOWN ONLY AT THE MONITORING WELLS AND BORINGS, CONTACTS ARE INTERPOLATED BETWEEN CONTROL POINTS

2 WITH THE EXCEPTION OF THE AREA BETWEEN USGS07P AND CAR-P2, THE CONTACT BETWEEN THE GOODLAND WALNUT AND PALUXY FORMATIONS DISPLAYS THE REGIONAL DIP OF 35-40 FEET PER MILE

800 400 0 800
HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 28X

Legend

- Clay and Fill Material
- Gravel
- Sand
- Limestone and Shale

Figure 2.2
Generalized Geologic Cross Section of NAS Fort Worth JRB, Texas

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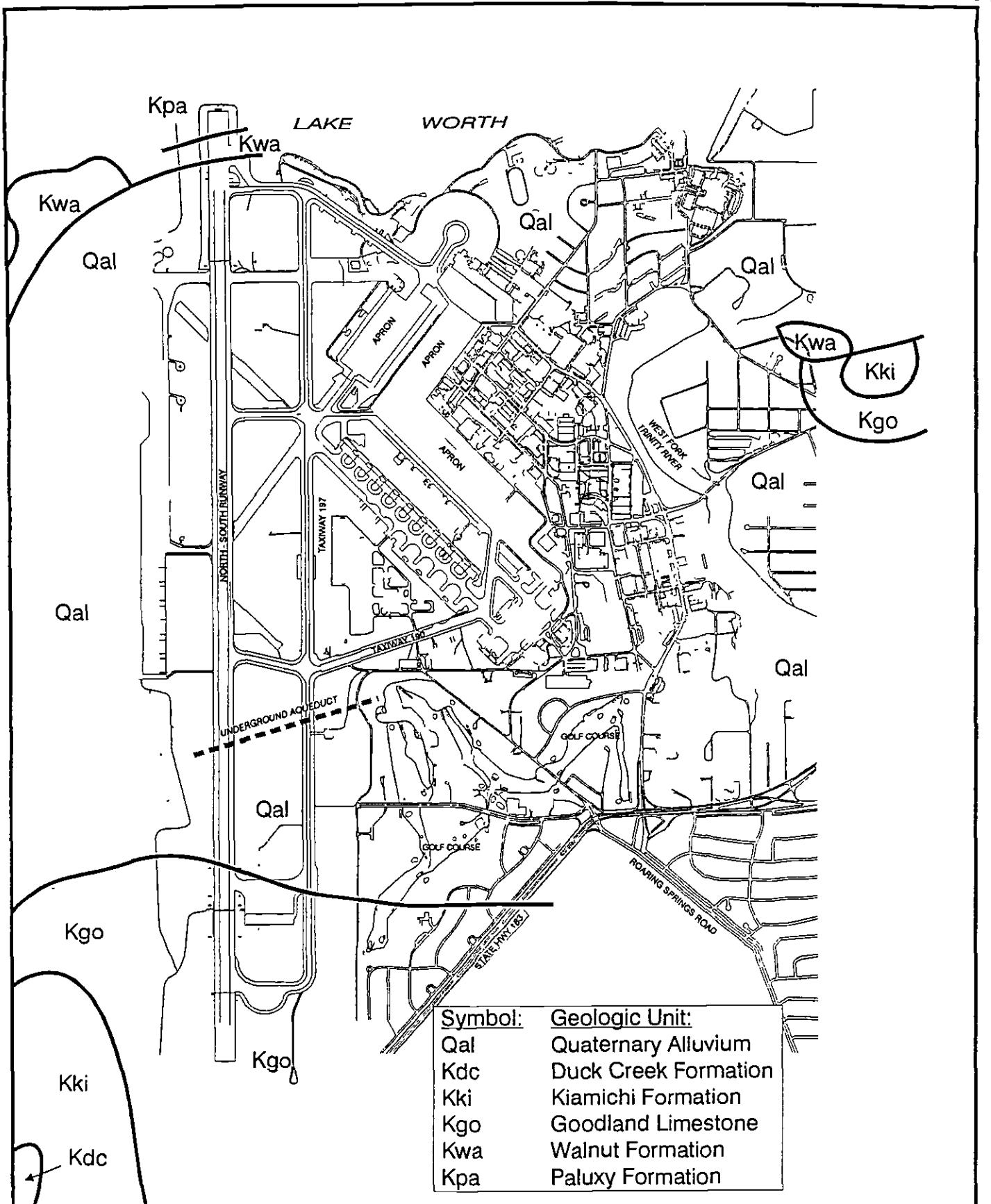

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Revised 06/09/00 ap
Map Source Radian, 1989

HYDRO GeoLogic INC.

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Figure 2.3
Areal Distribution of Geologic Units of NAS Fort Worth JRB, Texas

Figure 2.4

Cross Section Location Map

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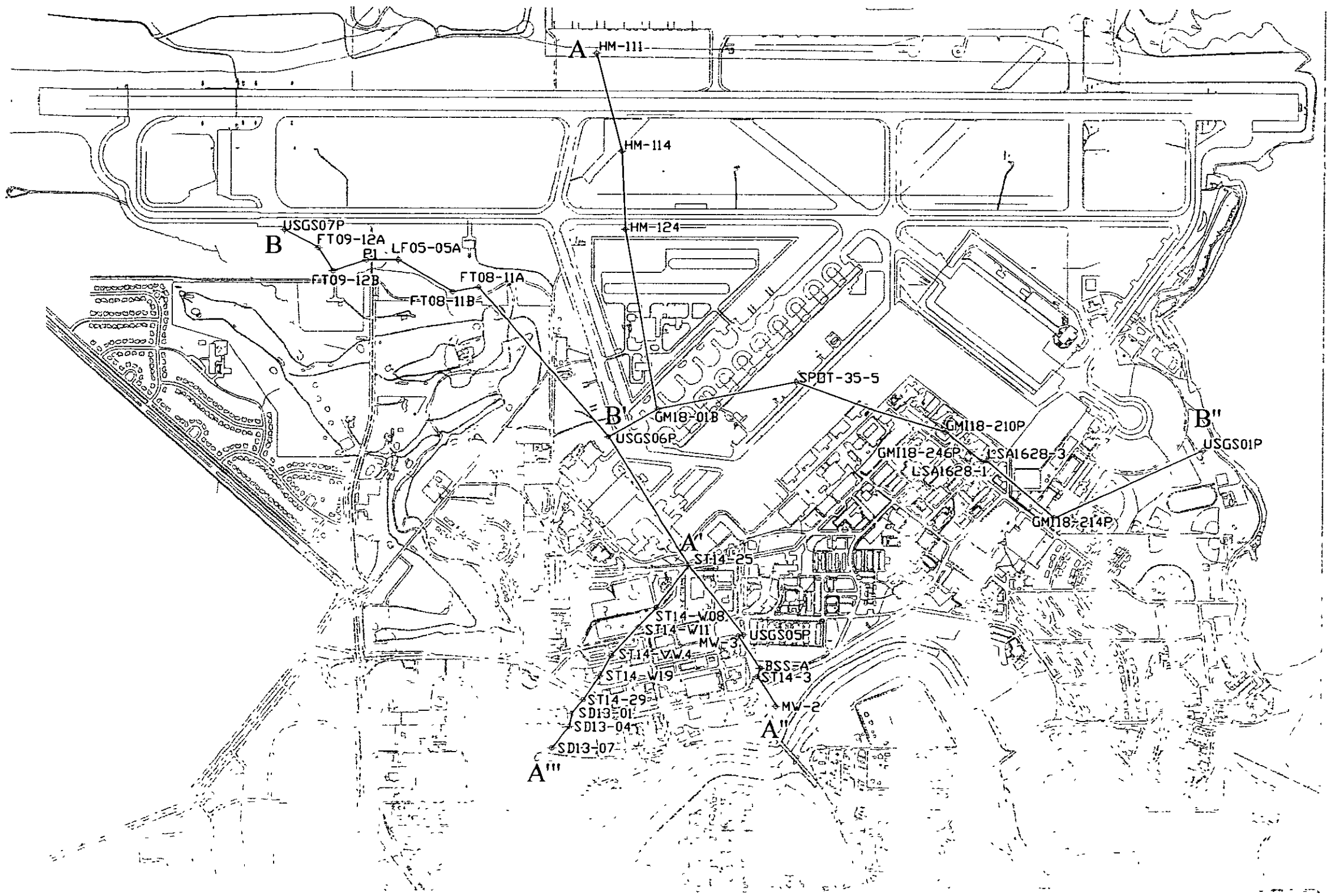
For Environmental Excellence



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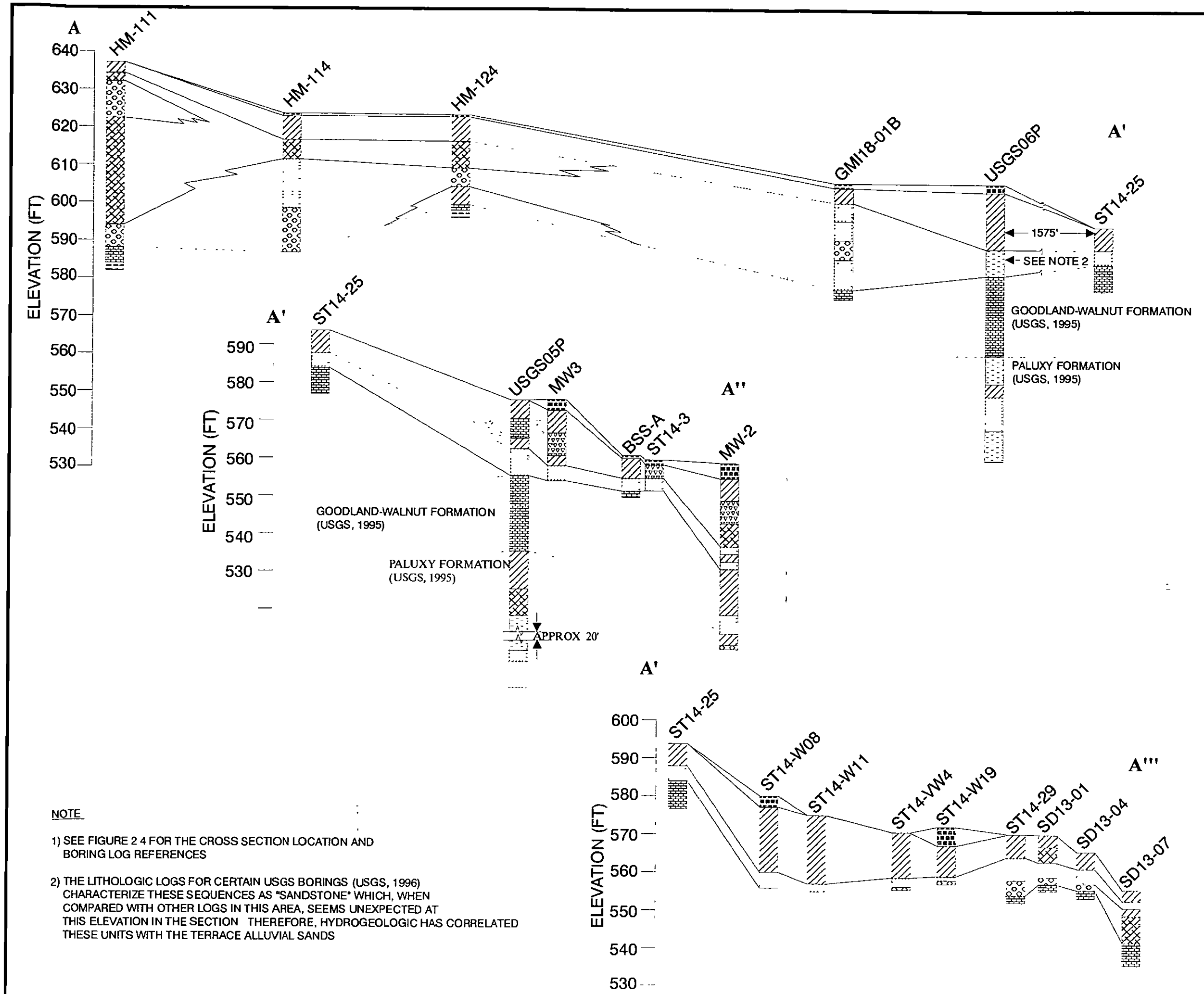


NOTE

1) SEE FIGURE 2 4 FOR THE CROSS SECTION LOCATION AND BORING LOG REFERENCES

2) THE LITHOLOGIC LOGS FOR CERTAIN USGS BORINGS (USGS, 1996) CHARACTERIZE THESE SEQUENCES AS "SANDSTONE" WHICH, WHEN COMPARED WITH OTHER LOGS IN THIS AREA, SEEMS UNEXPECTED AT THIS ELEVATION IN THE SECTION THEREFORE, HYDROGEOLOGIC HAS CORRELATED THESE UNITS WITH THE TERRACE ALLUVIAL SANDS

HydroGeoLogic, Inc —RCRA Facility Investigation Report
NAS Fort Worth JRB, Texas

Figure 2.5

Cross Sections A-A', A'-A'', and A'-A'''

U.S. Air Force Center for Environmental Excellence

Legend

- Stratigraphic Contact
- Inferred Stratigraphic Contact
- Fine- to Coarse-Grained Sand, Clayey Sand, Silty Sand, Gravelly Sand
- Clay, Silty Clay, Sandy Clay
- Silt, Clayey Silt, Sandy Silt
- Gravelly Clay or Clay w/Limestone
- Fill, Soil, Gravel, Rock
- Coarse Gravel, Silty Gravel, Sandy Gravel
- Limestone
- Claystone/Mudstone/Shale
- Sandstone

0 600 1200
HORIZONTAL SCALE IN FEET

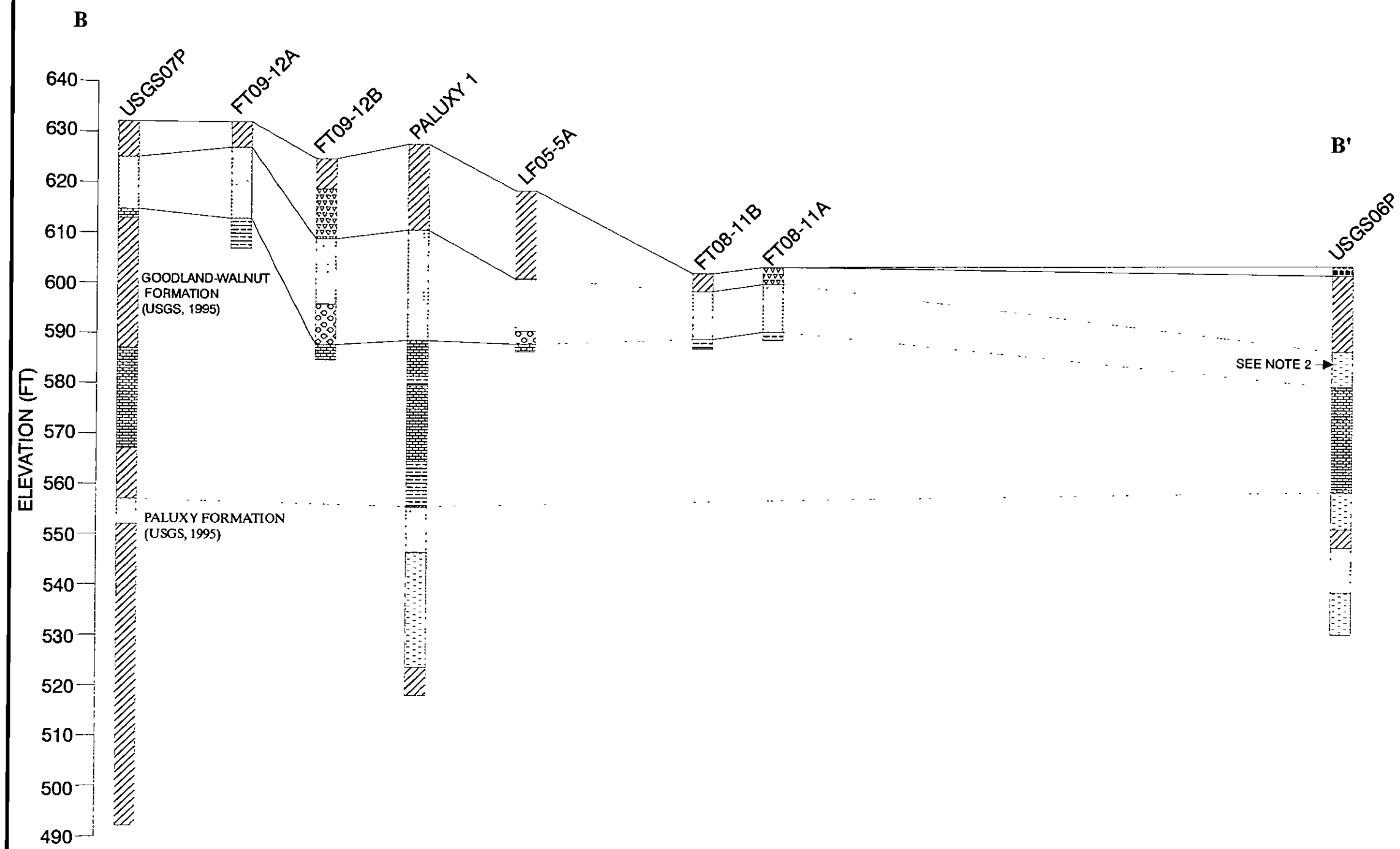
Filename X AFC001\15BDB
\Report\A-A' '_x-sections cdr
Project AFC001-15BDB
Revised 07/12/00 cf
Source CH2M HILL 1996 b

HYDRO GeoLogic INC

Figure 2.6

Cross Section B-B'

U.S. Air Force Center for Environmental Excellence



NOTE

1) SEE FIGURE 2 4 FOR THE CROSS SECTION LOCATION AND BORING LOG REFERENCES

2) THE LITHOLOGIC LOGS FOR CERTAIN USGS BORINGS (USGS, 1996) CHARACTERIZE THESE SEQUENCES AS "SANDSTONE" WHICH, WHEN COMPARED WITH OTHER LOGS IN THIS AREA, SEEMS UNEXPECTED AT THIS ELEVATION IN THE SECTION THEREFORE, HYDROGEOLOGIC HAS CORRELATED THESE UNITS WITH THE TERRACE ALLUVIAL SANDS

Legend

- Stratigraphic Contact
- Inferred Stratigraphic Contact
- Fine- to Coarse-Grained Sand, Clayey Sand, Silty Sand, Gravelly Sand
- Clay, Silty Clay, Sandy Clay
- Silt, Clayey Silt, Sandy Silt
- Gravelly Clay or Clay w/Limestone
- Fill, Soil, Gravel, Rock
- Coarse Gravel, Silty Gravel, Sandy Gravel
- Limestone
- Claystone/Mudstone/Shale
- Sandstone

0 600 1200
HORIZONTAL SCALE IN FEET

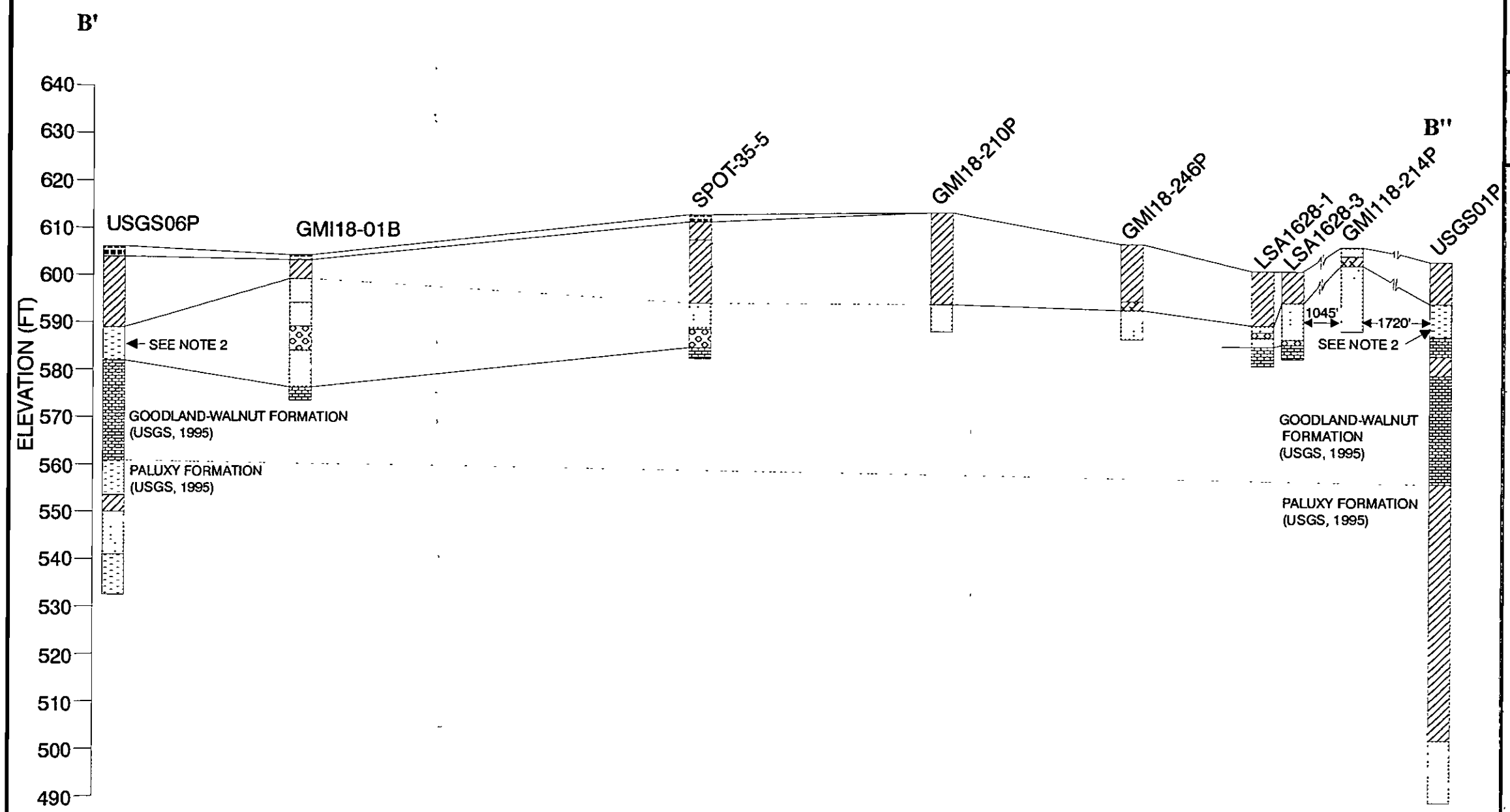
Filename X AFC001\15BDB
\Report\B-B'_x-section cdr
Project AFC001-15BDB
Revised 06/09/00 ap
Source CH2M HILL, 1996 b

HYDRO GeoLogic INC

Figure 2.7

Cross Section B'-B"

U.S. Air Force Center for Environmental Excellence



NOTE

1) SEE FIGURE 2.4 FOR THE CROSS SECTION LOCATION AND BORING LOG REFERENCES

2) THE LITHOLOGIC LOGS FOR CERTAIN USGS BORINGS (USGS, 1996) CHARACTERIZE THESE SEQUENCES AS "SANDSTONE" WHICH, WHEN COMPARED WITH OTHER LOGS IN THIS AREA, SEEMS UNEXPECTED AT THIS ELEVATION IN THE SECTION THEREFORE, HYDROGEOLOGIC HAS CORRELATED THESE UNITS WITH THE TERRACE ALLUVIAL SANDS

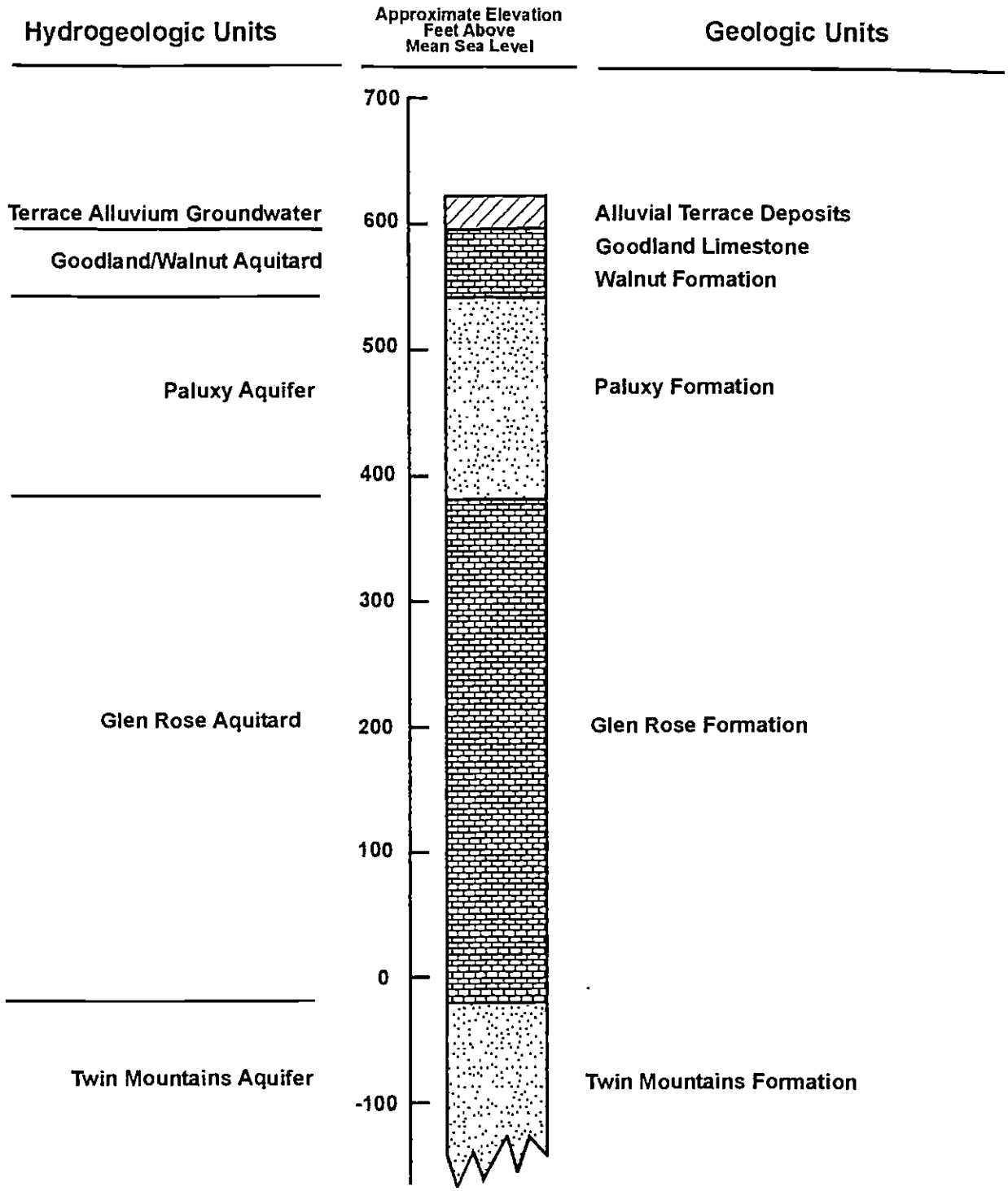
Legend

- Stratigraphic Contact
- Inferred Stratigraphic Contact
- Fine- to Coarse-Grained Sand, Clayey Sand, Silty Sand, Gravelly Sand
- Clay, Silty Clay, Sandy Clay
- Silt, Clayey Silt, Sandy Silt
- Gravelly Clay or Clay w/Limestone
- Fill, Soil, Gravel, Rock
- Coarse Gravel, Silty Gravel, Sandy Gravel
- Limestone
- Claystone/Mudstone/Shale
- Sandstone

0 600 1200
HORIZONTAL SCALE IN FEET

Filename: X AFC001\15BDB
\Report\B'-B" x-section cdr
Project AFC001-15BDB
Revised 06/09/00 ap
Source CH2M HILL, 1996 b

HYDRO GeoLogic INC



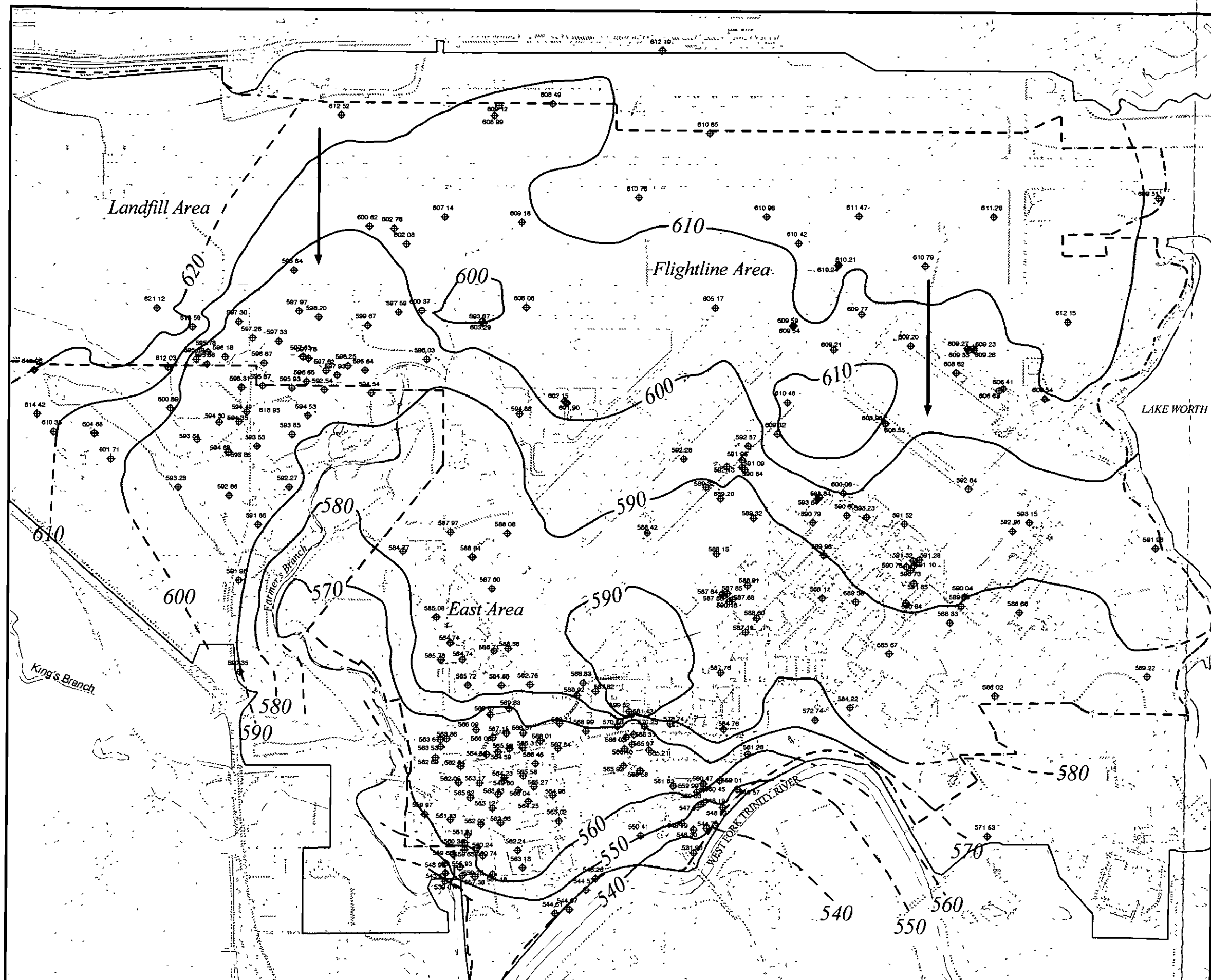
Filename X \AFC001\15BDB \Report\Strat_column cdr
Project AFC001-15BDB
Revised 06/09/00 ap
Map Source Radian, 1989

HYDRO GeoLogic

Legend

- Alluvium
- Limestone
- Sandstone

Figure 2.8
Stratigraphic Column Correlating Hydrogeologic and Geologic Units



HydroGeoLogic, Inc.—RCRA Facility Investigation Report
NAS Fort Worth JRB, Texas

Figure 2.9

Water Level Elevations Terrace Alluvium January 1999

U.S. Air Force Center For Environmental Excellence
Brooks AFB, Texas

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

-600- Groundwater Elevation Contour (Feet Above Mean Sea Level)

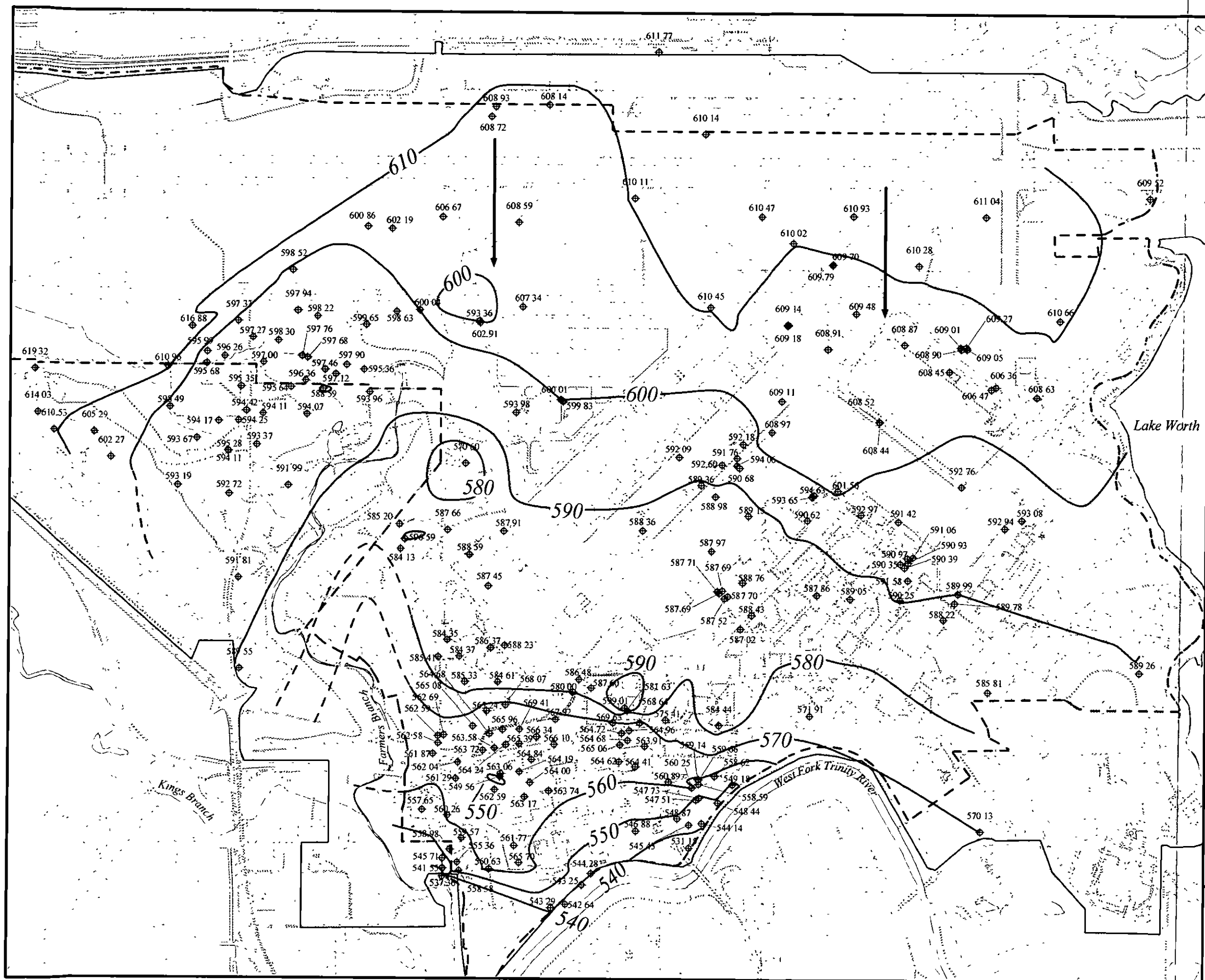
→ Generalized Groundwater Flow

N

0 500 1000 2000
SCALE IN FEET

HYDRO GeoLogic INC

Filename X:\AFC001\15BDB\Report\FIG2_9.apr
Project AFC001-15BDB
Created nzehms 03/15/99
Revised 06/12/00 ap
Map Source HGL GIS Database



HydroGeoLogic, Inc —RCRA Facility Investigation Report
NAS Fort Worth JRB, Texas

Figure 2.10

Water Level Elevations Terrace Alluvium July 1999

U.S. Air Force Center For Environmental Excellence
Brooks AFB, Texas

Legend

- - - - NAS Fort Worth JRB (Carswell Field)

——— Former Carswell Air Force Base

-600- Groundwater Elevation Contour (Feet Above Mean Sea Level)

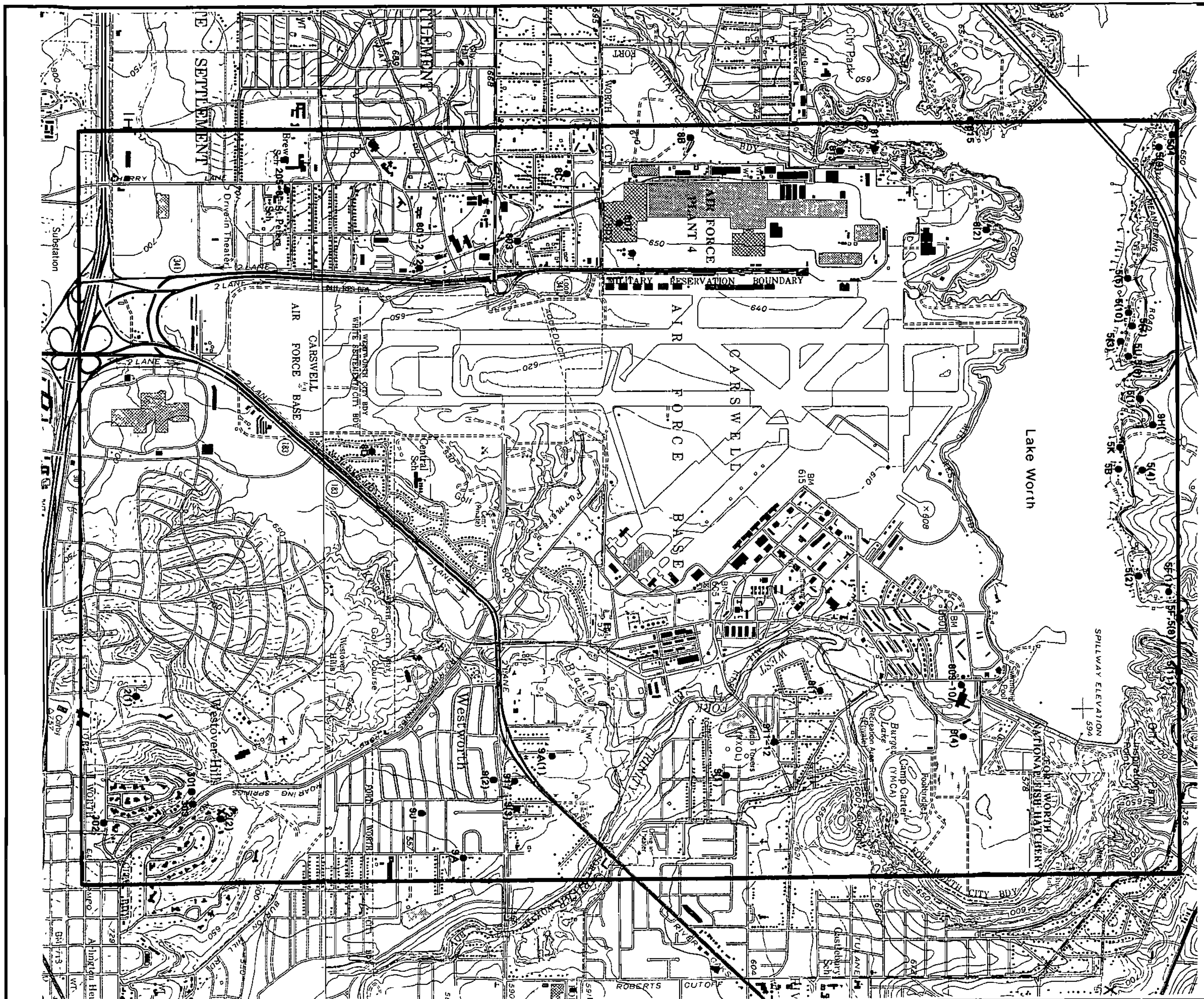
——→ Generalized Groundwater Flow

N

0 500 1000 2000
SCALE IN FEET

HYDRO GeoLogic INC

Filename X:\AFC001\15BDB\Report\FIG2_10.apr
Project AFC001-15BDB
Created nzehms 03/15/99
Revised 06/12/00 ap
Map Source HGL GIS Database



HydroGeoLogic, Inc —RCRA Facility Investigation Report
NAS Fort Worth JRB, Texas

Figure 2.11

Water Well Receptor Survey Within ½ Mile of NAS Fort Worth JRB

U.S. Air Force Center for Environmental Excellence

Legend

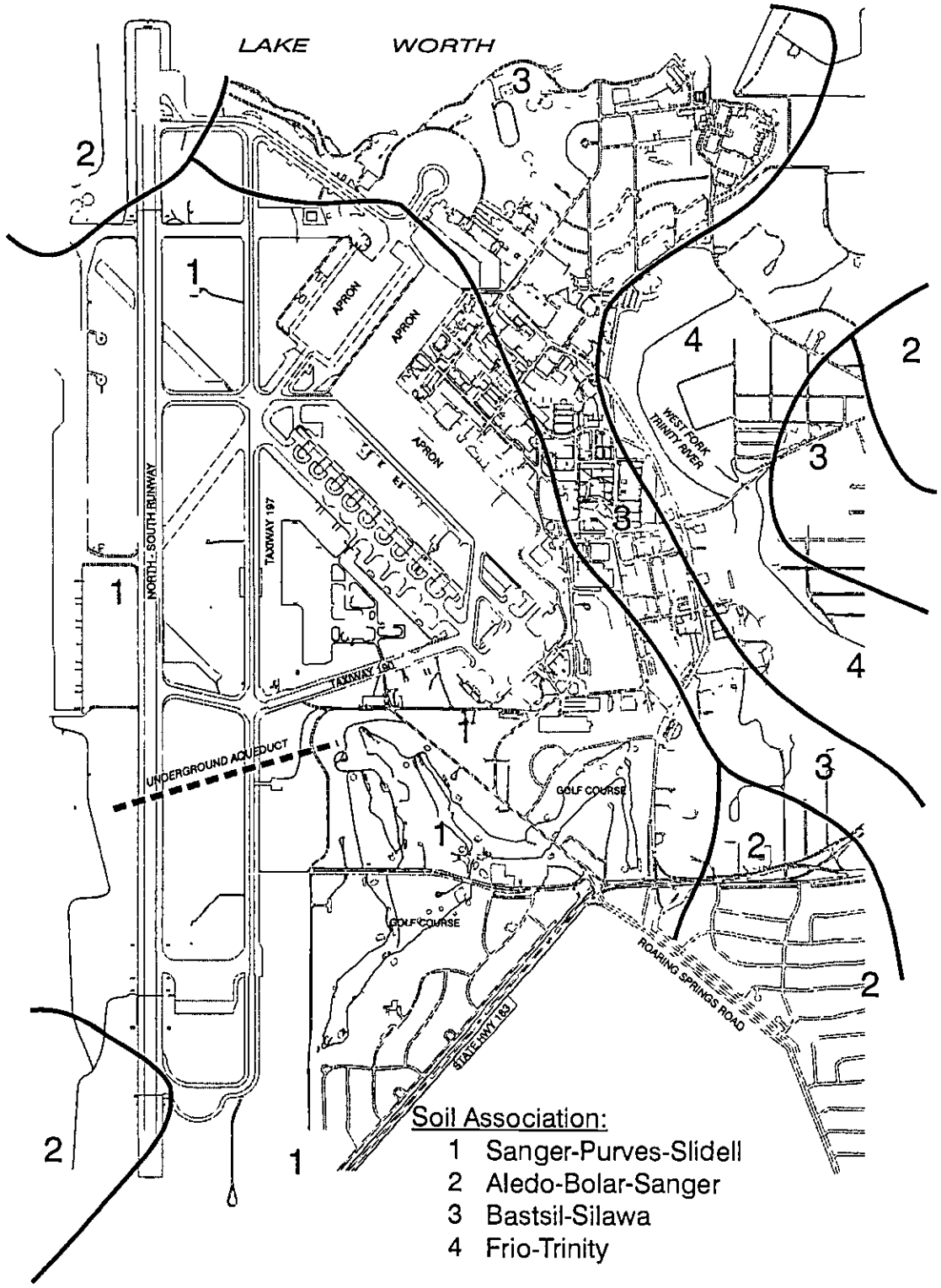
- 917 Water Well Location
- 7(1) Water Well Location Identifying Multiple Wells

N

Contour Interval 10 feet
Scale 1 24,000

Filename X AFC001\15bdb\Report\Fig2-11 cdr
Project AFC001-15BDB
Revised 07/11/00 ap
Source USGS 1981 & 1982

HYDRO GeoLogic INC



Filename X AFC001\15BDB\Report\Fig2_13.cdr
Project AFC001-15BDB
Revised 07/11/00 cf
Source Radian, 1989

HYDRO GeoLogic

Legend

0 1000 2000
SCALE IN FEET

N

Figure 2.12
Soil Association Map
NAS Fort Worth JRB, Texas

TAB

Section 3

3.0 SUMMARY OF INVESTIGATION ACTIVITIES

This section provides a summary of previous investigations at each SWMU/AOC and describes activities conducted as part of this investigation. Preliminary activities conducted for the site characterization included site reconnaissance, utility clearance, and inspections of each WAA storage shed. Chemical characterization activities included surface and subsurface soil sample collection intended to identify the nature and extent of contamination that may have resulted from past activities at each site.

3.1 SITE RECONNAISSANCE AND UTILITY CLEARANCE

Prior to mobilizing to the field, HydroGeoLogic conducted a site reconnaissance to select sample locations and to assess requirements for site preparation and clearance of underground utilities.

The Navy Public Works Office was notified regarding the intended field investigation and sampling. Local utility companies were contacted by the Navy Public Works office to mark and clear all subsurface utilities within the area of SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15. As this RFI involved multiple sites, the Navy Public Works office issued an individual dig permit for each SWMU/AOC under a master Permit No. 264 when utility clearance was completed at the site. Each individual dig permit was valid for 30 days, and HydroGeoLogic's field effort for each site was conducted during this 30 day window.

3.2 SITE INVESTIGATION ACTIVITIES

The following sections provide a summary of previous investigations at each SWMU/AOC and describe activities conducted as part of this RFI investigation. Site investigation activities were conducted during this RFI at SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 during May and June of 1999. As stated previously in Section 1.0, all sampling activities were conducted in accordance with the RFI WPs (HydroGeoLogic, 1999a).

As stated earlier in Section 1.3, the Air Force provided justification of a reduced list of soil and groundwater analytical requirements for this RFI in a letter to the TNRCC dated April 20, 1999. This letter is included as Appendix A. Based on the results of the initial soil investigation conducted at SWMUs 16, 33, 34, 42, and AOCs 6 and 15, a groundwater investigation was not conducted as part of this RFI.

3.2.1 SWMU 16

3.2.1.1 Site Investigation History

Prior to 1990, wastes generated at Building 1060 were temporarily stored at SWMU 16 before being transferred to the central HW storage facility. The base beneath SWMU 16 consisted of asphalt, and there were no other forms of secondary containment. During the 1989 RFA, a

dark stain was noted on the soil at the southeast corner of the unit. The stain extended approximately 20 feet to a shallow storm drain. Staining was also observed on the asphalt pad next to the storage drums (A.T. Kearney, 1989).

According to interviews with site personnel, approximately 2 feet of soil was removed from the entire site and replaced with clean fill when the new storage shed was built in 1990. No records of this action were found to confirm this statement.

3.2.1.1 WAA Storage Shed Inspection

In 1990, a metal building with a concrete floor, designated as WAA 1059, was built to serve as a new 90-day storage shed at SWMU 16 in order to comply with the permit specifications for HW storage. WAA 1059 was built in the same location where waste was historically stored at SWMU 16. Waste is currently stored within the WAA at SWMU 16 under Navy management.

Prior to initiating the intrusive investigation at SWMU 16, the walls and floor of WAA 1059 were examined for cracks or gaps. The integrity of WAA 1059 appeared to be intact during the inspection and as a result, intrusive activities did not take place within the storage shed. Photos of the WAA storage shed at SWMU 16 are presented in Figure 3.1.

3.2.1.2 Soil Sampling Activities

A total of 4 soil borings, BHGLSWMU16001 through BHGLSWMU16004, were advanced along each side of SWMU 16. Boring BHGLSWMU16004 was located in an area of previously stained soil where surface runoff collected (A.T. Kearney, 1989).

A total of 4 surface and 13 subsurface soil samples were submitted for chemical analysis. Soil samples were collected from each boring every 5 feet from the ground surface to the top of the water table. Soil sampling locations are depicted in Figure 3.2. A specific list of the types and quantities of wastes handled at SWMU 16 is included in Table 1.1. Based on the wastes handled at SWMU 16, all samples were analyzed for the following list of analyses:

- SW9045 - Soil pH

Appendix IX

- SW8260B - volatile organic compound (VOCs)
- SW8270C - semivolatile organic compounds (SVOCs)
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from SWMU 16. Results of the SWMU 16 soil investigation are presented in Section 4.0.

3.2.2 SWMU 33

3.2.2.1 Site Investigation History

No previous investigations have been conducted at SWMU 33. SWMU 33 was outside, uncovered, and surrounded on three sides by a wooden fence. The base of the unit was part concrete and part asphalt. Although there are no documented releases from this unit, the base of the unit was noted to be heavily stained with a dark, oily material during the 1989 RFA (A.T. Kearney, 1989).

3.2.2.2 WAA Storage Shed Inspection

In 1990, a metal building with a concrete floor, designated as WAA 1436, was built to serve as a new 90-day storage shed at SWMU 33 in order to comply with the permit specifications for HW storage. WAA 1436 was built in the same location where waste was historically stored at SWMU 33. Waste is currently stored within the WAA at SWMU 33 under Navy management.

Prior to initiating the intrusive investigation at SWMU 33, the walls and floor of WAA 1436 were examined for cracks or gaps. The integrity of WAA 1436 appeared to be intact during the inspection and as a result, intrusive activities did not take place within the storage shed. Photos of the WAA storage shed at SWMU 33 are presented in Figure 3.3.

3.2.2.3 Soil Sampling Activities

A total of 3 soil borings, BHGLSWMU33001 through BHGLSWMU33003 were advanced at SWMU 33 in the grassy area behind the shed where surface runoff would be most likely to flow.

A total of 3 surface and 9 subsurface soil samples were submitted for chemical analysis. Soil samples were collected from each boring every 5 feet from the ground surface to the top of the water table. Soil sampling locations are presented in Figure 3.4. A specific list of the types and quantities of wastes handled at SWMU 33 is included in Table 1.1. Based on the wastes handled at SWMU 33, all samples were analyzed for the following list of analyses:

- TX1005 - total petroleum hydrocarbons (TPH)

Appendix IX

- SW8260B - VOCs
- SW8270C - SVOCs
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from SWMU 33. Results of the SWMU 33 soil investigation are presented in Section 4.0.

3.2.3 SWMU 34

3.2.3.1 Site Investigation History

The area around SWMU 34 is paved with concrete and slopes away from the building to a parking lot. The entire unit is surrounded by discontinuous concrete curbing. Surface runoff from the unit flowed across the parking lot onto bare ground and into a storm water sewer. There were no provisions for secondary containment from this area. Although there was no documented history of a release for this unit, the soil at the edge of the parking lot appeared to be stained with oil in 1989 (A.T. Kearney, 1989).

No previous investigations have been conducted specifically for SWMU 34. However, SWMU 34 is located adjacent to SWMU 35, the Building 1194 OWS. SWMU 35 is a 1,200 gallon OWS installed to receive waste liquids, including diesel fuel, JP-4, and other petroleum-related compounds from Building 1194. The OWS is connected to an underground waste oil tank (International Technologies Corporation [IT], 1998).

In 1993 Law Engineering (Law) advanced three soil borings, 1194-SB01 through 1194-SB03 and surface and subsurface soil samples were collected in an effort to assess any contamination from the SWMU 35 OWS. Soil boring locations (depicted in gray) are shown in Figure 3.5. All soil samples were analyzed using USEPA Methods SW8240 for VOCs and SW6010 for metals. Analytical results of the soil samples collected during the OWS investigation were compared to practical quantitation limits (PQLs) for organics, background levels for metals, and MSC values. 1993 soil sample detections are presented in Table 3.1.

Concentrations of acetone and benzene exceeded their respective PQLs in the samples collected from borings 1194-SB01 and 1194-SB02. Concentrations of methylene chloride were detected above PQLs in the samples collected from all three borings (Table 3.1). Concentrations of cadmium (2.4 milligrams per kilogram [mg/kg] to 3.4 mg/kg) were detected in the samples collected from all three borings. All of these detections exceeded both the background and MSC values of 0.59 mg/kg. Manganese (370 mg/kg) was detected above background (351.7 mg/kg) in the sample collected from the 3-foot interval of boring 1194-SB01.

Following the 1993 Law investigation, IT advanced two additional soil borings (SB119401 and SB119402) and collected surface and subsurface samples to the top of the water table in an effort to supplement the results of the 1993 investigation by Law. Soil samples were analyzed for SVOCs (SW8270), and pesticides/polychlorinated biphenyls (PCBs) (SW8080). No analytes were detected above PQLs in any of the soil samples collected (IT, 1998).

Two monitoring wells (MW-36 and MW-37) are located in the area of SWMU 34 and SWMU 35 (Figure 3.5). These are shallow monitoring wells, which were installed as part of a compliance program with the waste oil underground storage tank associated with the SWMU 35 OWS. MW-36 and MW-37 are shallow wells and do not yield sufficient quantities of groundwater for sample collection. In 1998, the depth to groundwater measured 4.3 feet below the top of the casing in MW-37, and both wells pumped dry and did not recharge sufficiently to allow groundwater sample collection (IT, 1998).

In 1997, downgradient monitoring well BGSMW01 (Figure 3.5) was sampled for VOCs (SW8260), SVOCs (SW8270), and metals/mercury (SW6010/7000) (IT, 1998). 1997 groundwater sampling results are presented in Table 3.2. One VOC, methylene chloride, was detected slightly above the detection limit in the groundwater sample collected from BGSMW01. Methylene chloride was also detected in the associated method blank for that sample. No other VOCs or SVOCs were detected in the groundwater sampled from BGSMW01 (Table 3.2). Concentrations of iron (2.31 milligrams per liter [mg/L]), manganese (0.528 mg/L), and mercury (0.00011 mg/L) were detected slightly above background in the groundwater sample collected from BGSMW01. All of these metals were well below their associated MSC.

In 1999, two additional borings, SB119403 and SB119404, were advanced in the area of SWMU 35 by IT. Surface and subsurface soil samples were collected at the 0- and 4-foot intervals of SB119403 in order to delineate concentrations of cadmium detected previously in boring 1194-SB02. One subsurface soil sample was collected from the 3-foot interval of SB119404 in order to delineate concentrations of cadmium and arsenic in boring 1194-SB01. Soil boring locations (depicted in gray) are presented in Figure 3.5. All of the confirmation sample results were detected below their associated background levels.

The data provided from this previous investigation suggests that there may have been a release of hazardous constituents in the area of SWMU 34 from SWMU 35, the Building 1194 OWS. Additional sampling within the area of SWMU 34 and at the base of the surface runoff path was conducted in order to determine if there has been a release from SWMU 34.

3.2.3.2 WAA Storage Shed Inspection

No WAA storage shed exists at SWMU 34. Shortly after 1990, all waste was removed from SWMU 34 and the site has not served as an active WAA since that time.

3.2.3.3 Soil Sampling Activities

A total of two soil borings, BHGLSWMU34001 and BHGLSWMU34002, were advanced at SWMU 34. Boring BHGLSWMU34001 was advanced in the center of the former SWMU 34 and boring BHGLSWMU34002 was advanced in the grass at the base of the runoff path. Both borings were advanced to the top of the water table.

A total of two surface and two subsurface soil samples were collected at SWMU 34 and submitted for chemical analysis. Soil samples were collected from each boring every 5 feet from the ground surface to the top of the water table. Figure 3.5 illustrates SWMU 34 and the soil sampling locations. A specific list of the types and quantities of wastes handled at SWMU 34 is included in Table 1.1. Based on the wastes handled at SWMU 34, all samples were analyzed for the following list of analyses:

- M5500 - Ethylene Glycol

Appendix IX

- SW8260B - VOCs
- SW8270C - SVOCs
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from SWMU 34. Results of the SWMU 34 soil investigation are presented in Section 4.0.

3.2.4 SWMU 39

3.2.4.1 Site Investigation History

SWMU 39 held a 200-gallon waste oil trailer, along with 55-gallon drums and smaller containers on a wooden pallet. The area was surrounded by sand bags piled two high to control spills. Several 25-gallon containers were stacked in a locked cage measuring 3 feet by 6 feet just outside of the sand bag area. The entire waste storage area was paved with asphalt, and the surface runoff washed into the storm water drains. Other than sand bags, there were no provisions for secondary containment from this area. There was no noted history or evidence of a release from SWMU 39, and the potential for past and future releases from this SWMU was considered to be low (A.T. Kearney, 1989).

No previous investigations have been conducted at SWMU 39. However, in 1997 soil and groundwater samples were collected by IT during an investigation of SWMU 40, the Building 1643 OWS. SWMU 40 consists of two 18,000 gallon OWS units. These units are located immediately north and south of SWMU 39 (Figure 3.6), and managed wastewater containing jet fuel, engine lubricants, cleaners, solvents, and other petroleum-related wastes (IT, 1998). During the 1997 investigation three soil borings, SB164301, SB164302, and SB164303, were advanced at the north, east, and south corners of SWMU 40 respectively (Figure 3.6). Surface and subsurface samples were collected from each boring and analyzed for VOCs (SW8260), SVOCs (SW8270), pesticides/PCBs (SW8080), and metals/mercury (SW6010/7471). Sample results were compared to background levels for metals, organic compounds were compared to PQLs, and all sample results were compared to the MSCs. Surface and subsurface soil sample results for SWMU 40 are summarized in Tables 3.3, and 3.4, respectively.

Concentrations of cadmium (1.0 B mg/kg) and lead (81.8 mg/kg) were detected above both background and MSC values in the surface sample collected from SB164302. Low concentrations of several SVOCs were detected in the surface soil sample collected from that same boring. In addition, several VOCs including chlorobenzene, methylene chloride, and toluene were detected in low quantities in the surface soil samples collected from all three borings (Table 3.3).

One concentration of selenium (0.9 J mg/kg) exceeded both background and the MSC in the subsurface sample collected from the 6-foot interval of SB164303. In addition, concentrations of one VOC, methylene chloride, were detected in the soil samples collected from the 10-foot interval of all three borings, SB164301 through SB164303. No other analytes were detected above background in the subsurface soil samples collected at SWMU 40 (Table 3.4).

In 1999, two additional borings, SB164304 and SB164305, were advanced by IT at SWMU 40 in order to confirm the results of lead and cadmium detected in the 1997 soil investigation. One surface soil sample was collected from boring SB164304 and analyzed for cadmium, and one surface soil sample was collected from boring SB164305 and analyzed for lead. Both lead and cadmium results from the 1999 conformational analysis were detected below background concentrations.

Two downgradient monitoring wells, WITCTA005 and WITCTA006, were installed during the 1997 investigation of SWMU 40 (Figure 3.6). Groundwater samples were collected from each well and analyzed for VOCs (SW8260), SVOCs (SW8270), and metals/mercury (SW6010/7471). Groundwater results are presented in Table 3.5.

Concentrations of two VOCs, *cis*-1,2-dichloroethene (*cis*-1,2-DCE) and trichloroethene (TCE), were detected above their respective PQLs and MSCs in the groundwater samples collected from monitoring wells WITCTA005 and WITCTA006 (Table 3.5). These constituents are currently being investigated under the regional TCE plume and are not considered to be site related. Methylene chloride was detected above the PQL and the MSC in the groundwater sample collected from WITCTA005. Methylene chloride was detected above PQL but below the MSC in the groundwater sample collected form WITCTA006. Concentrations of antimony and manganese were detected above background in the groundwater sample collected from WITCTA005. This concentration of manganese also exceeded the MSC. Concentrations of arsenic, iron, and manganese were also detected above background in the groundwater sample collected from WITCTA006.

The data provided from this 1997 soil and groundwater investigation suggests that there may have been a release of hazardous materials in the area of SWMU 39 from the SWMU 40 OWS. As a result, additional data was collected within SWMU 39 in order to determine if the SWMU has contributed to a release in the area.

3.2.4.2 WAA Storage Shed Inspection

No WAA storage shed exists at SWMU 39. Shortly after 1990, all waste was removed from SWMU 39 and the site has not served as an active WAA since that time.

3.2.4.3 Soil Sampling Activities

One soil boring, BHGLSWMU39001, was advanced in the center of SWMU 39, and a total of one surface and one subsurface soil sample was collected and submitted for chemical analysis. Soil samples were collected from the boring every 5 feet from the ground surface to the top of the water table. Figure 3.6 illustrates SWMU 39 and the sampling locations. A specific list of the types and quantities of wastes handled at SWMU 39 is included in Table 1.1. Based on the wastes handled at SWMU 39, all samples were analyzed for the following list of analyses:

- TX1005 - TPH

Appendix IX

- SW8260B - VOCs
- SW8270C - SVOCs
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from SWMU 39. Results of the SWMU 39 soil investigation are presented in Section 4.0.

3.2.5 SWMU 42

3.2.5.1 Site Investigation History

Wastes were stored at SWMU 42 in 55-gallon carbon-steel drums placed on the asphalt pavement. In addition, there was a 500-gallon bowser for waste oil set on the pavement, surrounded by sand bags piled two high. Surface water runoff from the area washed into storm water drains. There were no provisions for secondary containment from this area, other than the sand bags around the bowser. The 1998 RFA considered the release potential from this unit to be low. There was no evidence or history of a release from this area, although some stains were noted on the concrete within the containment area (A.T. Kearney, 1989).

No previous investigations have been conducted specifically for SWMU 42. However, the location of SWMU 42 is adjacent to SWMU 41, the Building 1414 OWS. SWMU 41 is a 1,000 gallon OWS installed to receive waste water which may have contained traces of hydraulic fluid, engine lubricating oil, and petroleum byproducts from the floor drains inside Building 1414 (IT, 1998).

In 1993 Law advanced three soil borings, 1414-SB01 through 1414-SB03, and collected surface and subsurface soil samples from each boring in an effort to assess any contamination from the SWMU 41 OWS. Soil boring locations (depicted in gray) are shown in Figure 3.7. All soil samples were analyzed for VOCs (SW8240) and metals (SW6010). Analytical results of the soil samples collected during the OWS investigation were compared to PQLs for organics, background levels for metals, and MSC values. 1993 surface and subsurface soil sample detections are presented in Tables 3.6 and 3.7 respectively.

The 1993 surface soil results show slight concentrations of methylene chloride above the PQL in borings 1414-SB01 and 1414-SB03. In addition, acetone was detected in the surface soil sample collected from boring 1414-SB03 slightly above the PQL but well below the MSC (Table 3.6). Concentrations of several inorganic constituents were also detected in the surface soil samples collected from the area of SWMU 41. Concentrations of arsenic, cadmium, cobalt, lead, and nickel were detected above background in the surface soil sample collected from boring 1414-SB01. Of these metals, concentrations of arsenic, cadmium, and lead also exceeded their respective MSCs (Table 3.6). In addition, cadmium was also detected above both background and the MSC in the surface soil sample collected from boring 1414-SB03 (Table 3.6).

1993 Subsurface sample results indicate concentrations of methylene chloride slightly above PQL in the subsurface samples collected from all three borings (Table 3.7). In addition, acetone was detected slightly above PQL in the sample collected from the 3-foot interval of boring 1414-SB02 (Table 3.7). Several metals, including arsenic, cadmium, copper, lead, magnesium, and manganese were detected in the subsurface soil samples collected for the investigation of SWMU 41. Of these metals, concentrations of arsenic, cadmium, and lead exceeded the MSCs (Table 3.7).

Following the 1993 Law investigation, IT advanced two additional soil borings, SB141401 and SB141402, adjacent to the SWMU 41 OWS in 1997. Soil samples were collected from each boring at both surface and subsurface intervals to supplement the 1993 Law investigation (IT, 1998). Samples were analyzed for VOCs (SW8260), SVOCs (SW8270), pesticides/PCBs (SW8080), and metals/mercury (6010/7000). Analytical results of the soil samples collected during the OWS investigation were compared to PQLs for organics and background levels for metals. All sample results were compared to MSC values. No constituents were detected above background or PQL in any of the surface soil samples collected in 1997. Subsurface soil sample detections are presented in Table 3.7.

No SVOCs, pesticides/PCBs, or metals were detected above PQL or background in any of the subsurface samples collected at SWMU 41. Concentrations of acetone and toluene were detected above the PQL but well below the MSC in the sample collected from the 2-foot interval of boring SB141401.

Monitoring well WITCTA016 was installed and sampled in March of 1997 by IT. Groundwater samples were collected from WITCTA016 and analyzed for VOCs (SW8260),

SVOCs (SW8270), and metals/mercury (SW6010/7000). 1997 groundwater sampling results are presented in Table 3.8.

Concentrations of methylene chloride (0.0017 B mg/L), *cis*-1,2-DCE (0.072 mg/L), and TCE (0.029 mg/L) were detected above PQL in the groundwater sample collected from WITCTA016. These concentrations of *cis*-1,2-DCE and TCE also exceeded MSCs (Table 3.8). Iron (0.249 mg/L) and magnesium (122 mg/L) were detected above background in the groundwater sample collected from WITCTA016. No SVOCs were detected above PQL. Concentrations of *cis*-1,2-DCE and TCE in the groundwater sampled from WITCTA016 are most likely associated with an upgradient source that is subject to investigation under AOC 2. Methylene chloride is a common laboratory contaminant and is not believed to be associated with waste handling activities at SWMU 42.

The data from this previous investigation suggests that the SWMU 41 OWS may have resulted in a release of hazardous constituents to the environment. All of the above described samples are cross-gradient of the location of SWMU 42, the Building 1414 WAA. Additional data collection within the area of SWMU 42 was necessary in order to determine if SWMU 42 has contributed to a release at this site.

3.2.5.2 WAA Storage Shed Inspection

Wastes were removed from the area of SWMU 42 shortly after 1990. In 1990, a new metal storage shed, WAA 1413, was built near the southwest corner of Building 1414 (Figure 3.7). This WAA is used by a private contractor and is not associated with SWMU 42. As a result, an inspection of the WAA storage shed was not conducted.

3.2.5.3 Soil Sampling Activities

A total of four soil borings, BHGLSWMU42001 through BHGLSWMU42004, were advanced at SWMU 42. The locations of these four borings were adjusted slightly from the proposed locations in the RFI WPs in order to avoid the large network of subsurface utilities in the area. Borings BHGLSWMU42001 and BHGLSWMU42004 were advanced in low, cracked areas of the asphalt parking lot in areas where surface runoff would have most likely collected.

A total of 4 surface and 12 subsurface soil samples were submitted for chemical analysis. Soil samples were collected from each boring in 5-foot intervals from the ground surface to the water table. Figure 3.7 illustrates SWMU 42 and the sampling locations. A specific list of the types and quantities of wastes handled at SWMU 42 is included in Table 1.1. Based on the wastes handled at SWMU 42, all samples were analyzed for the following reduced list of analyses:

- TX1005 - TPH
- M5500 - Ethylene Glycol

Appendix IX

- SW8260B - VOCs
- SW8270C - SVOCs
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from SWMU 42. Results of the SWMU 42 soil investigation are presented in Section 4.0.

3.2.6 AOC 6

3.2.6.1 Site Investigation History

AOC 6, described as the RV Parking Area, is a large fenced parking lot paved with asphalt. There was no documentation of any waste stored within the area; however, routine maintenance operations were believed to have been carried out on vehicles within the AOC. A recent inspection of the area noted dark stains on various areas along the perimeter of the parking lot.

Although there have been no investigations directly associated with the activities at AOC 6, Table 3.9 presents a summary of groundwater data collected from well ST14-W22 during quarterly sampling conducted in 1995. The data shows low concentrations of aluminum, iron, manganese, zinc, and lead detected above background concentrations. All of these concentrations of metals showed decreasing trends from the April 1995 sampling event to the July 1995 sampling event and do not indicate a potential release from AOC 6. In addition, tetrachloroethene was detected above PQLs in the groundwater samples collected from ST14-W22. This concentration of tetrachloroethene showed decreasing trends from the April 1995 sampling event to the July 1995 sampling event. Tetrachloroethene is not a waste associated with AOC 6 and is currently being addressed in the investigation of upgradient SWMU 61 (Figure 4.10).

These low concentrations of metals and VOCs in the groundwater samples collected from ST14-W22 do not indicate that there has been a release of hazardous constituents to the environment from AOC 6. However, surface and subsurface soil data was collected within the area of AOC 6 in order to confirm that the constituents detected in the groundwater are not site related.

3.2.6.2 WAA Storage Shed Inspection

No WAA storage shed has ever existed at AOC 6, and as a result, no inspection was conducted during this RFI.

3.2.6.3 Soil Sampling Activities

A total of four soil borings, BHGLAOC006001 through BHGLAOC006004 were advanced at AOC 6. Boring BHGLAOC006004 was advanced adjacent to a metal plate leading to SWMU 64, the French Underdrain System.

A total of four surface and four subsurface soil samples were collected at AOC 6 and submitted for chemical analysis. Samples were collected from each boring at 5-foot intervals from the ground surface to the top of the water table. Figure 3.8 illustrates AOC 6 and the soil sampling locations. A specific list of the types and quantities of wastes handled at AOC 6 is included in Table 1.1. Based on the wastes handled at AOC 6, all samples were analyzed for the following list of analyses:

- TX1005 - TPH
- SW8015 - Ethlyne Glycol

Appendix IX

- SW8260B - VOCs
- SW8270C - SVOCs
- SW6010/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil borings are intended to determine whether a release has occurred from AOC 6. Results of the AOC 6 soil investigation are presented in Section 4.0.

3.2.7 AOC 15

3.2.7.1 Site Investigation History

AOC 15 is described as the storage shed adjacent to Building 1190 (Figure 3.9). AOC 15 is located within the fenced area of SWMU 51, the central waste storage area. No previous investigations have been conducted specifically for AOC 15. However, SWMU 52 is located adjacent to AOC 15 (Figure 3.9). SWMU 52 is a two-stage OWS unit installed to receive waste wash water from the flight line area (IT, 1998).

In 1994, Law advanced three soil borings (1190-SB01 through 1190-SB03) near Building 1190 during an investigation of the SWMU 52 OWS. Soil boring locations (depicted in gray) are presented in Figure 3.9. Surface and subsurface soil samples were collected from each boring. All soil samples were analyzed for metals (SW6010) and VOCs (SW8240) (IT, 1998). 1994 surface and subsurface soil sample results are presented in Tables 3.10 and 3.11, respectively.

Concentrations of methylene chloride were detected slightly above the PQL in the surface soil samples collected from all three borings. Concentrations of cadmium were detected above

both background and MSCs in the surface soil samples collected from all three borings (1190-SB01 through 1190-SB03). Arsenic was detected above both background and MSC in the surface sample collected from 1190-SB03. No constituents were detected above background or PQL in the subsurface soil samples collected in 1994.

Following the 1994 Law investigation, IT advanced two additional soil borings, SB119001 and SB119002, adjacent to the SWMU 52 OWS in 1997 Surface and subsurface soil samples were collected from each boring and analyzed for SVOCs (SW8270), and pesticides/PCBs (SW8080) to supplement the 1993 Law investigation (IT, 1998). Analytical results were compared to PQLs for organics, background levels for metals, and all sample results were compared to MSC values (IT, 1998). The 1997 surface and subsurface soil sample results are presented in Tables 3.10 and 3.11, respectively.

Low concentrations of several SVOCs were detected above PQLs in the surface and subsurface samples collected from both soil borings. These SVOC results have been qualified with either a "J" or a "JB" indicating that the sample results are estimated and are possibly biased high or false positive based upon QC data (IT, 1998). No pesticides/PCBs were detected above PQL in any of the soil samples collected at SWMU 52.

Upgradient monitoring well WITCTA032 was installed in April of 1997 by IT. Groundwater was sampled from WITCTA032 and analyzed for VOCs (SW8260), SVOCs (SW8270), and metals/mercury (SW6010/7471) (IT, 1998). 1997 groundwater sampling results are presented in Table 3.12.

Low concentrations of several VOCs, *sec*-butylbenzene, methylene chloride, and *p*-isopropyltoluene, were detected slightly above PQL in the groundwater sample collected from WITCTA032. Concentrations of one SVOC, phenol, was detected slightly above PQL. In addition, concentrations of several metals, including aluminum, arsenic, iron, and manganese, were detected above background but below MSCs in the groundwater sample collected from WITCTA032.

These low concentrations of VOCs and metals in the soil and groundwater samples may indicate that there has been a release of hazardous constituents to the environment from the SWMU 52 OWS. Additional data collection in the area of AOC 15 was necessary to determine whether AOC 15 has contributed to the possible release at the site.

3.2.7.2 WAA Storage Shed Inspection

The storage shed identified as AOC 15 was never a designated WAA at NAS Fort Worth JRB, and there has been no documented storage of HW in this building. Prior to initiating the intrusive investigation at AOC 15, the walls and floor of the AOC were examined for cracks or gaps. A visual inspection of the storage shed by HydroGeoLogic in 1999 noted some paint stains and discoloration of the floor within the building. The integrity of AOC 15 appeared to be intact during the inspection and as a result, intrusive activities did not take place within the

building. There were no stains or discoloration on the soil or vegetation surrounding the storage shed.

All of the materials remaining in the storage shed were removed during field activities conducted by HydroGeoLogic during June, 2000. In June 2000 the contents of the shed consisted of used mops and shovels, unopened and/or torn bags of vermiculite, used spray paint cans, several small wooden boxes containing used hardware (i.e., hinges, nails, and screws), discarded cardboard boxes, and paper debris. The contents of the shed were removed and disposed of into a construction dumpster at the staging area, and the shed was swept clean. Photos of AOC 15 are presented in Figure 3.10.

3.2.7.3 Soil Sampling Activities

A total of one soil boring was advanced at AOC 15, and a total of one surface and four subsurface soil samples were submitted for chemical analysis (Figure 3.9). Soil samples were collected from the boring every 5 feet from the ground surface to the top of the water table. As AOC 15 is located within the same area as SWMU 51, the central waste holding area, samples were analyzed for the full list of Appendix IX compounds using USEPA analytical methods. These methods included:

- SW8260B - VOCs
- SW8270C - SVOCs
- SW8081/8082 - Organochlorine Pesticides and PCBs
- SW8141 - Organophosphorus Pesticides
- SW8151 - Chlorinated Herbicides
- SW8280 - Dioxins and Furans
- SW9010A/SW9012 - Cyanide
- SW9030 - Sulfide
- SW6010A/7000 - Trace Elements (Metals)
- SW7470A/7471A - Mercury

The analytical results obtained from samples collected from the soil boring are intended to determine whether a release has occurred from AOC 15. Results of the AOC 15 soil investigation are presented in Section 4.0.

Nine additional Appendix IX soil borings were advanced in the area of AOC 15 as part of the investigation of SWMU 51 (Figure 3.9). SWMU 51 soil results significant to the investigation of AOC 15 are presented in Section 4.0.

3.3 ELEVATION AND LOCATION SURVEY

Each DPT soil boring was surveyed by Baird, Hampton & Brown, Inc. of Fort Worth, Texas. Vertical and horizontal measurements were collected in accordance with the RFI WPs (HydroGeoLogic, 1999a). Surveying data are provided in Appendix B.

TABLES

Table 3.1
1993 Soil Sampling Results for SWMU 35, Building 1194 OWS
NAS Fort Worth JRB, Texas

Compound	RRS 1 Surface (mg/kg)	RRS 1 Subsurface (mg/kg)	MSC (mg/kg)	1194-SB01 3-5' (mg/kg)	1194-SB01 7-9' (mg/kg)	1194-SB02 1-3' (mg/kg)	1194-SB02 3-5' (mg/kg)	1104-SB03 3-5' (mg/kg)	1194-SB03 5-7' (mg/kg)
VOCs (SW8240/5030)									
Acetone	PQL	PQL	1000	(0.027)	ND	(0.013)	ND	ND	ND
Benzene	PQL	PQL	0 5	(0.0013)	ND	(0.0016)	ND	ND	ND
Methylene chloride	PQL	PQL	0 5	(0.018)	(0.019)	(0.015)	(0.017)	(0.017)	(0.017)
Metals (SW6010/3050)									
Aluminum	22035	20260	10000	9200	7600	7300	5000	3300	8900
Arsenic	5 85	6.58	5.0	4.0	ND	5.2	5.7	4.7	5 0
Barium	233	128.1	200	90	80	99	46	27	87
Beryllium	1.02	1 13	0 4	0.66	ND	0 6	0 15	0.24	0.32
Cadmium	0.556	0.59	0.5	[(2.7)]	[(2.10)]	[(2.4)]	[(3.4)]	[(2.7)]	[(2.6)]
Calcium	167788	272000	NV	10000 J	67000 J	13000 J	33000 J	4500 J	27000 J
Chromium (Total)	25 86	16 31	10 0	11	8.0	11	9 8	5.9	11
Cobalt	11 05	6.19	610	4.6	4.3	11	4 6	3.7	4.9
Copper	17 37	13.72	130	6.8	3 4	(24)	5.0	3.8	7 8
Iron	17717	17469	NV	10000 J	8200 J	9600 J	13000 J	11000 J	10000 J
Lead	30.97	12.66	1 5	11	8.3	12	9.2	4.6	9.4
Magnesium	3003	2420	NV	1100	1100	1000	1100	540	1600
Manganese	849	351 7	1400	(370)	220	240	140	84	310
Nickel	14.6	19.76	200	9 7	6.7	9.4	8 4	7 1	8.8
Potassium	2895	1717	NV	910	720	770	720	490	1100

Table 3.1 (continued)
1993 Soil Sampling Results for SWMU 35, Building 1194 OWS
NAS Fort Worth JRB, Texas

Compound	RRS 1 Surface (mg/kg)	RRS 1 Subsurface (mg/kg)	MSC (mg/kg)	1194-SB01 3-5' (mg/kg)	1194-SB01 7-9' (mg/kg)	1194-SB02 1-3' (mg/kg)	1194-SB02 3-5' (mg/kg)	1104-SB03 3-5' (mg/kg)	1194-SB03 5-7' (mg/kg)
Sodium	37300	53200	NV	44	100	44	34	23	87
Vanadium	46 3	37.4	72	21	16	27	17	13	20
Zinc	38.8	31 3	3100	13	12	18	16	13	16

Notes:
All samples analyzed for VOCs (8240/5030) and metals (6010/3050). Only analytical detections are reported.
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value
Results in **bold** and enclosed in [brackets] exceed MSC value
J = Estimated quantitation - possibly biased high based upon QC data.
ND = Not Detected
NV = No Value
Source: Installation Restoration Program, Final Oil/Water Separator Assessment Report, Law Engineering, 1995.

Table 3.2
1997 Groundwater Sampling Results for SWMU 35, Building 1194 OWS
NAS Fort Worth JRB, Texas

Compound	RRS 1 (mg/L)	MSC (mg/L)	BGSMW01 (mg/L)
VOCs (SW8260)			
Methylene chloride	0.0003	0 005	**(0.0019 B)**
Metals (SW6010/7000)			
Barium	0 587	2 0	0 0748
Beryllium	0.0003	0.004	0.0003 B
Calcium	266.3	NV	108
Iron	0 224	NV	**(2.31)**
Magnesium	37.8	NV	9.4
Manganese	0 175	14	**(0.528)**
Mercury	0 0001	0.002	**(0.00011)**
Molybdenum	0.0144	0 51	0.0062 B
Potassium	15.03	NV	0.596 B
Sodium	167	NV	38.5
Zinc	0 118	31	0 0234

Notes:
All samples analyzed for VOCs (SW8260), SVOCs (SW8270), and metals/mercury (6010/7000).
Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value.
B = The indicated compound was detected in the sample as well as the method blank.
NV = No Value
Source: Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998.

Table 3.3
1997 Surface Soil Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB164301 0-2' (mg/kg)	SB164302 0-2' (mg/kg)	SB164303 0-2' (mg/kg)
SVOCs (SW8270)					
Benzo[a]anthracene	PQL	0.039	ND	0 7J	ND
Benzo[b,k]fluoranthene	PQL	0.02	ND	1.4J	ND
Benzo[g,h,i]perylene	PQL	310	ND	0 43J	ND
Benzo[a]pyrene	PQL	0.02	ND	0 79J	ND
Benzo[e]pyrene	PQL	0.02	ND	0.67J	ND
bis(2-Ethylhexyl)phthalate	PQL	0.6	0.17	ND	ND
Chrysene	PQL	3.9	ND	0.77J	ND
Fluoranthene	PQL	400	ND	0.97J	ND
Indeno[1,2,3-cd]pyrene	PQL	0.039	ND	0 47J	ND
Phenanthrene	PQL	310	ND	0.29J	ND
Pyrene	PQL	310	ND	1.1J	ND
VOCs (SW8260)					
Chlorobenzene	PQL	10	**(0.0059)**	**(0.0031)**	**(0.0045)**
Methylene chloride	PQL	0.5	**(0.0079)**	**(0.011)**	**(0.0067)**
Toluene	PQL	100	**(0.027)**	**(0.023)**	**(0.011)**
Pesticides/PCBs (SW8080)					
4,4'-DDE	NV	0.084	ND	0.0024J	ND
Metals/Mercury (SW6010/7471)					
Aluminum	22035	22035	4180	4750	4220
Barium	233	233	28.6	50 9	38.9
Beryllium	1.02	1.02	0.33B	0.37	0 33
Cadmium	0 556	0.556	0 43B	**[(1.0B)]**	ND

Table 3.3 (continued)
1997 Surface Soil Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB164301 0-2' (mg/kg)	SB164302 0-2' (mg/kg)	SB164303 0-2' (mg/kg)
Calcium	167788	NV	104000	52600	1120
Chromium	25.86	25.86	8.4	16	8.7
Cobalt	11 05	610	1.9B	1.4B	2.3B
Copper	17.37	130	4	6.2B	3.5B
Iron	17717	NV	7360	6170	6900
Lead	30 97	30.97	9.2B	**[(81.8)]**	ND
Magnesium	3003	NV	1300	857	357
Manganese	849	1400	125	58N	140N
Molybdenum	1.46	51	0 91B	0.87B	0.96B
Nickel	14 6	200	4.7B	4.9B	5 3B
Potassium	2895	NV	651	785	669
Sodium	37300	NV	85.8	43 2	12.1B
Vanadium	46.3	72	16.8B	13	13.7
Zinc	38 8	3100	11 4N	30.2N	10.7N
Mercury	0.14	0.2	0.01B	0.5B	0.01B

Notes.
All samples analyzed for VOCs (SW8260), SVOCs (SW8270), pesticides/PCBs (SW8080), and metals/mercury (6010/7471).
Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value
B = The indicated compound was detected in the sample as well as the method blank
J = Result is detected below the reporting limit or is an estimated concentration
N = Spiked sample recovery not within limits
ND = Not detected
NV = No value
Source: Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998.

Table 3.4
1997 Subsurface Soil Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB164301 6-8' (mg/kg)	SB164301 10-12' (mg/kg)	SB164302 10-12' (mg/kg)	SB164303 6-8' (mg/kg)	SB164303 10-12' (mg/kg)
VOCs (SW8260)							
Acetone	PQL	1000	0.004J	ND	ND	0 0043J	ND
Methylene chloride	PQL	0.5	ND	**(0.0053B)**	**(0.0099B)**	ND	**(0.0063B)**
Toluene	PQL	100	ND	ND	ND	ND	0.012
SVOCs (SW8270)							
(Z)-9-Octadecenamide	PQL	NV	ND	0.0053J	ND	ND	ND
Metals/Mercury (SW6010/7471)							
Aluminum	20260	20262	ND	971	1210	ND	2500
Arsenic	6.58	6.58	4.1J	ND	ND	3 5J	ND
Barium	128 1	200	13.2	13 3	11 7	36.7	24.5
Beryllium	1.13	1.13	ND	0 34	0.21B	ND	0.21B
Cadmium	0.59	0.59	ND	0 5B	0.39B	ND	ND
Calcium	272000	NV	ND	199	230	ND	393
Chromium	16.31	16.31	5.8J	7.0B	4.3B	7 6J	4.4B
Cobalt	6 19	610	ND	4 4B	2B	ND	1.4B
Copper	13 72	130	ND	6.7	2.5B	ND	2 1B
Iron	17469	NV	ND	17000	12400	ND	7930

Table 3.4 (continued)
1997 Subsurface Soil Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB164301 6-8' (mg/kg)	SB164301 10-12' (mg/kg)	SB164302 10-12' (mg/kg)	SB164303 6-8' (mg/kg)	SB164303 10-12' (mg/kg)
Lead	12 66	12.66	5J	7.8B	ND	4.7J	ND
Magnesium	2420	NV	ND	54.1	139	ND	272
Manganese	351.7	1400	ND	198N	149N	ND	105N
Molybdenum	1.93	51	ND	0.81B	0.65B	ND	0.57
Nickel	19.76	200	ND	8 6B	4 1B	ND	3.1B
Potassium	1717	NV	ND	127B	169B	ND	322B
Selenium	0.313	5 0	1.3J	ND	ND	**(0.9J)**	ND
Sodium	53200	NV	ND	34.5	16 1B	ND	16.5B
Vanadium	37 4	72	ND	17 5	11.5	ND	9.2B
Zinc	31 3	3100	ND	17.4N	11.4N	ND	10N

Notes:
All samples analyzed for VOCs (SW8260), SVOCs (SW8270), pesticides/PCBs (SW8080), and metals/mercury (6010/7471). Only analytical detections are reported.
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value.
B = The indicated compound was detected in the sample as well as the method blank.
J = Result is detected below the reporting limit or is an estimated concentration
N = Spiked sample recovery not within limits
ND = Not detected
NV = No value
Source: Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998

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Table 3.5
1997 Groundwater Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/L)	MSC (mg/L)	WITCTA005 (mg/L)	WITCTA006 (mg/L)
VOCs (SW8260)				
cis-1,2-Dichloroethene	PQL	0 07	**[(0.097)]**	**[(0.11)]**
Methylene chloride	PQL	0.005	**[(0.0088B)]**	0.0032B
Trichloroethene	PQL	0 005	**[(0.310)]**	**[(0.025)]**
SVOCs (SW8270)				
bis(2-Ethylhexyl)phthalate	PQL	0.006	0.0016J	ND
Metals/Mercury (SW6010/7471)				
Aluminum	1.332	100	ND	1.21
Antimony	0 002	0.006	**[(0.0237B)]**	ND
Arsenic	0 0049	0.05	ND	**(0.0282B)**
Barium	0.587	2.0	0 248	0 166
Calcium	266.3	NV	123	141
Cobalt	0.0089	6.1	0 0032B	ND
Iron	0.224	NV	0.0627B	**(1.74)**
Magnesium	37 80	NV	24.3	18
Manganese	0.175	14	**(3.4)**	**(1.66)**
Molybdenum	0.0144	0.51	ND	0 0066B
Nickel	0 0204	2.0	0.011B	ND

Table 3.5 (continued)
1997 Groundwater Sampling Results for SWMU 40, Building 1643 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/L)	MSC (mg/L)	WITCTA005 (mg/L)	WITCTA006 (mg/L)
Potassium	15.03	NV	4.89B	3 06B
Sodium	167	NV	113	103
Vanadium	0 012	0.72	ND	0 0024B
Zinc	0.118	31	0.0024B	0.0087B

Notes:
All samples analyzed for VOCs (SW8260), SVOCs (SW8270), and metals/mercury (6010/7471). Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value
B = The indicated compound was detected in the sample as well as the method blank.
J = Result is detected below the reporting limit or is an estimated concentration
ND = Not detected
NV = No value
Source: Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998.

Table 3.6
Surface Soil Sampling Results for SWMU 41, Building 1414 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	1414-SB01* 1-3' (mg/kg)	1414-SB03* 1-3' (mg/kg)
VOCs (SW8260)				
Acetone	PQL	10	ND	**(0.038)**
Methylene chloride	PQL	0.5	**(0.019)**	**(0.022)**
Metals (SW6010)				
Aluminum	22035	22035	7700	6800
Arsenic	5 85	5 85	**[(8.7)]**	4 1
Barium	233	233	86	88
Beryllium	1.02	1.02	0 73	0 7
Cadmium	0.556	0.556	**[(2.2)]**	**[(1.4)]**
Calcium	167788	NV	12000 J	5200 J
Chromium	25.86	25 86	8.6	8 1
Cobalt	11.05	610	**(16)**	7.7
Copper	17.37	130	7.9	9.9
Iron	17717	NV	16000 J	8100 J
Lead	30.97	30.97	**[(51)]**	11
Magnesium	3003	NV	1200	1100

Table 3.6 (continued)
Surface Soil Sampling Results for SWMU 41, Building 1414 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	1414-SB01* 1-3' (mg/kg)	1414-SB03* 1-3' (mg/kg)
Manganese	849	1400	430	110
Nickel	14.6	200	**(16)**	10
Potassium	2895	NV	820	700
Sodium	37300	NV	270	200
Vanadium	46.3	72	25	17
Zinc	38 8	3100	13 J	13 J

Notes
All 1993 samples were analyzed for VOCs (SW8240) and metals (SW6010). Only analytical detections are reported.
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value
J = Result is detected below the reporting limit or is an estimated concentration
ND = Not detected
NV = No value
* = Sample collected in 1993.
Source: Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998

Table 3.7
Subsurface Soil Sampling Results for SWMU 41, Building 1414 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB141401** 2-4' (mg/kg)	1414-SB01* 7-9' (mg/kg)	1414-SB02* 3-5' (mg/kg)	1414-SB02* 7-9' (mg/kg)	1414-SB03* 7-9' (mg/kg)
VOCs (SW8260)							
Acetone	PQL	10	**(0.0067 J)**	ND	**(0.066)**	ND	ND
Methylene chloride	PQL	0.5	ND	**(0.021)**	**(0.018)**	**(0.02)**	**(0.018)**
Toluene	PQL	1	**(0.011)**	ND	ND	ND	ND
Metals (SW6010/7000)							
Aluminum	20260	20260	ND	9900	11000	5600	12000
Arsenic	6.58	6 58	4 J	ND	ND	**[(11)]**	**[(9.7)]**
Barium	128.1	128.1	80 7	150	67	34	38
Beryllium	1.13	1.13	ND	0 39	0.75	ND	ND
Cadmium	0.59	0 59	ND	**[(1.3)]**	**[(1.2)]**	**[(1.2)]**	**[(1.6)]**
Calcium	272000	NV	ND	46000 J	4600 J	**(220000 J)**	**(200000 J)**
Chromium	16.31	16.31	12.3	9 4	10	6.5	9.5
Cobalt	6.19	610	ND	4.8	6.1	2 8	6.1
Copper	13.72	130	ND	8.0	5 2	**(17)**	**(18)**
Iron	17469	NV	ND	9400 J	11000 J	6800 J	12000 J
Lead	12.66	12.66	10.8 J	11	**[(13)]**	6.6	8.0
Magnesium	2420	NV	ND	2000	1300	270	**(3100)**

Table 3.7 (continued)
Subsurface Soil Sampling Results for SWMU 41, Building 1414 OWS
NAS Fort Worth JRB, Texas

Compounds	RRS 1 (mg/kg)	MSC (mg/kg)	SB141401** 2-4' (mg/kg)	1414-SB01* 7-9' (mg/kg)	1414-SB02* 3-5' (mg/kg)	1414-SB02* 7-9' (mg/kg)	1414-SB03* 7-9' (mg/kg)
Manganese	351 7	1400	ND	190	170	23	**(500)**
Mercury	0.035	0.2	0.028 J	ND	ND	ND	ND
Nickel	19.76	200	ND	11	9.6	7 4	11
Potassium	1717	NV	ND	1100	740	910	1400
Selenium	0.313	5	**(0.63)**	ND	ND	ND	ND
Sodium	53200	NV	ND	490	480	320	460
Vanadium	37.4	72	ND	16	16	13	22
Zinc	31 3	3100	ND	16 J	12 J	12 J	19 J

Notes:
All 1993 samples analyzed for VOCs (SW8240) and metals (SW6010) All 1997 results analyzed for VOCs (SW8260), metals/mercury (SW6010/7000), SVOCs (SW8270), and pesticides/PCBs (SW8080). Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value.
J/J = Result is detected below the reporting limit or is an estimated concentration
ND = Not detected
NV = No value
* = Sample collected in 1993.
** = Sample collected in 1997
Source Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998

Table 3.8
Groundwater Sampling Results for SWMU 41, Building 1194 OWS
NAS Fort Worth JRB,Texas

Compound	RRS 1 (mg/L)	MSC (mg/L)	WITCTA016* (mg/L)
VOCs (SW8260)			
Methylene chloride	PQL	0 005	**(0.0017 B)**
cis-1,2-Dichloroethene	PQL	0.07	**[(0.072)]**
Trichloroethene	PQL	0.005	**[(0.029)]**
Metals (SW6010/7000)			
Aluminum	1.332	100	0.0387 B
Barium	0 587	2 0	0.160
Calcium	266.3	NV	138
Iron	0 224	NV	**(0.249)**
Magnesium	37.8	NV	**(122)**
Manganese	0 175	14	0.0646
Potassium	15 03	NV	1.59 B
Sodium	167	NV	142
Zinc	0.118	31	0 006 B

Notes·
All samples analyzed for VOCs (SW8260), SVOCs (SW8270), metals/mercury (SW6010/7000 and SW7471) Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC value.
B = The indicated compound was detected in the sample as well as the method blank.
NV = No Value
* = Sample collected in March 1997.
Source. Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998

Table 3.9
Groundwater Sampling Results for AOC 6
NAS Fort Worth JRB, Texas

Compound	RRS 1 (mg/L)	MSC (mg/L)	ST14-W22 04/95 (mg/L)	ST14-W22 07/95 (mg/L)
Metals (SW6010/3050)				
Aluminum	1.332	1.332	**[(4.7)]**	0.5
Barium	0.587	2	0.140	0.121
Calcium	266.3	NV	210	151
Iron	0.2239	0 3	**[(13)]**	**[(1.17)]**
Magnesium	37.8	NV	9.8	7 1
Manganese	0 175	2.4	**(0.21)**	0.109
Potassium	15 03	NV	3.3	2 46
Sodium	167.2	NV	20	19.8
Zinc	0 0123	0 71	**(0.046)**	ND
Lead (GFAA/SW3005M/7421)				
Lead	0 0016	0 015	**(0.0073)**	ND
VOCs (SW8260)				
Methylene chloride	PQL	0 005	0 0024 JB	ND
Tetrachloroethene	PQL	0.005	**(0.0013)**	**(0.00094)**
SVOCs (SW8270/SW3520)				
Butyl benzyl phthalate	NV	NV	ND	0.00185 JQ
bis(2-Ethylhexyl)phthalate	PQL	0 006	0.0047 JQ	ND

Notes:
All samples analyzed for metals (SW6010/3050), lead (SW3005M/7421), VOCs (SW8260), and SVOCs (SW8270).
Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
Results in **bold** and enclosed in [brackets] exceed MSC
NA = Not Analyzed
ND = Not Detected
NV = No Value
B = The indicated compound was detected in the sample as well as the method blank.
JQ = Estimated quantitation: detected below the Practical Quantitation Limit
Source: IRP Basewide Quarterly Ground-Water Monitoring First Semiannual Report, Law Engineering, March 1996

Table 3.10
Surface Soil Sampling Results for SWMU 52, Building 1190 OWS
NAS Fort Worth JRB, Texas

Compound	RRS 1 (mg/kg)	MSC (mg/kg)	1190-SB01* (mg/kg) 0-2'	1190-SB02* (mg/kg) 0-2'	1190-SB03* (mg/kg) 0-2'	SB119001** (mg/kg) 0-2'	SB119002** (mg/kg) 0-2'
VOCs (SW8260)							
Methylene chloride	PQL	0.5	**(0.016)**	**(0.002 JB)**	**(0.011)**	NA	NA
SVOCs (SW8270)							
Pentanamide	PQL	NV	NA	NA	NA	**(0.71 JB)**	ND
1,1,2,2-Tetrachloroethane	PQL	1 4	NA	NA	NA	**(0.28 JB)**	**(0.19 JB)**
1-(4-Dimethylamino-6-Methoxy-S	PQL	NV	NA	NA	NA	ND	**(1.5J)**
Metals (SW6010)							
Aluminum	22035	NV	3200 J	6600	10000	NA	NA
Arsenic	5.855	5.855	ND	4.3	**[(7.6)]**	NA	NA
Barium	233	233	36 J	57	76	NA	NA
Beryllium	1.02	1.02	ND	ND	0 33	NA	NA
Cadmium	0 5562	0.5562	**[(1.8 J)]**	**[(2.1)]**	**[(3.6)]**	NA	NA
Calcium	167788	NV	150000	87000	46000	NA	NA
Chromium	21 056	21 056	6.3 J	9.8	11	NA	NA
Cobalt	11.05	610	2.0 J	2.5	5.2	NA	NA
Copper	17.373	130	7 5 J	5.1	5.9	NA	NA
Iron	17717	NV	5300 J	6800	12000	NA	NA

Table 3.10 (continued)
Surface Soil Sampling Results for SWMU 52, Building 1190 OWS
NAS Fort Worth JRB, Texas

Compound	RRS 1 (mg/kg)	MSC (mg/kg)	1190-SB01* (mg/kg) 0-2'	1190-SB02* (mg/kg) 0-2'	1190-SB03* (mg/kg) 0-2'	SB119001** (mg/kg) 0-2'	SB119002** (mg/kg) 0-2'
Lead	30.97	30.97	8.8 J	10	12	NA	NA
Magnesium	3003	NV	1200	1100	160	NA	NA
Manganese	849.1	849 1	180	92	260	NA	NA
Nickel	14 6	14.6	5.9	5 8	10	NA	NA
Potassium	2895	NV	460 J	680	1200	NA	NA
Sodium	25800	NV	67	39	45	NA	NA
Vanadium	46.26	NV	12	20	19	NA	NA
Zinc	38 8	500	10	18	17	NA	NA

Notes:
All samples analyzed for VOCs (SW8240) and metals (SW6010) Only analytical detections are reported
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value
Results in **bold** and enclosed in [brackets] exceed MSC value
J = Result is detected below the reporting limit or is an estimation
JB = Estimated quantitation, possibly biased high or false positive based upon blank data
NA = Not Analyzed.
ND = Not Detected.
NV = No Value.
* = Samples collected 1994.
** = Samples collected 1997
Sources: Installation Restoration Program, Final Oil/Water Separator Assessment Report, Law Engineering, 1995
Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998

Table 3.11
Subsurface Soil Sampling Results for SWMU 52, Building 1190 OWS
NAS Fort Worth JRB, Texas

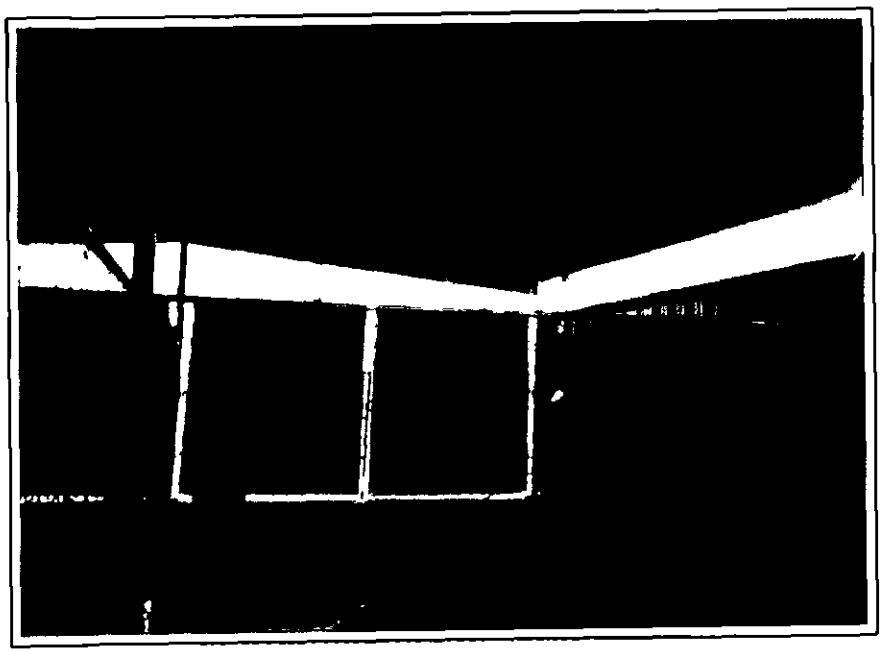
Compound	RRS 1 (mg/kg)	MSC (mg/kg)	SB119002* 4-6' (mg/kg)	SB119001* 6-8' (mg/kg)
SVOCs (SW8270)				
Pentanamide	PQL	NV	ND	**(0.97 JB)**
1,1,2,2-Tetrachloroethane	PQL	NV	**(0.26 JB)**	**(0.28 JB)**

Notes:
All samples analyzed for SVOCs (SW8270), and pesticides/PCBs (SW8080) Only analytical detections are reported.
Results in **bold** and enclosed in (parentheses) exceed RRS 1 value.
JB = Estimated quantitation, possibly biased high or false positive based upon blank data
* = Sample collected 1997.
Source· Draft NAS Fort Worth OWS RCRA Facility Investigation Addendum Report, IT Corporation, 1998.

FIGURES

WAA 1059
SWMU 16

June, 1999



June, 1999

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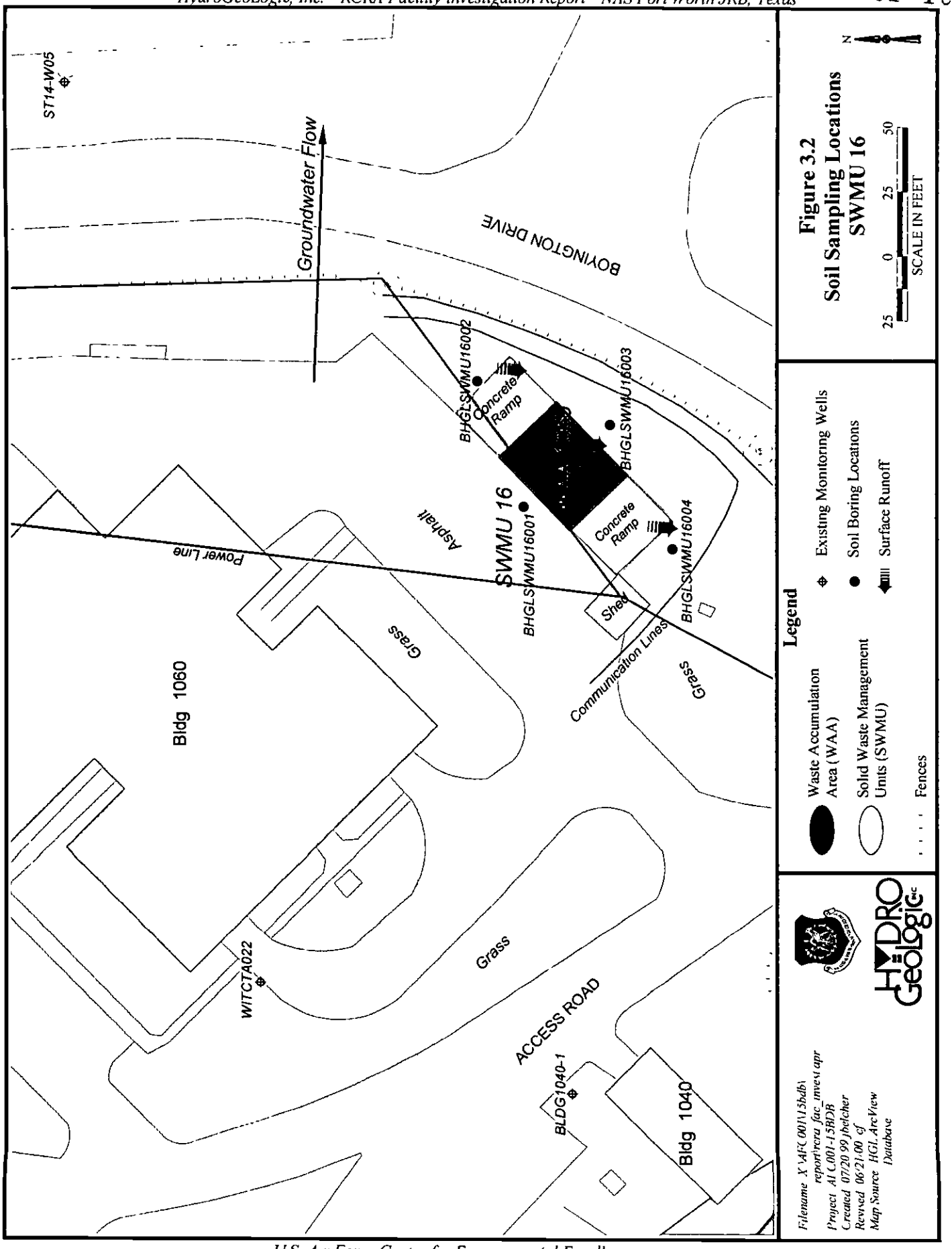
Created: 06/12/99 cfarmer
Revised: 06/21/00 cf
Source: HGI ArcView Database

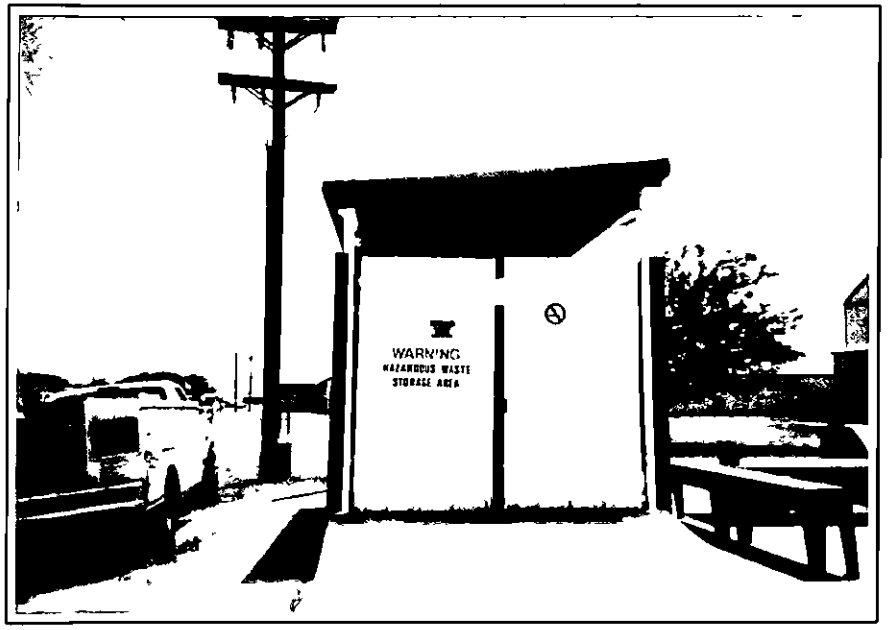
U.S. Air Force Center for Environmental Excellence
Brooks AFB, Texas

Figure 3.1
Photographs — WAA 1059

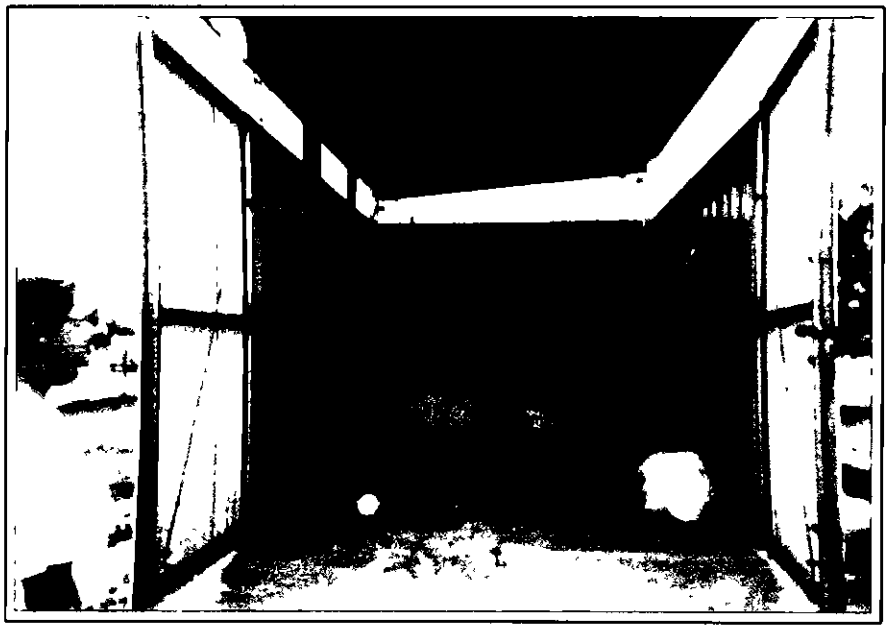

ST14-W05
Groundwater Flow
BOVINGTON DRIVE
BHGLSWMU16002
Concrete Ramp
BHGLSWMU16003
SWMU 16
BHGLSWMU16001
Concrete Ramp
BHGLSWMU16004
Asphalt
Power Line
Shed
Communication Lines
Grass
Grass
Grass
Bldg 1060
WITCTA022
ACCESS ROAD
BLDG1040-1
Bldg 1040
Figure 3.2
Soil Sampling Locations
SWMU 16
N
25 0 25 50
SCALE IN FEET
Legend
Waste Accumulation Area (WAA)
Solid Waste Management Units (SWMU)
Fences
Existing Monitoring Wells
Soil Boring Locations
Surface Runoff
HYDRO GeoLogic Inc
Filename X:\AFC 001\15bdb\ report\rcra fac_invest apr
Project AFC001-15BDB
Created 07/20/99 jbelcher
Revised 06/21/00 cf
Map Source HGL ArcView Database

WAA 1436
SWMU 33

June, 1999



June, 1999



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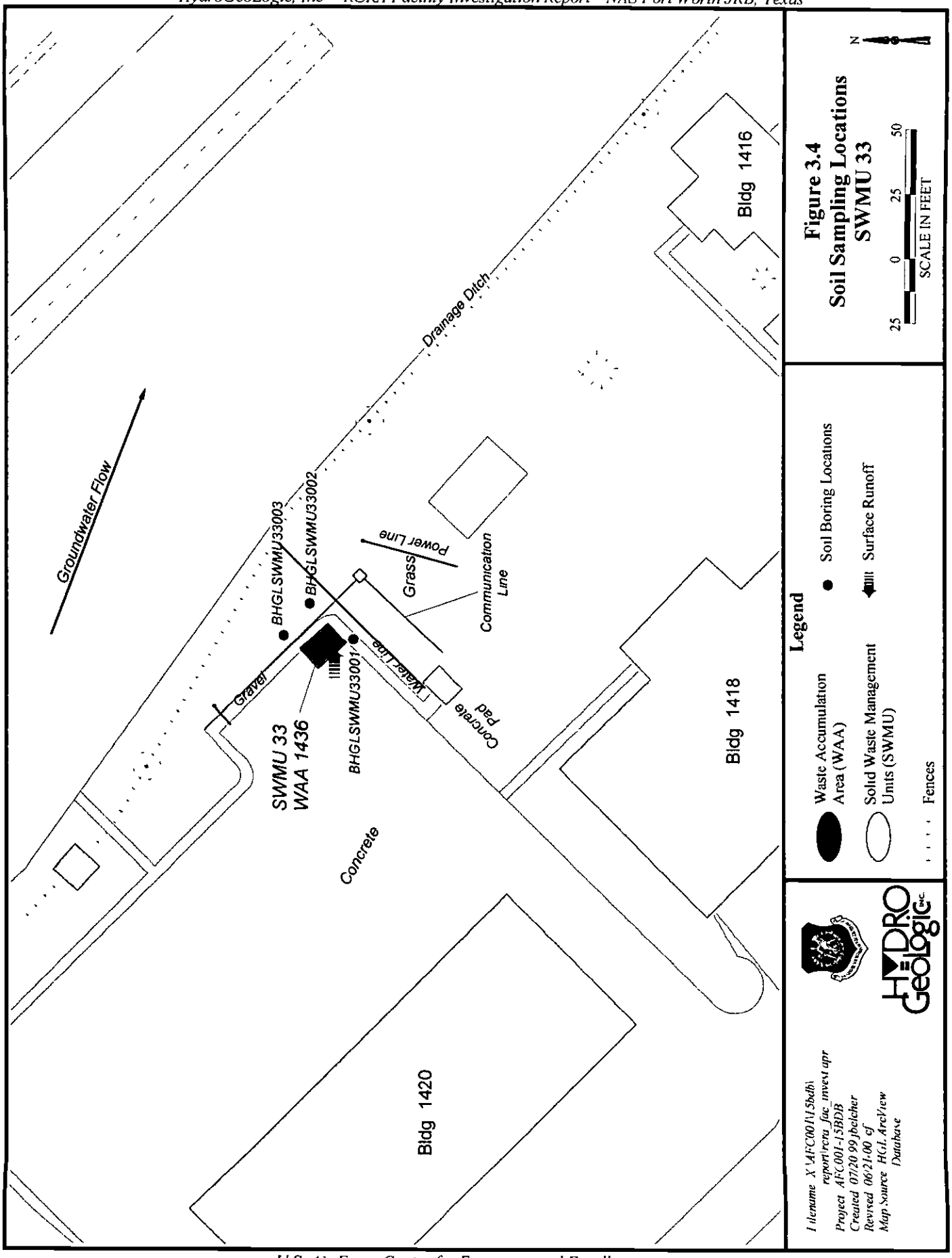
Revised
Source HGI ArcView Database

HYDRO GeoLogic

U S Air Force Center for Environmental Excellence
Brooks AFB, Texas

Figure 3.3
Photographs — WAA 1436


Groundwater Flow
Drainage Ditch
Bldg 1416
Bldg 1418
Bldg 1420
BHGLSWMU33003
BHGLSWMU33002
BHGLSWMU33001
SWMU 33
WAA 1436
Gravel
Concrete
Concrete Pad
Water Line
Grass
Power Line
Communication Line
Figure 3.4
Soil Sampling Locations
SWMU 33
N
25
0
25
50
SCALE IN FEET
Legend
Waste Accumulation Area (WAA)
Solid Waste Management Units (SWMU)
Fences
Soil Boring Locations
Surface Runoff
HYDRO GeoLogic Inc.
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Created 07/20/99 jbelcher
Revised 06/21/00 cf
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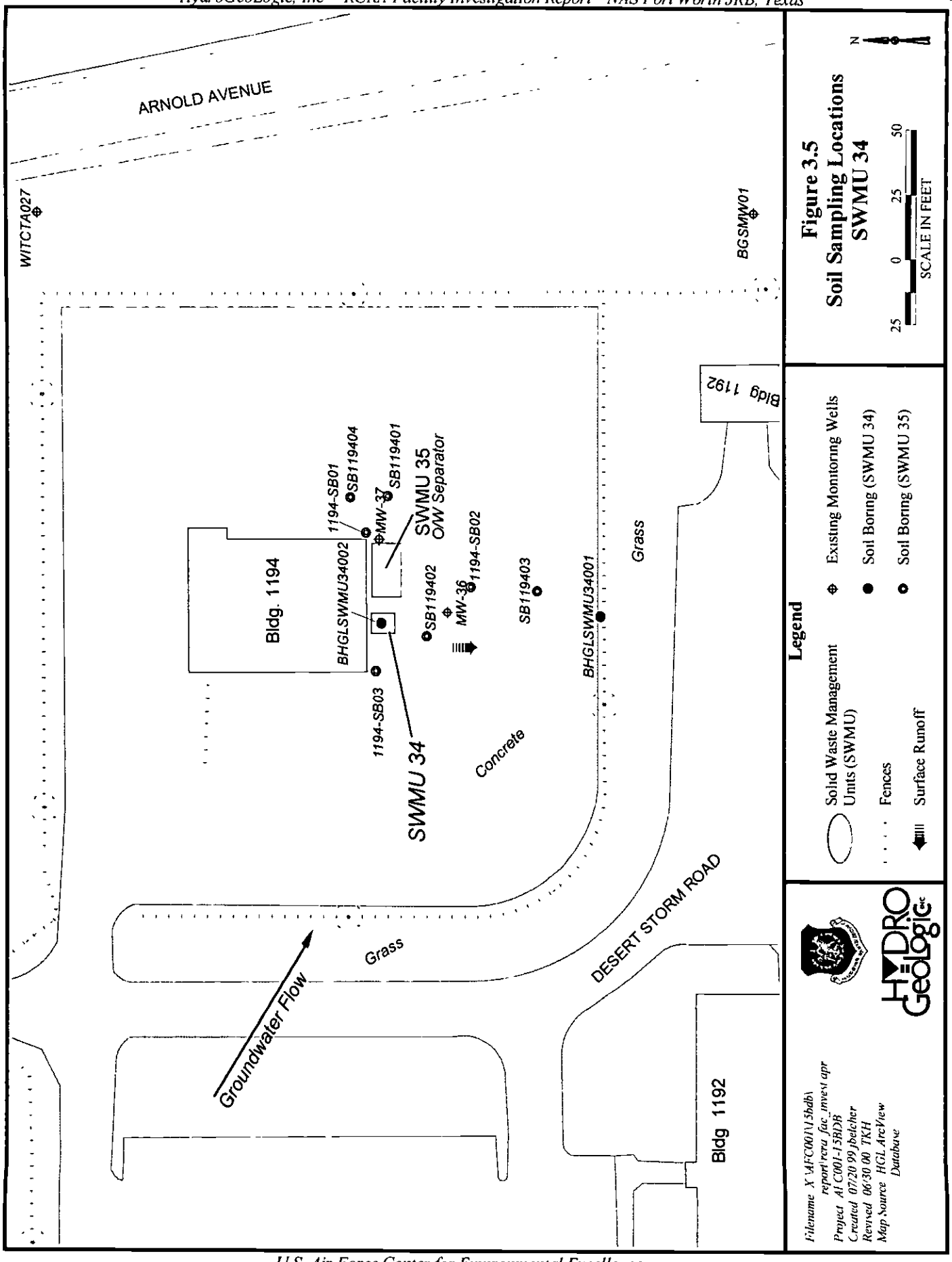
ARNOLD AVENUE
WITCTA027
BGSMW01
Bldg. 1194
BHGLSWMU34002
1194-SB01
SB119404
MW-37
SB119401
SWMU 35
O/W Separator
1194-SB02
MW-36
SB119402
SB119403
BHGLSWMU34001
1194-SB03
SWMU 34
Concrete
Grass
Bldg 1192
DESERT STORM ROAD
Grass
Groundwater Flow
Bldg 1192
Figure 3.5
Soil Sampling Locations
SWMU 34
N
25 0 25 50
SCALE IN FEET
Legend
Solid Waste Management Units (SWMU)
Existing Monitoring Wells
Fences
Soil Boring (SWMU 34)
Surface Runoff
Soil Boring (SWMU 35)
HYDRO GeoLogic
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Created 07/20/99 jbelcher
Revised 06/30/00 TKH
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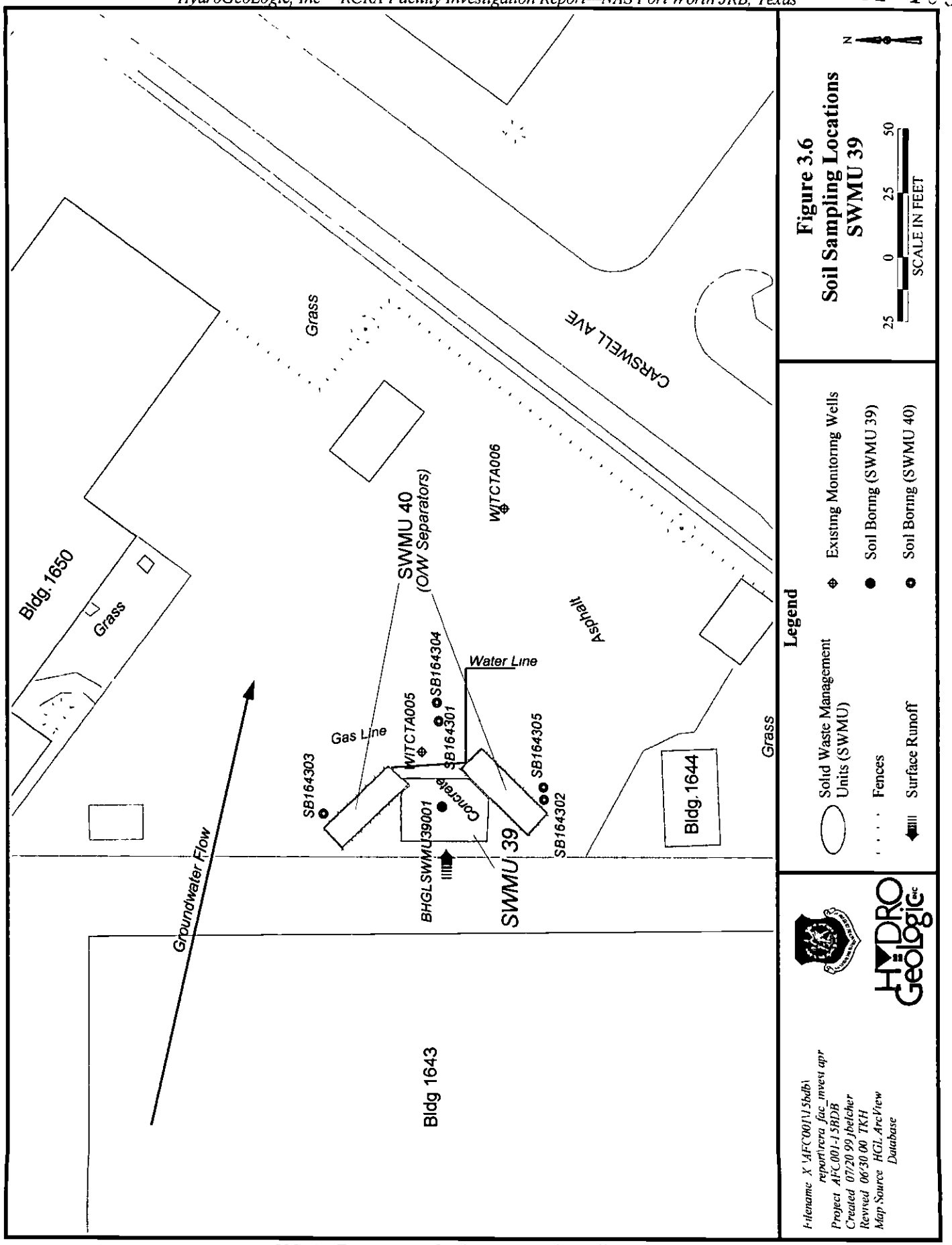
Figure 3.6
Soil Sampling Locations
SWMU 39
N
25 0 25 50
SCALE IN FEET
Legend
Solid Waste Management Units (SWMU)
Existing Monitoring Wells
Fences
Soil Boring (SWMU 39)
Surface Runoff
Soil Boring (SWMU 40)
CARSWELL AVE
Grass
Bldg.1650
Grass
SWMU 40
(O/W Separators)
WITCTA006
Asphalt
Water Line
SB164304
SB164301
WITCTA005
Gas Line
SB164303
Concrete
SB164305
SB164302
BHGLSWMU39001
SWMU 39
Groundwater Flow
Bldg.1644
Grass
Bldg 1643
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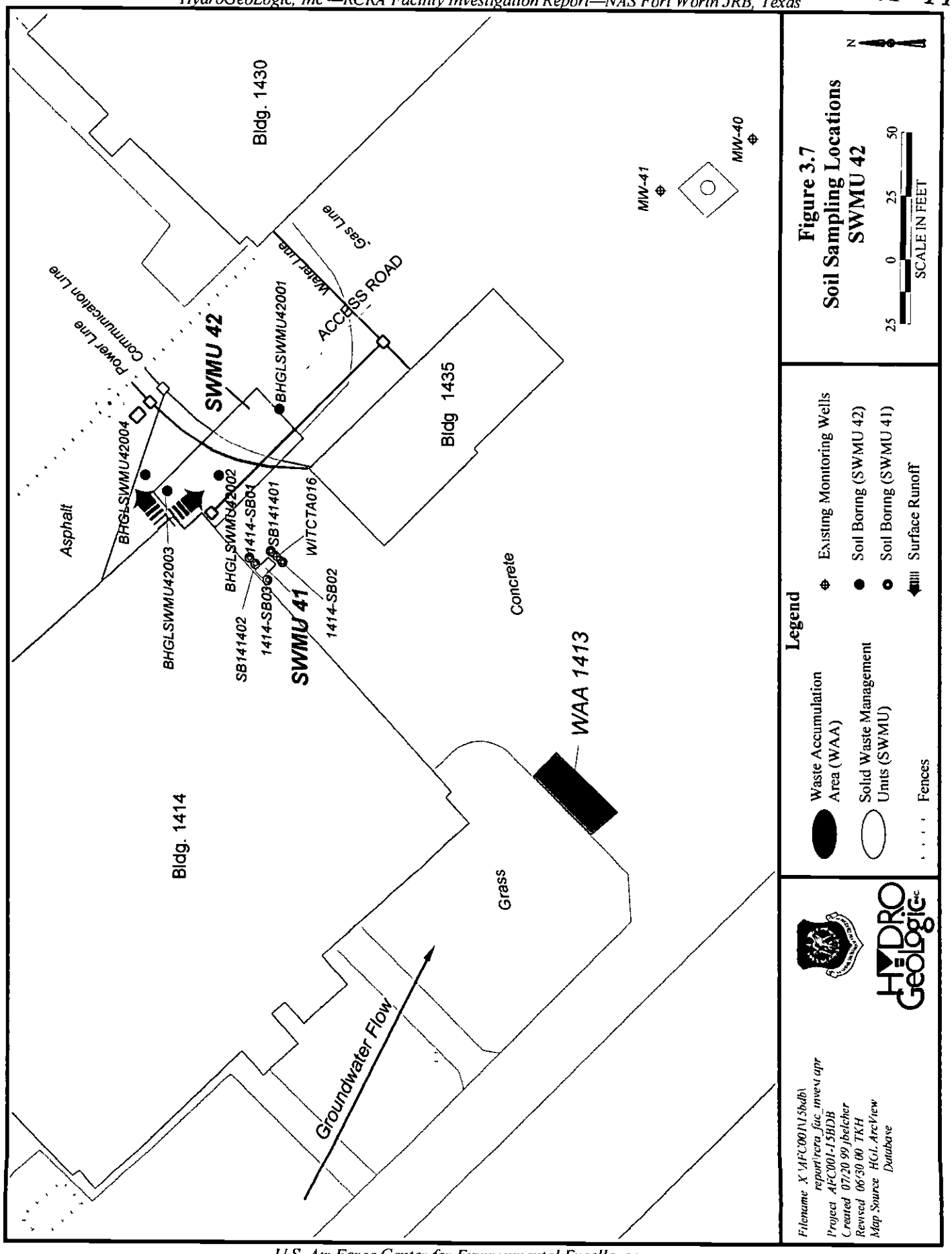
HYDRO GeoLogic


Bldg. 1430
Bldg 1435
Bldg. 1414
SWMU 42
SWMU 41
WAA 1413
ACCESS ROAD
Power Line
Communication Line
Water Line
Gas Line
Asphalt
Concrete
Grass
BHGLSWMU42004
BHGLSWMU42003
BHGLSWMU42002
BHGLSWMU42001
1414-SB01
1414-SB03
1414-SB02
SB141402
SB141401
WITCTA016
MW-41
MW-40
Groundwater Flow
Legend
Waste Accumulation Area (WAA)
Solid Waste Management Units (SWMU)
Fences
Existing Monitoring Wells
Soil Boring (SWMU 42)
Soil Boring (SWMU 41)
Surface Runoff
Figure 3.7
Soil Sampling Locations
SWMU 42
SCALE IN FEET
25 0 25 50
N
HYDRO GeoLogic
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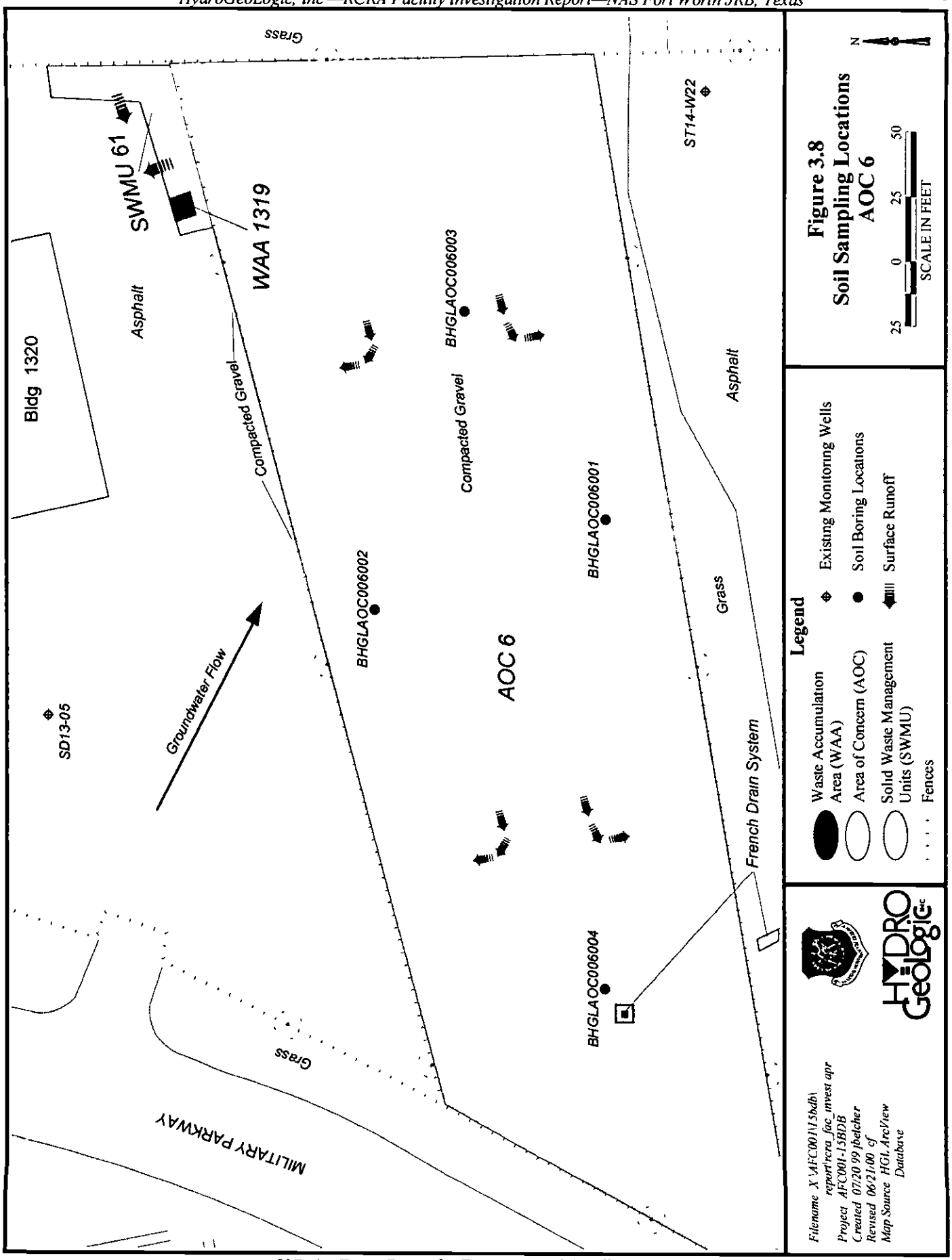
Grass
SWMU 61
WAA 1319
Bldg 1320
Asphalt
Compacted Gravel
BHGLAOC006003
Compacted Gravel
ST14-W22
Asphalt
BHGLAOC006001
BHGLAOC006002
Grass
AOC 6
SD13-05
Groundwater Flow
French Drain System
BHGLAOC006004
Grass
MILITARY PARKWAY
Figure 3.8
Soil Sampling Locations
AOC 6
N
25 0 25 50
SCALE IN FEET
Legend
Waste Accumulation Area (WAA)
Area of Concern (AOC)
Solid Waste Management Units (SWMU)
Fences
Existing Monitoring Wells
Soil Boring Locations
Surface Runoff
HYDRO GeoLogic INC
Filename X:\AFC001\15bdb\report\rcra_fac_invest.apr
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Created 07/20/99 jbelcher
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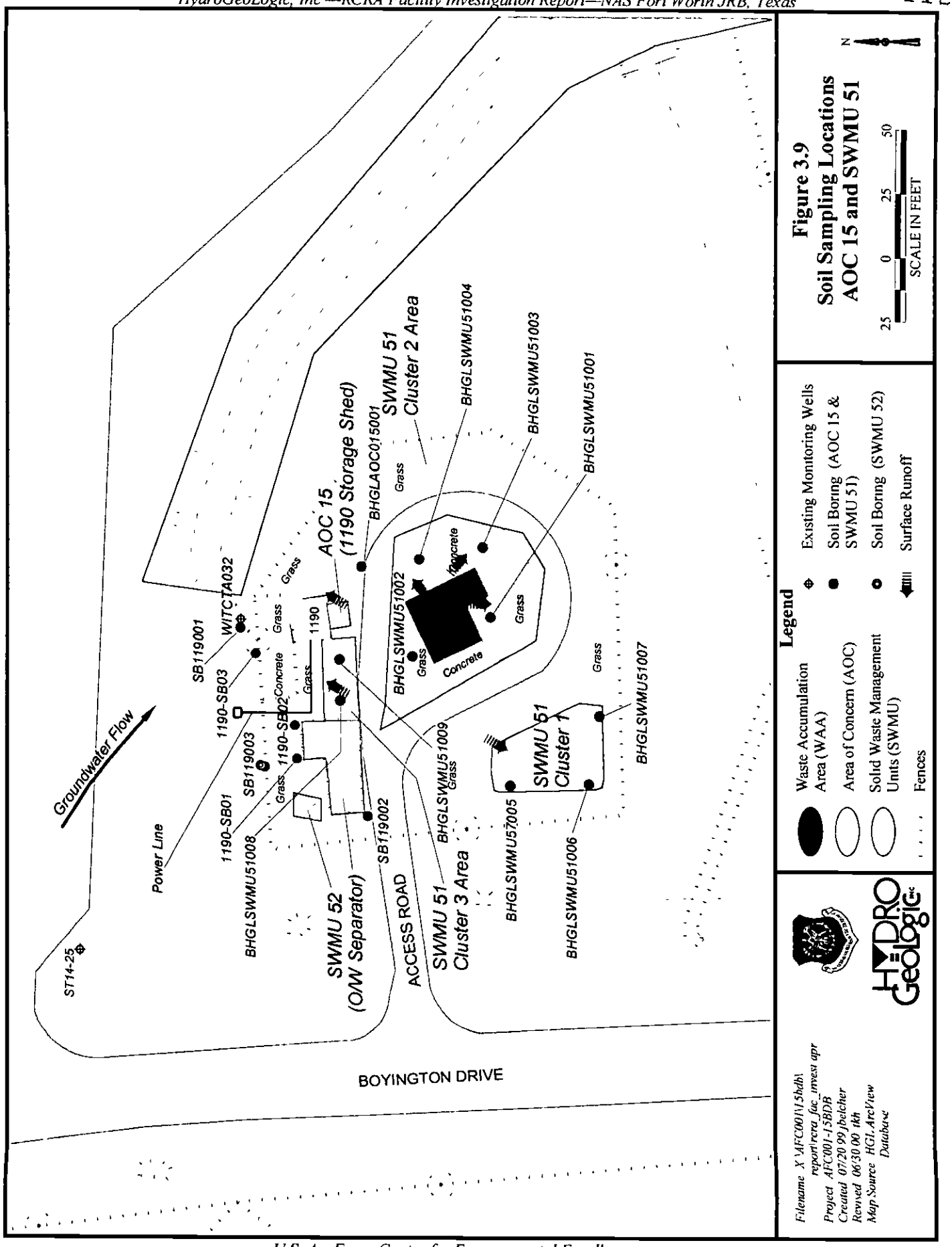
Groundwater Flow
Power Line
ST14-25
SB119001
WITCTA032
1190-SB03
1190-SB01
SB119003
1190-SB02
BHGLSWMU51008
SWMU 52
(O/W Separator)
SB119002
ACCESS ROAD
BOYINGTON DRIVE
AOC 15
(1190 Storage Shed)
BHGLAOC015001
1190
Grass
Concrete
SWMU 51
Cluster 2 Area
BHGLSWMU51002
BHGLSWMU51004
BHGLSWMU51003
BHGLSWMU51001
BHGLSWMU51009
SWMU 51
Cluster 3 Area
SWMU 51
Cluster 1
BHGLSWMU57005
BHGLSWMU51006
BHGLSWMU51007
Legend
Waste Accumulation Area (WAA)
Area of Concern (AOC)
Solid Waste Management Units (SWMU)
Fences
Existing Monitoring Wells
Soil Boring (AOC 15 & SWMU 51)
Soil Boring (SWMU 52)
Surface Runoff
Figure 3.9
Soil Sampling Locations
AOC 15 and SWMU 51
25 0 25 50
SCALE IN FEET
N
HYDRO GeoLogic
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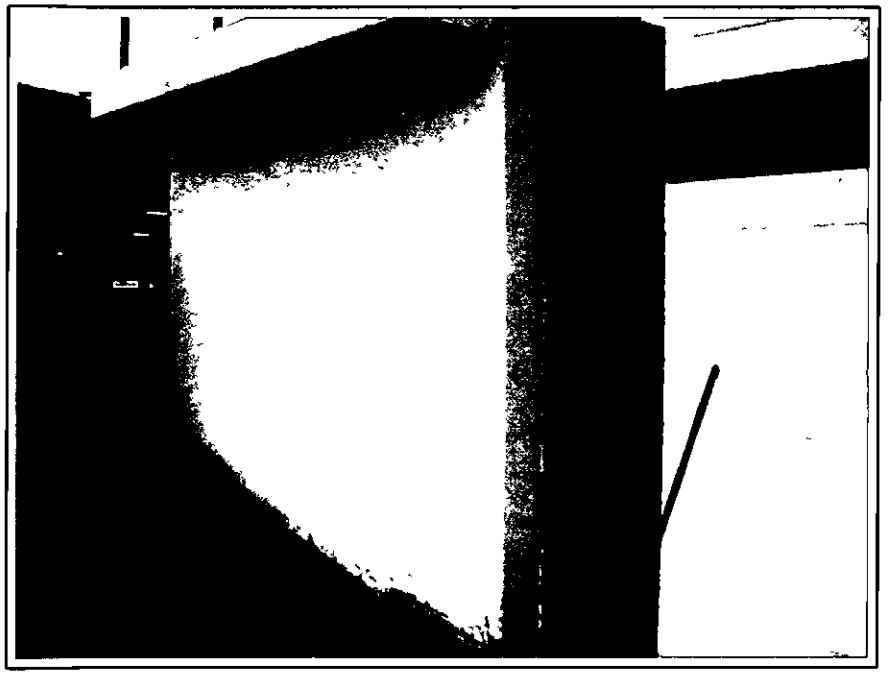
Building 1190 Storage Shed
AOC 15

June, 2000



June, 2000

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Brooks AFB, Texas

Figure 3.10
Photographs — Building 1190 Storage Shed

TAB

Section 4

4.0 INVESTIGATION RESULTS

This section provides a discussion of analytical results of the soil samples collected at each SWMU/AOC. All soil samples were analyzed in accordance with the rationale presented in the RFI WPs (HydroGeoLogic, 1999a).

To determine if a release has occurred at any of the SWMUs and AOCs, the results from samples collected and analyzed for inorganic compounds were compared to the approved base-specific background values as presented in the Final Basewide Background Study (Jacobs, 1998). The results from samples collected and analyzed for organic compounds were compared to respective MQLs. Furthermore, all analytical results were compared to available MSCs to determine if detected contaminants posed a threat to shallow groundwater. Analytical data summaries are presented in Appendix C.

During the initial field effort, a portion of the soil sample volume submitted for each metals analysis was held at the laboratory for SPLP extraction and analysis at a later date, if necessary. This SPLP extraction method was used in order to possibly provide a site specific adjusted MSC if inorganic compounds were detected above the MSC. Therefore, if inorganic compounds were detected above the MSC and an SPLP extraction and analysis was performed, the results were compared to the industrial groundwater MSC.

4.1 SWMU 16

4.1.1 Lithologic Findings

Four DPT soil borings, BHGLSWMU16001, BHGLSWMU16002, BHGLSWMU16003, and BHGLSWMU16004, were advanced at SWMU 16, with one boring located along each side of the SWMU. Borings BHGLSWMU16004 and BHGLSWMU16003 were located downgradient of potential surface runoff from SWMU 16. Boring logs are presented as Appendix D.

Construction debris fill was encountered between 6 and 14 feet below ground surface (bgs) in two of the SWMU 16 soil borings (BHGLSWMU16001 and BHGLSWMU16004). The debris consisted of cardboard, paper, construction lumber, and aluminum foil. A solvent-like odor between 12 and 14 feet bgs was also noted at boring BHGLSWMU16001. No debris was encountered at borings BHGLSWMU16002 and BHGLSWMU16003.

Lithology was analyzed using a southwest-northeast transect along borings BHGLSWMU16004, BHGLSWMU16001, and BHGLSWMU16002; using a northwest-southeast transect along borings BHGLSWMU16001 and BHGLSWMU16003; and using a southwest-northeast transect along borings BHGLSWMU16003 and BHGLSWMU16002. Lithologic cross sections for SWMU 16 are presented as Figure 4.1. Soil boring BHGLSWMU16004 exhibited clayey sandy silt to a depth of 6 feet bgs, mixed soil fill and construction debris between 6 and 14 feet bgs, and native soils composed of poorly sorted silty sandy gravel from 14 to 20 feet bgs. Similarly, at BHGLSWMU16001, fill soil composed of

sand, gravel, silt, and clayey silt was encountered from the surface to a depth of 10 feet bgs overlying mixed fill soil and debris between 10 and 14 feet bgs and native soils composed of poorly sorted gravelly sandy silty clay grading to sand and gravel between 14 and 23 feet bgs. To the northeast at boring BHGLSWMU16002, lithology reveals a sandy gravel fill between the surface and 2 feet bgs with clayey silt grading to a sandy gravelly silt between 2 and 8 feet bgs overlying a clayey silt grading to sandy clay between 8 and 14 feet bgs and native soils composed of poorly sorted gravelly sandy clay grading to sand and gravel between 15 and 23 feet bgs. Boring BHGLSWMU16003, located to the northeast of BHGLSWMU16004, exhibited a similar stratification as boring BHGLSWMU16002.

Groundwater was encountered at approximately 18 to 21 feet bgs at SWMU 16. Groundwater flow direction across the site trends generally to the east towards the West Fork Trinity River.

4.1.2 Surface Soil Detections

A total of four surface soil samples were collected for analysis at SWMU 16: BHGLSWMU16001, BHGLSWMU16002, BHGLSWMU16003, and BHGLSWMU16004. Soil sampling locations are depicted in Figure 4.2. All surface soil samples were analyzed for the list of analyses presented in Section 3.2.1.2. As presented in Table 4.1 and depicted in Figure 4.2, analytical results of surface soil samples indicate low concentrations of several VOCs, and SVOCs above background.

4.1.2.1 Inorganic Constituents

No metals were detected above background concentrations in any of the surface soil samples collected at SWMU 16.

4.1.2.2 Organic Constituents

The following VOCs were detected in the surface soil samples collected at SWMU 16:

- ***M-,p*-xylene** (0.011 mg/kg) and ***o*-xylene** (0.007 F mg/kg) were detected in the surface soil sample collected from boring BHGLSWMU16001. Both of these concentrations were only slightly above the MQL of 0.005 mg/kg and well below the MSC of 1,000 mg/kg for these compounds.

- **Acetone** (0.021 mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU16003. This result is only slightly above the MQL (0.005 mg/kg) and well below the MSC (1,000 mg/kg) for this analyte.

The following SVOCs were detected in the surface soils samples collected at SWMU 16:

- **Benzo[*a*]anthracene** (0.94 mg/kg), **benzo[*a*]pyrene** (0.66 mg/kg), **benzo[*b*]fluoranthene** (1.1 mg/kg), **benzo[*k*]fluoranthene** (0.53 mg/kg), and

indeno[1,2,3-*c,d*]pyrene (0.44 F) were detected in the surface soil sample collected from boring BHGLSWMU16002. These results are slightly above both the MQL and the MSC for each compound.

- **Chrysene** (1.1 mg/kg), **fluoranthene** (3.4 mg/kg), **phenanthrene** (2.8 mg/kg), and **pyrene** (2.0 mg/kg) were detected in the surface soil sample collected from boring BHGLSWMU16002. These results are slightly above the MQL (0.33 mg/kg), and well below the MSC for each compound.

4.1.3 Subsurface Soil Detections

A total of 13 subsurface soil samples were collected for analysis at the four soil boring locations within SWMU 16 (Figure 4.2). Soil samples were collected at 5-foot intervals until the water table was encountered. All subsurface soil samples were analyzed for the list of analyses presented in Section 3.2.1.2. As presented in Table 4.2 and depicted in Figure 4.2, analytical results of subsurface soil samples indicate low concentrations of metals and SVOCs in the subsurface soils sampled at SWMU 16.

4.1.3.1 Inorganic Constituents

The following metals were detected in the subsurface soil samples collected at SWMU 16:

- **Lead** (19.1 mg/kg) was detected above background (12.66 mg/kg) and the MSC (12.66 mg/kg) in the soil sample collected at the 7-foot interval of boring BHGLSWMU16001. SPLP extraction and analysis was performed on a portion of the sample volume and the result was compared to the industrial groundwater MSC. Table 4.15 presents the results of the SPLP analysis. Lead was not detected in the SPLP analyses, and as a result, a site specific alternate MSC of 19.1 mg/kg was provided for this analyte.

- **Mercury** (0.07 mg/kg) was detected above background (0.035 mg/kg) in the soil sample collected from the 7-foot interval of boring BHGLSWMU16001. This concentration of mercury was below the MSC of 0.2 mg/kg.

- **Silver** (0.29 J mg/kg) was detected at the 17-foot interval of boring BHGLSWMU16001. This detection of silver is slightly above background (0.128 mg/kg) and well below the MSC of 51 mg/kg.

4.1.3.2 Organic Constituents

The following SVOC was detected in the subsurface soil samples collected at SWMU 16:

- **Napthalene** (1.2 J mg/kg) was detected in the 17-foot interval of the subsurface soil sample and the associated duplicate sample collected from boring

BHGLSWMU16001. This concentration of napthalene is only slightly above the MQL of 0.33 mg/kg and well below the MSC of 200 mg/kg.

4.1.4 Soil pH

Historical records indicate that SWMU 16 may have stored various acids used in operations within the corrosion control shop inside building 1060 As a result, all soil samples collected at SWMU 16 were analyzed for pH. Soil pH levels at SWMU 16 ranged from 7.8 in the surface soil sample collected from BHGLSWMU16003 (Table 4.1) to 9.2 in the soil sample collected from the 15-foot interval of BHGLSWMU16004. Soil pH levels at SWMU 16 range from neutral to alkaline, and are consistent with the calcareous soils (Section 2.2) at NAS Fort Worth JRB.

4.2 SWMU 33

4.2.1 Lithologic Findings

Soil borings BHGLSWMU33001, BHGLSWMU33002, and BHGLSWMU33003 were located adjacent to the walls of the SWMU 33 WAA. Soil samples were collected in 5-foot intervals from the ground surface to the water table at each boring. Borings BHGLSWMU33001 and BHGLSWMU33002 were located downgradient of potential surface runoff from SWMU 33. No debris was encountered at any of the SWMU 33 soil borings. Boring logs are presented as Appendix D.

Lithology was analyzed along a generalized south-north transect along borings BHGLSWMU33003, BHGLSWMU33002, and BHGLSWMU33001. A lithologic cross section for SWMU 33 is presented in Figure 4.3. A similar lithologic stratification of fine grained soils grading to coarser grained soils at depth was found at each of the SWMU 33 borings. Sandy clays and clayey sands were encountered between the ground surface and 8 feet bgs with a silty sand between 8 and 12 feet bgs grading to fine sand between 12 and 18 feet bgs overlying a coarse sand and gravel between 18 and 20 feet bgs.

Groundwater was encountered at approximately 18 to 19 feet bgs at SWMU 33. Groundwater flow direction across the site trends generally to the east towards the West Fork Trinity River.

4.2.2 Surface Soil Detections

A total of three surface soil samples were collected for analysis at SWMU 33: BHGLSWMU33001, BHGLSWMU33002, and BHGLSWMU33003. Soil sampling locations are depicted in Figure 4.4. All surface soil samples were analyzed for the list of analyses presented in Section 3.2.2.3. As presented in Table 4.3 and depicted in Figure 4.4, analytical results of surface soil samples indicate the presence of one metal above background.

4.2.2.1 Inorganic Constituents

The following metal was detected in the surface soil samples collected at SWMU 33:

- **Silver** (0.66 mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU33001. This detection of silver was slightly above background of 0.213 mg/kg and well below the MSC of 51 mg/kg.

4.2.2.2 Organic Constituents

No organic constituents were detected above MQLs in the surface soil samples collected at SWMU 33.

4.2.3 Subsurface Soil Detections

A total of nine subsurface soil samples were collected for analysis at the four soil boring locations within SWMU 33 (Figure 4.4). Subsurface soil samples were collected at 5-foot intervals until the water table was encountered. All subsurface soil samples were analyzed for the list of analyses presented in Section 3.2.2.3. As presented in Table 4.4 and depicted in Figure 4.4, analytical results of subsurface soil samples indicate low concentrations of two metals in the subsurface soils at SWMU 33.

4.2.3.1 Inorganic Constituents

The following metals were detected in the subsurface soil samples collected at SWMU 33:

- **Chromium** (17 mg/kg) was detected above background (16.31 mg/kg) and the MSC (16.31 mg/kg) in the soil sample and related duplicate sample collected at the 5-foot interval of boring BHGLSWMU33002. SPLP extraction and analysis was performed on a portion of the sample volume and the result was compared to the industrial groundwater MSC. Table 4.15 presents the results of the SPLP analysis. Chromium was not detected in the SPLP analysis, and as a result, a site specific alternate MSC of 17 mg/kg was provided for this analyte.

- **Lead** (7.6 mg/kg) was detected below background (12.66 mg/kg) and the MSC (12.66 mg/kg) in the soil sample collected at the 5-foot interval of boring BHGLSWMU33002. However, lead was detected at a concentration of 22.5 mg/kg in the associated duplicate sample collected from the same interval. This detection of 22.5 mg/kg in the duplicate sample slightly exceeds both the background and MSC values of 12.66 mg/kg. Lead (15.7 mg/kg) was also detected above background (12.66 mg/kg) and the MSC (12.66 mg/kg) in the soil sample collected at the 10-foot interval of boring BHGLSWMU33003. SPLP extraction and analysis was performed on a portion of each sample volume in which lead was detected above the MSC. SPLP results were

compared to the industrial groundwater MSC. Table 4.15 presents the results of the SPLP analysis. Lead was not detected in either SPLP analysis, and as a result, a site specific alternate MSC of 22.5 mg/kg was provided for lead at SWMU 33 (Figure 4.4).

4.2.3.2 Organic Constituents

No organic constituents were detected above MQLs in the subsurface soil samples collected at SWMU 33.

4.3 SWMU 34

4.3.1 Lithologic Findings

Two soil borings, BHGLSWMU34001 and BHGLSWMU34002, were advanced at SWMU 34. Soil boring BHGLSWMU34002 was located at the center of SWMU 34 through approximately one foot of reinforced concrete. Boring BHGLSWMU34001 was located downgradient of surface runoff from the site in the grass at the base of the parking lot. Soil boring locations are presented in Figure 4.5. No debris was encountered at any of the SWMU 34 soil borings.

A dissimilar lithologic stratification was found at each of the SWMU 34 borings, for this reason, no cross sections were produced. Lithologic information may be found in the soil boring logs located in Appendix D. Soils at boring BHGLSWMU34001 were composed of a silty clay in the upper 2 feet bgs overlying poorly sorted sandy silty gravel grading to sandy gravely clay by 8 feet bgs and sandy clay between 8 and 11 feet bgs In contrast, soils encountered at BHGLSWMU34002 were generally coarser grained. Lithologic stratification at BHGLSWMU34002 revealed approximately 1 foot of concrete overlying a silty gravel to 3 feet bgs, a silty clayey sand between 3 and 5 feet bgs, a clayey gravelly sand between 5 and 7 feet bgs, and sandy gravel between 7 and 10 feet bgs.

Groundwater flow direction across the site trends generally to the east towards the West Fork Trinity River. Depth to groundwater at SWMU 34 ranged from approximately 9 to 10.5 feet bgs.

4.3.2 Surface Soil Detections

A total of two surface soil samples were collected for analysis at SWMU 34; one soil sample collected from each boring (Figure 4.5). Both surface soil samples were analyzed for the list of analyses presented in Section 3.2.4.3. As presented in Table 4.5 and depicted in Figure 4.5, analytical results of surface soil samples indicate the presence of one VOC above background.

4.3.2.1 Organic Constituents

The following VOC was detected in the surface soil samples collected at SWMU 34:

- **Ethylbenzene** (0.004 mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU34002. This detection of ethylbenzene was only slightly above the MQL of 0.003 mg/kg and well below the MSC of 70 mg/kg.

4.3.2.2 Inorganic Constituents

No inorganic constituents were detected above background in the surface soil samples collected at SWMU 34 (Table 4.5).

4.3.3 Subsurface Soil Detections

Two subsurface soil samples were collected for analysis at SWMU 34 and analyzed for the list of analyses presented in Section 3.2.4.3. As presented in Table 4.6 and depicted in Figure 4 5, analytical results of the subsurface soil samples indicate no detections above background or MQL.

4.4 SWMU 39

4.4.1 Lithologic Findings

Soil boring BHGLSWMU39001 was located within the asphalt parking lot of SWMU 39 downgradient of most surface runoff from the site. The soil boring location is depicted in Figure 4.6. SWMU 39 is a rectangular shaped asphalt area located between the two SWMU 40 OWSs. Soil samples were collected from the soil boring in 5-foot intervals from the ground surface to the water table.

Soils at boring BHGLSWMU39001 were composed of a asphalt and gravel fill to 0.5 feet bgs, silty clayey sand to 7 feet bgs, and gravelly sand to 14 feet bgs. No stained soil or debris was encountered in the BHGLSWMU39001 soil boring. Because only one boring was advanced in this SWMU, no cross sections were produced. Lithologic information may be found in the boring log located in Appendix D.

Groundwater flow direction across the site trends generally to the east towards the West Fork Trinity River. Depth to groundwater at SWMU 39 is approximately 10 feet bgs.

4.4.2 Surface Soil Detections

One surface soil sample was collected for analysis from one location at SWMU 39: BHGLSWMU39001 (Figure 4.6). The surface soil sample was analyzed for the list of analyses presented in Section 3.2.5.3. As presented in Table 4.7 and depicted in Figure 4.6, analytical

results of the surface soil sample indicate no detections above background or MQL at SWMU 39.

4.4.3 Subsurface Soil Detections

One subsurface soil sample was collected for analysis from the 5-foot interval at soil boring BHGLSWMU39001 (Figure 4.6) and analyzed for the list of analyses presented in Section 3.2.5.3. As presented in Table 4.8 and depicted in Figure 4.6, analytical results of the subsurface soil sample indicate one metal detected slightly above background.

4.4.3.1 Inorganic Constituents

The following metal was detected in the subsurface soil sample collected at SWMU 39:

- **Lead** (15.4 mg/kg) was detected in the 5-foot interval of the subsurface soil sample collected from boring BHGLSWMU39001. This detection of lead was only slightly above background (12.66 mg/kg) and the MSC (12.66 mg/kg). SPLP extraction and analysis was performed on a portion of the sample volume and the result was compared to the industrial groundwater MSC. Table 4.15 presents the results of the SPLP analysis. Lead was detected in the SPLP analysis at 0.0397 mg/L, which exceeds the industrial groundwater MSC of 0.015 mg/L, and as a result, no adjusted MSC was provided for this analyte.

4.5 SWMU 42

4.5.1 Lithologic Findings

Soil borings BHGLSWMU42001, BHGLSWMU42002, BHGLSWMU42003 and BHGLSWMU42004 were located adjacent to and within the boundaries of SWMU 42. Soil boring locations were adjusted at the site in order to avoid the large network of subsurface utilities in the area. Borings BHGLSWMU42001 and BHGLSWMU42004 were placed in areas of low, cracked asphalt where surface runoff would have been likely to collect. Soil samples were collected in 5-foot intervals from the ground surface to the water table at each boring. No debris was encountered at any of the SWMU 42 soil borings. Boring logs are presented as Appendix D.

A similar lithologic stratification of soils grading from fine to coarser grained with depth was found at each of the SWMU 42 borings. Lithology was analyzed along a southeast-northwest transect along borings BHGLSWMU42001, BHGLSWMU42002, BHGLSWMU42003 and BHGLSWMU43004. A lithologic cross section of SWMU 42 is presented in Figure 4.7. Soil boring BHGLSWMU426003 reveals approximately 1 foot of surficial asphalt and fill with native soils composed of silty sandy clay and clayey sand to 6 feet bgs overlying a poorly sorted clayey gravelly sand to 14 feet bgs with a well sorted yellowish brown fine sand between 14 and 17 feet bgs and a poorly sorted coarse sandy gravel between 17 and 20 feet

bgs. Similarly, at boring BHGLSWMU42002, soil lithologic stratification reveals concrete and gravel to 1 foot bgs overlying silty sandy clay to 4 feet bgs, poorly sorted silty gravelly clayey sand to 14 feet bgs, and a well sorted yellowish brown fine sand between 14 and 17 feet bgs over a poorly sorted coarse sandy gravel between 17 and 20 feet bgs. Soils at BHGLSWMU42001 were primarily composed of silty clays and clayey sands with some gravel to a depth of 16 feet bgs overlying a poorly sorted coarse sandy gravel between 16 and 20 feet bgs. Boring BHGLSWMU41004, located adjacent and to the northeast of BHGLSWMU42003, also exhibits a similar stratification as borings BHGLSWMU42003 and BHGLSWMU42002.

Groundwater was encountered at approximately 18 to 19 feet bgs at SWMU 42. Groundwater flow direction across the site trends generally to the southeast towards the West Fork Trinity River.

4.5.2 Surface Soil Detections

A total of four surface soil samples were collected for analysis at SWMU 42: BHGLSWMU42001, BHGLSWMU42002, BHGLSWMU42003 and BHGLSWMU42004. Soil sampling locations are presented in Figure 4.8. All surface soil samples were analyzed for the list of analyses presented in Section 3.2.6.3. As presented in Table 4.9 and depicted in Figure 4.8, analytical results of surface soil samples indicate low concentrations of three organic and inorganic compounds above background.

4.5.2.1 Inorganic Constituents

The following metals were detected above background concentrations in the surface soil samples collected at SWMU 42:

- **Mercury** (0.2F mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU42001. This detection was slightly above the MQL of 0.14 mg/kg and equal to the MSC of 0.2 mg/kg.

- **Beryllium** (1.1 mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU42004. This detection of beryllium is slightly above both background (1.02 mg/kg) and MSC (1.02 mg/kg). SPLP extraction and analysis was performed on a portion of the sample volume and the result was compared to the industrial groundwater MSC. Table 4.15 presents the results of the SPLP analysis. Beryllium was not detected in the SPLP analysis, and as a result, an alternative MSC of 1.1 mg/kg was provided for this analyte.

4.5.2.2 Organic Constituents

The following VOC was detected in the surface soil sample collected at SWMU 42:

- **Acetone** (0.015 mg/kg) was detected in the surface soil sample collected from boring BHGLSWMU42002. This detection of acetone was only slightly above the MQL of 0.005 mg/kg and well below the MSC of 1000 mg/kg.

4.5.3 Subsurface Soil Detections

A total of 12 subsurface soil samples were collected for analysis at the four soil borings advanced at SWMU 42 (Figure 4.8). All subsurface soil samples were analyzed for the list of analyses presented in Section 3.2.6.3. As presented in Table 4.10 and depicted in Figure 4.8, analytical results of subsurface soil samples indicate the presence of one metal and two organic constituents above background.

4.5.3.1 Inorganic Constituents

The following metal was detected in the subsurface soil samples collected at SWMU 42:

- **Cobalt** (6.7 mg/kg) was detected in the subsurface soil sample collected from the 15-foot interval of boring BHGLSWMU42004. This detection of cobalt was only slightly above background (6.19 mg/kg) and well below MSC (610 mg/kg).

4.5.3.2 Organic Constituents

The following organic constituents were detected in the subsurface soil samples collected at SWMU 42:

- **Acetone** (0.008 mg/kg) was detected in the subsurface soil sample collected from the 5-foot interval of boring BHGLSWMU42001. This detection of acetone was only slightly above the MQL (0.005 mg/kg) and well below MSC (1,000 mg/kg).

- **Ethylene glycol** (6.38 mg/kg) was detected in the subsurface soil sample collected from the 10-foot interval of boring BHGLSWMU42004. This detection of ethylene glycol was only slightly above the MQL (6.0 mg/kg) and well below the MSC (20,000 mg/kg).

4.6 AOC 6

4.6.1 Lithologic Findings

Four soil borings, BHGLAOC006001, BHGLAOC006002, BHGLAOC006003, and BHGLAOC6004, were advanced within the boundaries of AOC 6. Boring BHGLAOC006004 was located adjacent to a surface drain leading to SWMU 64, the French Underdrain System (Figure 4.10). Boring logs are presented in Appendix D.

Surface soils at AOC 6 are primarily composed of sand and coarse gravel fill to a depth of 1 foot bgs. A layer of surface asphalt was found at boring BHGLAOC006004 above the coarse sand and gravel layer. Boring BHGLAOC006004 also exhibited strong solvent/fuel odors from a depth of 3 feet bgs to the boring termination at 14 feet bgs.

Lithology was analyzed on west-east transect along borings BHGLAOC006004, BHGLAOC006002, BHGLAOC006001 and BHGLAOC006003. A lithologic cross section of AOC 6 is presented in Figure 4.9. Soil boring BHGLAOC6004 reveals approximately 2 feet of surficial asphalt and fill with native soils composed of gravely sandy silt to 8 feet bgs and a sandy gravel to 14 feet bgs. At boring BHGLAOC6001, soils are composed of brown clayey silt from the surface to 4 feet bgs grading into sandy silt to a depth of 6 feet bgs with silty sand to a depth of 8 feet bgs, and sandy gravel to a depth of 12 feet bgs. This stratification continues to BHGLAOC6003 in the east. Boring BHGLAOC6002, located north of BHGLAOC6001 also exhibits a similar stratification.

Groundwater flow direction in the vicinity of AOC 6 trends generally to the east and southeast towards Farmers Branch Creek and the West Fork Trinity River. Groundwater was encountered at approximately 10 feet bgs across the site.

4.6.2 Surface Soil Detections

A total of four surface soil samples were collected for analysis at AOC 6: BHGLAOC006001, BHGLAOC006002, BHGLAOC006003, and BHGLAOC006004. Soil sampling locations are depicted in Figure 4.10. All surface soil samples were analyzed for the list of analyses presented in Section 3.2.7.3. As presented in Table 4.11 and depicted in Figure 4.10, analytical results of surface soil samples indicate no detections of any constituents above background or MQL.

4.6.3 Subsurface Soil Detections

A total of four subsurface soil sample were collected for analysis at four soil borings within AOC 6 (Figure 4.10). All subsurface soil samples were collected from the 5-foot intervals of each boring, and analyzed for the list of analyses presented in Section 3.2.7.3. As presented in Table 4.12 and depicted in Figure 4.10, analytical results of subsurface soil sample indicate one inorganic and two organic constituents detected above background.

4.6.3.1 Inorganic Constituents

The following metal was detected in the subsurface soil samples collected at AOC 6:

- **Barium** (129 mg/kg) was detected in the subsurface soil sample collected from the 5-foot interval of boring BHGLAOC006001. A slightly higher concentration of barium (139 mg/kg) was detected in the associated duplicate sample collected from the same interval. Both of these concentrations of barium slightly exceed the background level of 128.1 mg/kg, but are well below the MSC of 200 mg/kg.

4.6.3.2 Organic Constituents

The following organic constituents were detected in the subsurface soil samples collected at AOC 6:

- **2-Hexanone** (0.024 mg/kg) was detected in the subsurface soil sample collected from the 5-foot interval of boring BHGLAOC006004. This detection of 2-hexanone was only slightly above the MQL of 0.005 mg/kg and well below the MSC of 57.6 mg/kg.

- **Ethylene glycol** (22.86 mg/kg) was detected in the subsurface soil sample collected from the 5-foot interval of boring BHGLAOC006001. This concentration of ethylene glycol exceeded the MQL of 6 mg/kg, but was well below the MSC of 20,000 mg/kg.

4.7 AOC 15

4.7.1 Lithologic Findings

It should be noted that AOC 15 is located within the boundaries of the SWMU 51 WAA. Two borings associated with SWMU 51, BHGLSWMU51003 and BHGLSWMU51004 were analyzed to determine the lithology associated with AOC 15. Soil boring BHGLAOC15001 was located adjacent to AOC 15 (Figure 4.12).

Lithology was analyzed along a north-south transect along borings BHGLAOC15001, BHGLSWMU51004, and BHGLSWMU51003. A lithological cross section of the site is presented as Figure 4.11. Lithology at boring BHGLAOC15001 reveals poorly sorted gravelly clayey silt from the surface to 6 feet bgs overlying sandy silt with increasing gravel to 14 feet bgs with sandy silty gravel between 14 and 17 feet bgs. At BHGLSWMU51004, 1 foot of concrete and fill overlays clayey silt to 4 feet bgs. A clayey silt, sand, and gravel extends from 4 to 6 feet overlying a sandy silt to 10 feet bgs. Sandy silt, clay and gravel from 10 to 20 feet bgs overlies a very dry clay to 24 feet bgs. This stratification continues to BHGLSWMU51003 in the west.

Groundwater was sporadically encountered in the area of AOC 15 and SWMU 51. Groundwater was encountered between 5 and 8 feet bgs in the western and central portions of SWMU 51. No groundwater was encountered in the eastern portion of the site including the location of boring BHGLAOC15001. Groundwater flow direction across the site trends generally to the southeast towards the West Fork Trinity River.

4.7.2 Surface Soil Detections

One surface soil sample was collected for analysis at AOC 15: BHGLAOC15001. The soil sampling location is depicted in Figure 4.12. This surface soil sample was analyzed for the full suite of Appendix IX analyses presented in Section 3.2.8.3. As presented in Table 4.13 and depicted in Figure 4.12, analytical results of surface soil samples indicates concentrations of several SVOCs, one metal, and sulfide above background.

4.7.2.1 Inorganic Constituents

The following inorganic constituents were detected in the surface soil sample collected at AOC 15:

- **Nickel** (15 mg/kg) was detected in the surface soil sample collected from boring BHGLAOC15001. This detection of nickel was only slightly above background (14.6 mg/kg) and well below the MSC (200 mg/kg).

- **Sulfide** (115 mg/kg) was detected in the surface soil sample collected from boring BHGLAOC15001. This detection was above the background level for sulfide of 25 mg/kg, and no MSC is available for this compound.

4.7.2.2 Organic Constituents

The following SVOCs were detected in the surface soil sample collected at AOC 15:

- **Benzo[*a*]anthracene** (1.5 mg/kg), **benzo[*a*]pyrene** (1.3 mg/kg), **benzo[*b*]fluoranthene** (1.8 mg/kg), **benzo[*k*]fluoranthene** (0.89), and **indeno[1,2,3-*c,d*]pyrene** (0.77 mg/kg) were detected in the surface soil sample collected from boring BHGLAOC15001. The concentrations of these results are slightly above both the MQL of 0.33 mg/kg and the MSC for each compound.

- **Anthracene** (0.57 mg/kg), **benzo[*g,h,i*]perylene** (0.58 mg/kg), **chrysene** (1.6 mg/kg), **fluoranthene** (3.5 mg/kg), **phenanthrene** (3.2 mg/kg), and **pyrene** (4.4 mg/kg) were also detected in the surface soil sample collected from boring BHGLAOC15001. However, the concentrations of these analytes were detected above the MQL of 0.33 mg/kg but below the MSC for each compound.

4.7.3 Subsurface Soil Detections

A total of four subsurface soil samples were collected for analysis at the soil boring advanced at AOC 15 (Figure 4.12). Subsurface soil samples were collected from 5-foot intervals to the top of the water table. All subsurface soil samples were analyzed for the full suite of Appendix IX analyses presented in Section 3.2.8.3. As presented in Table 4.14 and depicted in Figure 4.12, analytical results of subsurface soil sample indicate concentrations of sulfide above MQLs. No other Appendix IX constituents were detected above background or MQLs in the subsurface soil samples collected at AOC 15.

4.7.3.1 Inorganic Constituents

The following inorganic constituent was detected in the subsurface soil samples collected at AOC 15:

- **Sulfide** was detected in the subsurface soil samples collected from boring BHGLAOC006001 at the 5-, 10-, 15-, and 20-foot intervals at concentrations ranging from 75.6 mg/kg to 108 mg/kg. These concentrations of sulfide exceed the background level of 25 mg/kg. No MSC has been determined for this compound.

TABLES

Table 4.1
Surface Soil Detections
SWMU 16
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU1601-00'	BHGLSWMU1602-00'	BHGLSWMU1603-00'	BHGLSWMU1604-00'
ARSENIC	5.85	5 85	4 1	4.8	4 8J	4 4J
BARIUM	233	233	66.4	73 8	75.3	92 2
BERYLLIUM	1.02	1.02	0 67	0.49	0.75	0.89
CADMIUM	0.556	0 556	0.22F	0.35F	0.08F	0.21F
CHROMIUM, TOTAL	25.86	25 86	15.5	12 9	12.9J	16.2J
COBALT	11.05	610	4.3F	4F	3 8F	6.2
COPPER	17.37	130	7.7	8.7F	7.1F	10.5
LEAD	30.97	30.97	17 9	17.8	9.5J	17.4J
NICKEL	14.6	200	10 5	8.8F	10 5	12.1
VANADIUM	46.3	72	32.9	23.9F	23.8F	29.1
ZINC	38 8	3100	27.5	30.2	20.8F	27.8
ACETONE	0.005	1000	--	--	**(0.021)**	--
ETHYLBENZENE	0 003	70	0.002F	--	--	--
M & P XYLENE (SUM OF ISOMERS)	0 007	1000	**(0.011)**	--	--	--
O-XYLENE (1,2-DIMETHYLBENZENE)	0 005	1000	**(0.007F)**	--	--	--
ACENAPHTHENE	0.33	610	--	0.18F	--	--
ANTHRACENE	0.33	3100	--	0.28F	--	--
BENZO(A)ANTHRACENE	0.33	0.33	--	**[(0.94)]**	--	0.071F
BENZO(A)PYRENE	0.33	0.33	--	**[(0.66)]**	--	0.077F
BENZO(B)FLUORANTHENE	0.33	0.33	--	**[(1.1)]**	--	0.12F
BENZO(G,H,I)PERYLENE	0.33	310	--	0.3F	--	0.05F
BENZO(K)FLUORANTHENE	0.33	0.39	--	**[(0.53)]**	--	0.047F
CHRYSENE	0.33	3 9	--	**(1.1)**	--	0.085F
DIBENZO(A,H)ANTHRACENE	0.33	0.33	--	0.085F	--	--
DIBENZOFURAN	0.33	41	--	0.19F	--	--
FLUORANTHENE	0.33	410	--	**(3.4)**	--	0 16F
FLUORENE	0.33	410	--	0.27F	--	--
INDENO(1,2,3-C,D)PYRENE	0.33	0.33	--	**[(0.44F)]**	--	0.062F
NAPHTHALENE	0.33	200	--	0.18F	--	--
PHENANTHRENE	0.33	310	--	**(2.8)**	--	0.066F
PYRENE	0 33	310	--	**(2)**	--	0.072F
pH	NV	NV	8	8	7.8	7.9

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC

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Table 4.2
Sub-Surface Soil Detections
SWMU 16
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU1601-7'	BHGLSWMU1602-8'	BHGLSWMU1603-5'	BHGLSWMU1604-5'
ANTIMONY	0.712	0.712	0.4F	--	--	--
ARSENIC	6.58	6.58	4.9	3.6	4F	6.2J
BARIUM	128.1	200	75.5	53.6	73.3	83.9
BERYLLIUM	1.13	1.13	0.62	0.59	0.57	0.76
CADMIUM	0.59	0.59	0.34F	0.19F	0.14F	0.34F
CHROMIUM, TOTAL	16.31	16.31	14.4	13	10.1J	13.1J
COBALT	6.19	610	4.1F	3.6F	3.5F	5 3F
COPPER	13.72	130	9.4	5.4F	6F	7.6F
LEAD	12.66	12.66	[**(19.1)**]	7.7	7.5J	9.9J
MERCURY	0 035	0.2	**(0.07)**	--	--	0.03F
NICKEL	19.76	200	10 5	8.8	8.5F	12
SILVER	0.128	51	--	--	--	--
TIN	10	6100	4.9F	--	--	--
VANADIUM	37.4	72	25 6	24.3	21 4F	26.7F
ZINC	31.3	3100	25.7	21.8	18 1F	22.8F
2-METHYLNAPHTHALENE	0.33	410	--	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--	--	--
M & P XYLENE (SUM OF ISOMERS)	0.007	1000	0.002F	--	--	--
NAPHTHALENE	0.33	200	--	--	--	--
PENTACHLOROPHENOL	1.7	1.7	--	--	--	--
pH	NV	NV	8.1	8 1	8.1	7.9

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC

641 131

Table 4.2
Sub-Surface Soil Detections
SWMU 16
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU1601-12'	BHGLSWMU1602-13'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-10'
ANTIMONY	0.712	0.712	--	--	--	--
ARSENIC	6.58	6.58	2.5F	3.2F	5J	4.1F
BARIUM	128 1	200	67.4	47.9	44.7	38 2F
BERYLLIUM	1.13	1.13	0.61	0.42	0.46	0.41
CADMIUM	0.59	0.59	0.11F	0.07F	0.16F	0.11F
CHROMIUM, TOTAL	16.31	16.31	11.4	7.7	9 5F	7.3F
COBALT	6.19	610	5.1	3.3F	2 6F	3.2F
COPPER	13.72	130	7.6F	4.4F	5.6F	4.7F
LEAD	12.66	12.66	9.3	5.4	7.1J	5.2J
MERCURY	0.035	0.2	--	--	--	--
NICKEL	19.76	200	10.1	6.6F	6.8F	6.4F
SILVER	0.128	51	--	--	--	--
TIN	10	6100	--	--	--	--
VANADIUM	37.4	72	21.6F	14.6F	21.4F	17.2F
ZINC	31.3	3100	23.1F	14.8F	16.1F	13.7F
2-METHYLNAPHTHALENE	0.33	410	--	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--	--	--
M & P XYLENE (SUM OF ISOMERS)	0 007	1000	--	--	--	--
NAPHTHALENE	0.33	200	--	--	--	--
PENTACHLOROPHENOL	1.7	1.7	--	--	--	--
pH	NV	NV	8.3	8 5	8.3	8 6

Notes:
All concentrations reported in mg/kg.
-- = Result not detected at or above MDL.
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below th
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC

641 132

Table 4.2
Sub-Surface Soil Detections
SWMU 16
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU1604-10'	BHGLSWMU1601-17' Duplicate	BHGLSWMU1601-17'	BHGLSWMU1602-20'
ANTIMONY	0.712	0.712	--	--	--	--
ARSENIC	6.58	6.58	3.9F	2F	2F	0.3F
BARIUM	128.1	200	42	40.9	45.8	93.1
BERYLLIUM	1.13	1.13	0.35	0.26	0.29	0.23
CADMIUM	0.59	0.59	0.13F	0.14F	0.15F	0.15F
CHROMIUM, TOTAL	16.31	16.31	5F	5.6F	7.1	7.2F
COBALT	6.19	610	3.4F	1.7F	1.7F	1.6F
COPPER	13.72	130	5F	2.8F	6.8F	1.8F
LEAD	12.66	12.66	5.4J	4.3	6.2	4.3
MERCURY	0.035	0.2	--	--	--	--
NICKEL	19.76	200	6.6F	3.1F	3.5F	3.1F
SILVER	0.128	51	--	--	**(0.29J)**	--
TIN	10	6100	--	--	4.6F	--
VANADIUM	37.4	72	19.7F	12F	11.6F	8.4F
ZINC	31.3	3100	11.2F	9.9F	20.5F	11.6F
2-METHYLNAPHTHALENE	0.33	410	0.16F	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	0.33	0.6	0.06F	--	--	--
M & P XYLENE (SUM OF ISOMERS)	0.007	1000	--	--	--	--
NAPHTHALENE	0.33	200	0.2F	**(1.2J)**	**(1.2J)**	--
PENTACHLOROPHENOL	1.7	1.7	--	0.35F	--	--
pH	NV	NV	8.5	8.1	8.1	8.5

Notes.
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below th
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1.
Results in bold and enclosed in [brackets] exceed MSC

641 133

Table 4.2
Sub-Surface Soil Detections
SWMU 16
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU1603-15'	BHGLSWMU1604-15'	BHGLSWMU1601-20'
ANTIMONY	0.712	0.712	--	--	--
ARSENIC	6.58	6.58	4.6J	--	1.6F
BARIUM	128.1	200	43.6	38.5	43.8
BERYLLIUM	1.13	1.13	0.45	0.17F	0.27
CADMIUM	0.59	0.59	0.12F	0.15F	0.09F
CHROMIUM, TOTAL	16.31	16.31	10.1J	4 8F	5 6F
COBALT	6.19	610	3.4F	0.62F	1.6F
COPPER	13.72	130	5.7F	1.8F	4.1F
LEAD	12.66	12.66	6.8J	4.4J	5.6
MERCURY	0.035	0.2	--	--	--
NICKEL	19.76	200	7.7F	2 1F	3.7F
SILVER	0.128	51	--	--	--
TIN	10	6100	--	--	--
VANADIUM	37.4	72	19.1F	4.8F	14.9F
ZINC	31.3	3100	14.9F	7.8F	12.2F
2-METHYLNAPHTHALENE	0.33	410	--	--	--
BIS(2-ETHYLHEXYL) PHTHALATE	0.33	0.6	0.11F	--	--
M & P XYLENE (SUM OF ISOMERS)	0.007	1000	--	--	--
NAPHTHALENE	0.33	200	--	--	--
PENTACHLOROPHENOL	1.7	1.7	--	--	--
pH	NV	NV	8.3	9.2	8.4

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below th
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC.

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Table 4.3
Surface Soil Detections
SWMU 33
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU33001-00'	BHGLSWMU33002-00'	BHGLSWMU33003-00'
ARSENIC	5.85	5.85	3.6	3.4	3F
BARIUM	233	233	56.8	44.5	85 8
BERYLLIUM	1.02	1.02	0.51J	0.35J	0 55J
CADMIUM	0 556	0.556	0.06F	0.5	0.11F
CHROMIUM, TOTAL	25 86	25 86	10.2	9.5	9.8
COBALT	11.05	610	3 6F	2.7F	3 6F
COPPER	17.37	130	6.7F	6.1F	6.6F
LEAD	30 97	30 97	13 1	14	11
NICKEL	14.6	200	6.4F	5.6F	6.7F
VANADIUM	46 3	72	22.3	17.7F	22
ZINC	38.8	3100	29.7	28	18 9F
MERCURY	0.14	0.2	0.02F	0 05	0.04
SELENIUM	0.907	5	0.14F	--	--
SILVER	0.213	51	**(0.66)**	--	--
METHYLENE CHLORIDE	0 002	0 5	**(0.004F)**	**(0.004F)**	**(0.004F)**
BENZO(A)ANTHRACENE	0.33	0.33	--	0.057F	--
BENZO(A)PYRENE	0.33	0 33	--	0.061F	--
BENZO(B)FLUORANTHENE	0.33	0.33	--	0.084F	--
BENZO(G,H,I)PERYLENE	0.33	310	--	0.048F	--
BENZO(K)FLUORANTHENE	0.33	0.39	--	0 036F	--
BENZL BUTYL PHTHALATE	0.33	2000	--	0.16F	--
CHRYSENE	0 33	3.9	--	0.066F	--
FLUORANTHENE	0.33	410	--	0.1F	--
INDENO(1,2,3-C,D)PYRENE	0.33	0.33	--	0.068F	--
PYRENE	0.33	310	--	0.095F	--
PETROLUEM HYDROCARBONS	58	500*	--	--	27.3F
PHC AS GASOLINE	58	100*	--	--	4.0F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	58	500*	--	--	23 4F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

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Table 4.4
Sub-Surface Soil Detections
SWMU 33
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU33001-5'	BHGLSWMU33002-5'	BHGLSWMU33002-5' Duplicate	BHGLSWMU33003-5'
ARSENIC	6 58	6.58	4 9	5.5	5.2J	4 8
BARIUM	128.1	200	52.8	71.4	71.4	82 2
BERYLLIUM	1.13	1.13	.54J	0.97	0.97	1.1
CHROMIUM, TOTAL	16.31	16.31	15 7	**[(17)]**	**[(17)]**	15.7
COBALT	6 19	610	4.5F	4.1	3.4F	2.7F
COPPER	13.72	130	8.3F	7 5	7.3F	7.3F
LEAD	12.66	12.66	8.6	7 6	**[(22.5)]**	7.9
MERCURY	0.035	0.2	--	--	0.03F	--
NICKEL	19.76	200	7.1F	12.6	12 6	11 8
SELENIUM	0.313	5	0.15F	--	--	--
VANADIUM	37.4	72	34.4	34.9	33.6	32.2
ZINC	31.3	3100	16.9F	22.6	22.6F	21.1F
INDENO (1,2,3-C,D) PYRENE	0.33	0.33	--	--	--	--
METHYLENE CHLORIDE	0.002	0.5	**(0.004F)**	--	--	**(0.004F)**
PETROLEUM HYDROCARBONS	58	500*	--	--	--	34.3F
PHC AS GASOLINE	58	100*	--	--	--	4 2F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#	58	500*	--	--	--	30.0F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

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Table 4.4
Sub-Surface Soil Detections
SWMU 33
NAS Fort Worth JRB, Texas

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Analyte	RRS-1	MSC	BHGLSWMU33001-10'	BHGLSWMU33002-10'	BHGLSWMU33003-10'	BHGLSWMU33001-15'
ARSENIC	6.58	6 58	3.7F	2.8F	5.2J	1.7F
BARIUM	128.1	200	56.3	40.4	57.6	24F
BERYLLIUM	1.13	1.13	0.54J	0.59J	0.73	0 25J
CHROMIUM, TOTAL	16.31	16.31	12.9	8.5	10.7	5F
COBALT	6.19	610	4F	3.8F	5.2F	2.2F
COPPER	13 72	130	7.1F	6.7	9.3	4 5F
LEAD	12 66	12 66	7	7	**[(15.7)]**	4 1
MERCURY	0.035	0.2	--	0.02F	--	--
NICKEL	19.76	200	9	8 7	13	5.4F
SELENIUM	0.313	5	--	--	--	--
VANADIUM	37.4	72	24	17.6F	26.6	10.4F
ZINC	31.3	3100	15.7F	16 6F	20.3F	10.7F
INDENO (1,2,3-C,D) PYRENE	0.33	0.33	--	0 049F	--	--
METHYLENE CHLORIDE	0.002	0 5	**(0.003F)**	**(0.004F)**	--	**(0.004F)**
PETROLEUM HYDROCARBONS	58	500*	--	30.9F	--	--
PHC AS GASOLINE	58	100*	--	4.3F	--	--
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#	58	500*	--	26 6F	--	--

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

Table 4.4
Sub-Surface Soil Detections
SWMU 33
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU33002-15'	BHGLSWMU33003-15'
ARSENIC	6 58	6.58	0 65F	1.3F
BARIUM	128 1	200	12.1F	13.5F
BERYLLIUM	1 13	1.13	0 13F	0 09F
CHROMIUM, TOTAL	16.31	16.31	3.9F	4.2F
COBALT	6.19	610	1.1F	2.7F
COPPER	13.72	130	2.5F	3.7F
LEAD	12.66	12.66	3.3	4.5F
MERCURY	0.035	0.2	--	--
NICKEL	19.76	200	3 3F	4.1F
SELENIUM	0.313	5	--	--
VANADIUM	37.4	72	6.5F	8F
ZINC	31.3	3100	6.9F	10.2F
INDENO (1,2,3-C,D) PYRENE	0.33	0 33	--	--
METHYLENE CHLORIDE	0.002	0.5	**(0.004F)**	--
PETROLEUM HYDROCARBONS	58	500*	23.4F	--
PHC AS GASOLINE	58	100*	3.6F	--
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#	58	500*	19.8F	--

Notes
All concentrations reported in mg/kg.
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

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Table 4.5
Surface Soil Detections
SWMU 34
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU3401-00'	BHGLSWMU3402-00'
ARSENIC	5.85	5 85	3.5F	3 6F
BARIUM	233	233	85	85 8
BERYLLIUM	1 02	1.02	0 88	0.78
CADMIUM	0 556	0 556	0 06F	0 07F
CHROMIUM, TOTAL	25 86	25 86	11.6J	11 9J
COBALT	11 05	610	4 9F	5 3F
COPPER	17 37	130	8.3F	8 8F
LEAD	30 97	30 97	11 1J	12 8J
NICKEL	14 6	200	10 5	9 4
SELENIUM	0.907	5	0 18F	0 25F
THALLIUM	2.43	2 43	--	0 2F
VANADIUM	46 3	72	27 6F	29
ZINC	38 8	3100	16 1F	17 1F
BENZENE	0.002	0 5	--	0 002
ETHYLBENZENE	0 003	70	--	**(0.004)**
BENZO(A)PYRENE	0 33	0 33	0.043F	--
BENZO(B)FLUORANTHENE	0 33	0.33	0 086F	--
BENZO(G,H,I)PERYLENE	0.33	310	0.05F	--
BENZOIC ACID	1 7	41000	0.43F	--
CHRYSENE	0 33	3 9	0 076F	--
FLUORANTHENE	0 33	410	0 07F	--
INDENO(1,2,3-C,D)PYRENE	0.33	0.33	0 055F	--

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC

641 139

Table 4.6
Sub-Surface Soil Detections
SWMU 34
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU3401-5'	BHGLSWMU3401-5' Duplicate	BHGLSWMU3402-5'	BHGLSWMU3401-10'
ARSENIC	6.58	6.58	2 7F	3.7F	5.3J	4.3F
BARIUM	128.1	200	74.4	57.2	45.9	27.3F
BERYLLIUM	1.13	1.13	0.43	0.36	0 38	0.34
CADMIUM	0.59	0.59	0.11F	0 14F	0.06F	0.14F
CHROMIUM, TOTAL	16.31	16.31	7.8F	5.9F	8.1F	8.4F
COBALT	6.19	610	2.8F	3.2F	3.2F	2.4F
COPPER	13.72	130	3.4F	2.8F	5.4F	3.6F
LEAD	12.66	12 66	8J	6.3J	7.2J	4.4J
NICKEL	19.76	200	5.1F	4.9F	7F	4 8F
VANADIUM	37.4	72	21.2F	30 6	21.9F	10 1F
ZINC	31.3	3100	12.4F	10 6F	16.1F	9.4F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation

Results in bold and enclosed in (parentheses) exceed RRS-1

Results in bold and enclosed in [brackets] exceed MSC

011 140

Table 4.7
Surface Soil Detections
SWMU 39
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU39001-00'
ARSENIC	5.85	5.85	1.5F
BARIUM	233	233	37.7
BERYLLIUM	1.02	1.02	0.16F
CHROMIUM, TOTAL	25.86	25.86	8.2
COBALT	11.05	610	3.2F
COPPER	17.37	130	4.4F
LEAD	30 97	30.97	7.6
NICKEL	14.6	200	3.9F
VANADIUM	46 3	72	10 5F
ZINC	38.8	3100	7.7F
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0.6	0.053F

Notes.
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation

Results in bold and enclosed in (parentheses) exceed RRS-1

Results in bold and enclosed in [brackets] exceed MSC

641 141

Table 4.8
Sub-Surface Soil Detections
SWMU 39
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU39001-5'
ARSENIC	6.58	6.58	6J
BARIUM	128.1	200	57.2
BERYLLIUM	1 13	1.13	0 8
CHROMIUM, TOTAL	16 31	16.31	12.6
COBALT	6.19	610	4 9F
COPPER	13.72	130	6.7F
LEAD	12 66	12 66	**[(15.4)]**
NICKEL	19.76	200	10.3
VANADIUM	37 4	72	27.6
ZINC	31.3	3100	22.3F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC

641 142

Table 4.9
Surface Soil Detections
SWMU 42
NAS Fort Worth JRB, Texas

641 143

Analyte	RRS-1	MSC	BHGLSWMU42001-00'	BHGLSWMU42002-00'	BHGLSWMU42003-00'	BHGLSWMU42004-00'
ANTIMONY	0.56	0.6	0.43F	0 37F	0.31F	0 39F
ARSENIC	5.85	5.85	2 3F	2.8F	3.8J	3.1F
BARIUM	233	233	73.8J	65.9J	56.7J	107J
BERYLLIUM	1.02	1.02	0.84	0 82	0.83	**[(1.1)]**
CHROMIUM, TOTAL	25.86	25.86	10.4	14.3	15 1	13.4
COBALT	11.05	610	4.4	4.7	5.1	6 8
COPPER	17.37	130	6 5F	9.4	8.9	7.7
LEAD	30.97	30.97	10 4	13.5	9.6	11.3
MERCURY	0.035	0.2	**(0.2F)**	--	--	--
NICKEL	14.6	200	8.1	8.8	9 5	10.1
THALLIUM	2.43	2.43	0.19F	0.24F	0.23F	0 24F
VANADIUM	46 3	72	19.7F	23.2	27.3	22 9
ZINC	38.8	3100	14F	19.6F	20 9F	17.6F
ACETONE	0 005	1000	--	**(0.015)**	--	--
BENZOIC ACID	1.7	41000	--	0.47F	--	--
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0 6	--	0.045F	0.057F	--
PETROLEUM HYDROCARBONS	60	500*	33.1F	22.7F	14.5F	6 5F
PHC AS GASOLINE	60	100*	4.2F	3.7F	3.8F	3.2F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	60	500*	28.9F	19 0F	10.7F	3.2F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1.
Results in bold and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

Table 4.10
Sub-Surface Soil Detections
SWMU 42
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU42001-5'	BHGLSWMU42002-5'	BHGLSWMU42003-5'	BHGLSWMU42004-5'
ANTIMONY	712	712	0.4F	0.32F	0.51F	0.71F
ARSENIC	6.58	6.58	3.7F	3F	3.8J	2.2F
BARIUM	128.1	200	37.4J	26 7F	46 4J	74.9J
BERYLLIUM	1.13	1.13	0.59	1 1	1.1	1
CADMIUM	0.59	0.59	0.08F	--	--	--
CHROMIUM, TOTAL	16.31	16 31	7.9	12 8	13 4	12.2
COBALT	6.19	610	4.2F	4 8	5 7	5.1
COPPER	13.72	130	5.3F	7F	8.5	7 1F
LEAD	12.66	12 66	7.1	8.5	11.1	8.2
NICKEL	19 76	200	8.6	13.6	13.9	13.8
THALLIUM	1.5	1.5	--	0.27F	0.23F	0.18F
VANADIUM	37 4	72	19.1F	19.6F	26.7	18.6F
ZINC	31.3	3100	14.5F	22 7	21.6F	19 3F
ACETONE	0.005	1000	**(0.008)**	--	--	--
BENZOIC ACID	1.7	41000	--	--	--	--
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--	--	--
ETHYLENE GLYCOL	6	20000	--	--	--	--
PETROLEUM HYDROCARBONS	59	500*	33.1F	21.1F	7.7F	--
PHC AS GASOLINE	59	100*	4.2F	--	4.4F	--
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	59	500*	28.9F	21.1F	3 3F	--

Notes:
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

611 144

641 145

Table 4.10
Sub-Surface Soil Detections
SWMU 42
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU42001-10'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate	BHGLSWMU42003-10'
ANTIMONY	712	712	0.32F	0.69F	0.58F	0.33F
ARSENIC	6.58	6.58	4.3	6.1	4.1J	3.2F
BARIUM	128.1	200	46.9J	21.9F	27 1F	40.5J
BERYLLIUM	1 13	1.13	0.72	0.43J	0.34J	0.58
CADMIUM	0.59	0.59	--	0.05F	0.04F	0.04F
CHROMIUM, TOTAL	16.31	16 31	11.6	8	8 3	12 2
COBALT	6.19	610	5 9	4.2	4.6	3.8F
COPPER	13.72	130	8.8	8.5	6.1F	6.4F
LEAD	12.66	12 66	7.6	6.2	5 4	7.5
NICKEL	19.76	200	11 3	11.3	10.4	9.6
THALLIUM	1.5	1.5	--	--	--	--
VANADIUM	37.4	72	23.7	25.2	19.1F	23.3
ZINC	31.3	3100	24.1	17.5F	16.3F	22.8
ACETONE	0.005	1000	--	--	--	--
BENZOIC ACID	1.7	41000	--	0.42F	0.41F	--
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--	--	0 05F
ETHYLENE GLYCOL	6	20000	--	--	--	--
PETROLEUM HYDROCARBONS	59	500*	28.8F	10.9F	7.5F	9.1F
PHC AS GASOLINE	59	100*	3 7F	4.2F	4.0F	3.9F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	59	500*	25.1F	6.7F	3.6F	5.2F

Notes:
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted m
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

Table 4.10
Sub-Surface Soil Detections
SWMU 42
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU42004-10'	BHGLSWMU42001-15'	BHGLSWMU42002-15'	BHGLSWMU42003-15'
ANTIMONY	712	712	0 57F	0.28F	--	0.64F
ARSENIC	6.58	6.58	4.1J	1.2F	2.7F	3 3F
BARIUM	128.1	200	38J	11.7F	6.6F	11.4
BERYLLIUM	1.13	1.13	0.53	0.22J	0 14F	0.13F
CADMIUM	0.59	0.59	0.07F	--	--	--
CHROMIUM, TOTAL	16 31	16.31	10.7	5F	3.8F	4.3F
COBALT	6.19	610	3.6F	1 7F	2.1F	2.4F
COPPER	13.72	130	7.4	3.2F	3.6F	5F
LEAD	12.66	12.66	5.9	3.2	3.1	3 9
NICKEL	19.76	200	9.4	4.9F	4.4F	4.8F
THALLIUM	1.5	1.5	--	--	--	--
VANADIUM	37.4	72	22 8	7.8F	10.3F	11.8F
ZINC	31.3	3100	18.9F	11.7F	7.8F	9.9F
ACETONE	0.005	1000	--	--	--	--
BENZOIC ACID	1.7	41000	--	0.42F	0 39F	--
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--	--	--
ETHYLENE GLYCOL	6	20000	**(6.4)**	--	--	--
PETROLEUM HYDROCARBONS	59	500*	--	25.1F	7.1F	3.9F
PHC AS GASOLINE	59	100*	--	4 1F	3.0F	3.9F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	59	500*	--	21F	4 1F	--

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL.
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted m
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1
Results in bold and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

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Table 4.10
Sub-Surface Soil Detections
SWMU 42
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-15'
ANTIMONY	712	712	--	0.53F
ARSENIC	6.58	6.58	2.7F	4.1J
BARIUM	128.1	200	15.4F	38.8J
BERYLLIUM	1.13	1.13	0.2F	0.46J
CADMIUM	0.59	0.59	--	--
CHROMIUM, TOTAL	16.31	16.31	4.7F	8.8
COBALT	6.19	610	1 9F	**(6.7)**
COPPER	13.72	130	4.3F	8.9
LEAD	12.66	12.66	4	6.6
NICKEL	19.76	200	4.8F	11.2
THALLIUM	1.5	1.5	--	--
VANADIUM	37.4	72	11.5F	19.7F
ZINC	31.3	3100	10.4F	22 5
ACETONE	0.005	1000	--	--
BENZOIC ACID	1.7	41000	--	--
BIS (2-ETHYLHEXYL) PHTHALATE	0.33	0.6	--	--
ETHYLENE GLYCOL	6	20000	--	--
PETROLEUM HYDROCARBONS	59	500*	3.9F	--
PHC AS GASOLINE	59	100*	3 9F	--
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	59	500*	--	--

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted m
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

641 147

Table 4.11
Surface Soil Detections
AOC 6
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLAOC006001-00'	BHGLAOC006002-00'	BHGLAOC006003-00'	BHGLAOC006004-00'
ARSENIC	5.85	5.85	2.4F	2.7F	1.7F	2.7F
BARIUM	233	233	76.1	77.7	44.4	62.3
BERYLLIUM	1.02	1.02	0.82	0.85	0.56	0.41
CADMIUM	0.556	0.556	0.16F	0.16F	0.15F	0.13F
CHROMIUM, TOTAL	25.86	25.86	13.7	15.8	9.3	7 3F
COBALT	11.05	610	4.6F	5	3.5F	2.5F
COPPER	17.37	130	9.7	9.8	7.6F	4.7F
LEAD	30.97	30 97	8.3J	8.8J	6.9J	6 4J
NICKEL	14.6	200	9.1	9.5	6.3F	5.3F
SELENIUM	0.907	5	0.18F	--	0.12F	0.16F
VANADIUM	46.3	72	22.7F	25.8	14.4F	15.4F
ZINC	38.8	3100	26 8	30.7	20.4F	16.4F
TETRACHLOROETHYLENE (PCE)	0.005	0.5	--	--	0.002F	--
BENZYL BUTYL PHTHALATE	0.33	2000	--	--	--	0.31F
PETROLEUM HYDROCARBONS	60	500*	57.0F	44.5F	3.0F	18.4F
PHC AS GASOLINE	60	100*	3.1F	2.9F	3.0F	14.0F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	60	500*	53.9F	41.5F	--	5.0F

Notes.
All concentrations reported in mg/kg.
-- = Result not detected at or above MDL.
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in bold and enclosed in (parentheses) exceed RRS-1.
Results in bold and enclosed in [brackets] exceed MSC.
PHC = Petroleum Hydrocarbons

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Table 4.12
Sub-Surface Soil Detections
AOC 6
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLAOC006001-5'	BHGLAOC006001-5' Duplicate	BHGLAOC006002-5'	BHGLAOC006003-5'	BHGLAOC006004-5'
ARSENIC	6 58	6 58	1 8F	3 8F	1 2F	3 3F	3.1F
BARIUM	128 1	200	**(129)**	**(139)**	110	86 4	75 3
BERYLLIUM	1 13	1.13	0.47	0 5	0 33	0.34	0 48
CADMIUM	0.59	0 59	0 24F	0.36F	0.16F	0 2F	0 17F
CHROMIUM, TOTAL	16.31	16 31	10.4	11 2	6.1F	8 6	10 8
COBALT	6 19	610	2 6F	3 2F	1 6F	3.6F	3 1F
COPPER	13 72	130	5 3F	6 1F	3 1F	3 9F	5 6F
LEAD	12 66	12 66	5.4J	5.4J	4.1J	4 3J	8.5J
NICKEL	19.76	200	6F	7F	3 9F	6 8F	6 9F
VANADIUM	37 4	72	15 5F	23 2F	9 9F	18 5F	21 3F
ZINC	31 3	3100	24 8	24 3F	11 3F	14 5F	21 3F
2-HEXANONE	0 005	57 6	--	--	--	--	**(0.024)**
ETHYLENE GLYCOL	6	20000	**(22.86)**	--	--	--	--
PETROLEUM HYDROCARBONS	59	500*	44 4F	31 1F	16 9F	2 8F	6 7F
PHC AS GASOLINE	59	100*	3 2F	2.9F	3 1F	2 8F	3.0F
PHC AS HEAVY/RESIDUAL FUEL OILS #4,#5,#6	59	500*	41 3F	28 2F	13 8F	--	3 8F

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC
PHC = Petroleum Hydrocarbons

Table 4.13
Surface Soil Detections
AOC 15
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLAOC01501-00'
ARSENIC	5 85	5 85	4.2F
BARIUM	233	233	126
BERYLLIUM	1 02	1 02	0 98
CADMIUM	0.556	0 556	--
CHROMIUM, TOTAL	25.86	25 86	14 4
COBALT	11 05	610	6 8
COPPER	17 37	130	7.4F
LEAD	30 97	30 97	11
NICKEL	14 6	200	**(15)**
TIN	10	6100	1 8F
VANADIUM	46 3	72	29.7
ZINC	38.8	3100	21 7F
ACENAPHTHENE	0 33	610	0.3F
ANTHRACENE	0 33	3100	**(0.57)**
BENZO(A)ANTHRACENE	0.33	0 33	**[(1.5)]**
BENZO(A)PYRENE	0.33	0 33	**[(1.3)]**
BENZO(B)FLUORANTHENE	0 33	0 33	**[(1.8)]**
BENZO(G,H,I)PERYLENE	0 33	310	**(0.58)**
BENZO(K)FLUORANTHENE	0 33	0 39	**[(0.89)]**
CHRYSENE	0.33	3 9	**(1.6)**
DIBENZO(A,H)ANTHRACENE	0.33	0 33	0 16F
DIBENZOFURAN	0 33	41	0 18F
FLUORANTHENE	0 33	410	**(3.5)**
FLUORENE	0 33	410	0.31F
INDENO(1,2,3-C,D)PYRENE	0.33	0 33	**[(0.77)]**
NAPHTHALENE	0 33	200	0 041F
PHENANTHRENE	0.33	310	**(3.2)**
PYRENE	0.33	310	**(4.4)**
SULFIDE	25	NV	**(115)**

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC

641 150

Table 4.14
Sub-Surface Soil Detections
AOC 15
NAS Fort Worth JRB, Texas

Analyte	RRS-1	MSC	BHGLAOC01501-5'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
ARSENIC	6.58	6.58	4 6F	2 7F	3.1F	2.6F
BARIUM	128.1	200	79.6	52.2	45.3	56 3
BERYLLIUM	1.13	1 13	0 56	0.39	0.3J	0.16F
CADMIUM	0 59	0.59	--	--	--	--
CHROMIUM, TOTAL	16.31	16.31	11.1	11	8.1F	5.3F
COBALT	6.19	610	4.5F	2.8F	3.1F	2 8F
COPPER	13.72	130	6.8F	5.5F	3.1F	2.4F
LEAD	12.66	12.66	10.3	8.3	4.8	4 1
NICKEL	19.76	200	8.9F	6.3F	6.4F	4.6F
TIN	10	6100	1.5F	1.5F	--	1 2F
VANADIUM	37.4	72	27.2F	17.8F	15.1F	11.2F
ZINC	31.3	3100	20.5F	16F	13.6F	9 8F
PCB-1260 (AROCHLOR 1260)	0 05	0.05	--	--	--	0.015F
ZINOPHOS	0.073	NV	--	--	--	0.021F
FLORANTHENE	0.33	410	--	0.04F	--	--
SULFIDE	25	NV	**(75.6)**	**(108)**	**(85.8)**	**(107)**

Notes
All concentrations reported in mg/kg
-- = Result not detected at or above MDL
* = TNRCC action level for coarse-grained soils (TNRCC RG-17)
F= The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit (MQL)
J = The analyte was positively identified, the quantitation limit is an estimation
Results in **bold** and enclosed in (parentheses) exceed RRS-1
Results in **bold** and enclosed in [brackets] exceed MSC.

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Table 4.15
1999 SPLP Results
NAS Fort Worth JRB, Texas

Soil Boring	Sample Depth	Analyte	Result (mg/L)	MSC (mg/L)
BHGLSWMU16001-02	7'	Lead, SPLP	0.010 u	0.0150
BHGLSWMU33002-02	5'	Chromium, SPLP	0.010 u	0.1000
BHGLSWMU33002-02	5'	Lead, SPLP	0.010 u	0 0150
BHGLSWMU39001-02	5'	Lead, SPLP	**[0.0397]**	0.0150
BHGLSWMU42004-01	0'	Beryllium, SPLP	0.0040	0 0040

Notes

u = Sample concentration not detected above method quantitation limit (MQL)

MSC = Medium-specific concentration for industrial groundwater

Concentrations reported in bold and in [brackets] exceed MSC

641 152

641 15.

FIGURES

Figure 4.1

SWMU 16 Cross Secti n

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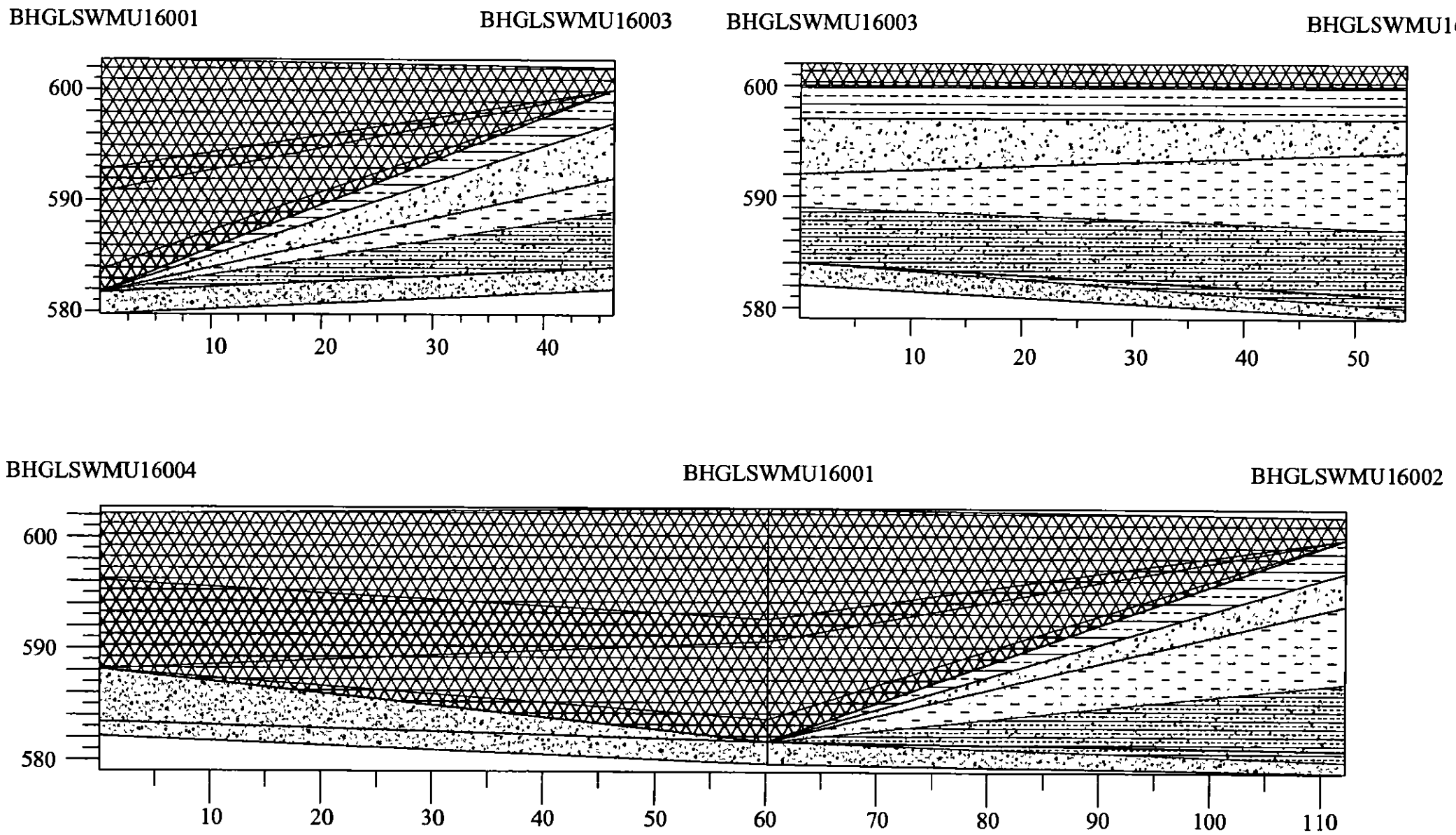
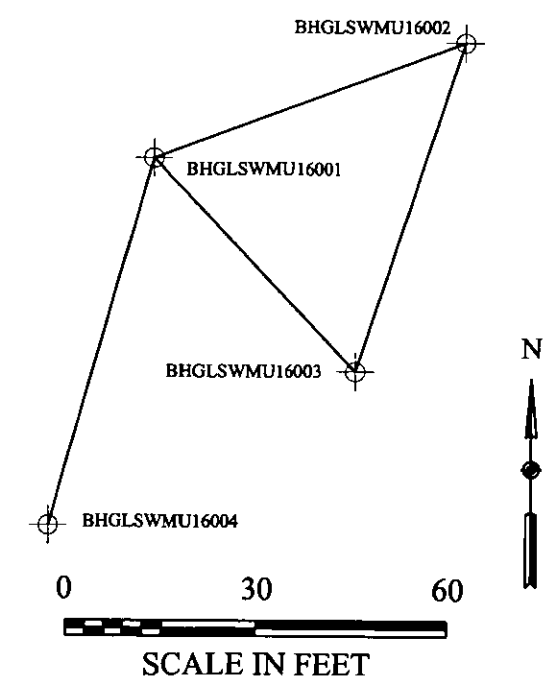


Legend

- Soilfill
- Landfill
- Clayey Silt
- Silty Sand & Gravel
- Sandy Silt & Clay
- Sandy Silt Clay & Gravel
- Sand & Gravel
- Groundwater elevation encountered during drilling



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Project AFC001-15
Revised 07/06/00 jb

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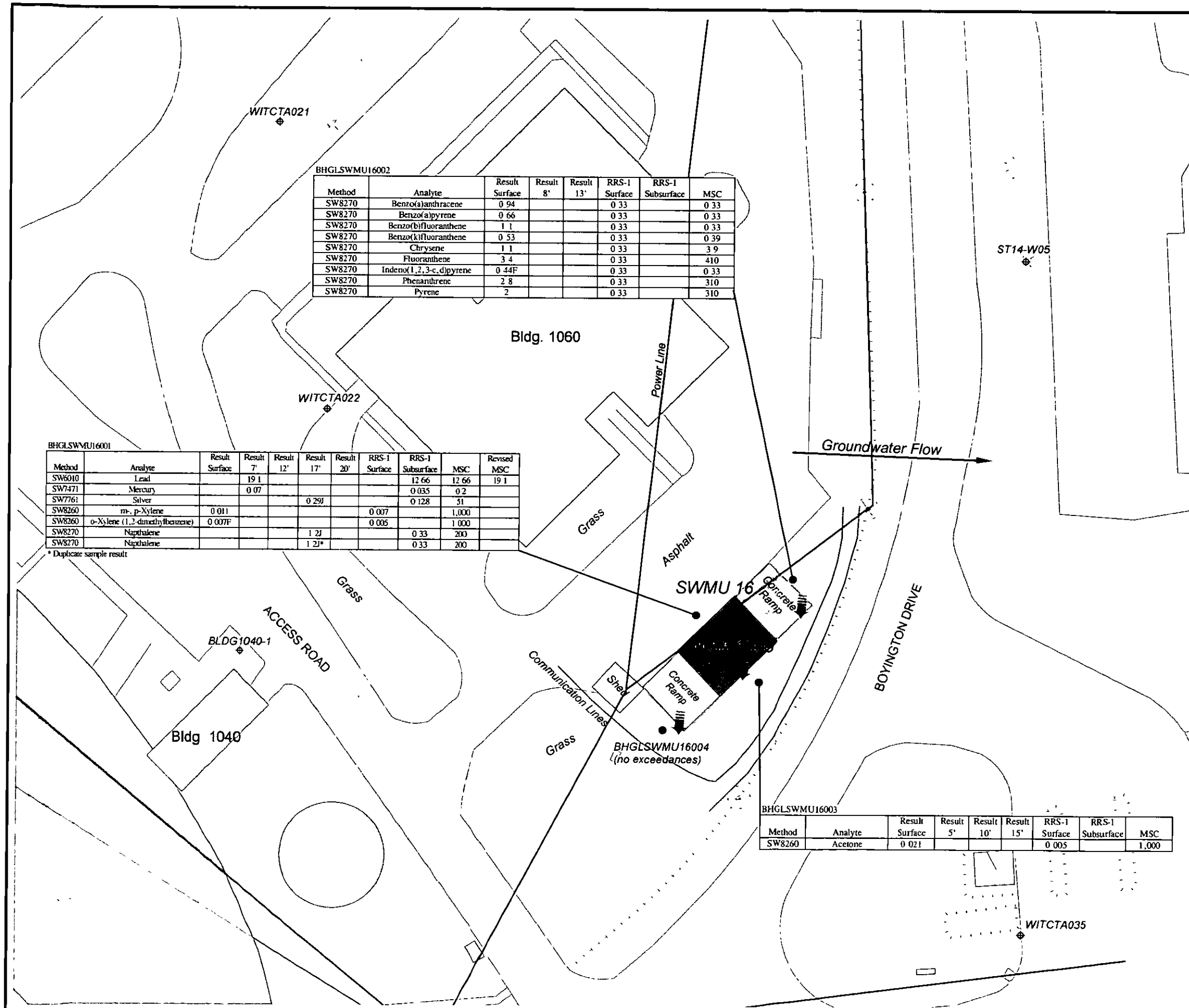

BHGLSWMU16002

Method	Analyte	Result Surface	Result 8'	Result 13'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8270	Benzo(a)anthracene	0 94			0 33		0 33
SW8270	Benzo(a)pyrene	0 66			0 33		0 33
SW8270	Benzo(b)fluoranthene	1 1			0 33		0 33
SW8270	Benzo(k)fluoranthene	0 53			0 33		0 39
SW8270	Chrysene	1 1			0 33		3 9
SW8270	Fluoranthene	3 4			0 33		410
SW8270	Indeno(1,2,3-c,d)pyrene	0 44F			0 33		0 33
SW8270	Phenanthrene	2 8			0 33		310
SW8270	Pyrene	2			0 33		310

BHGLSWMU16001

Method	Analyte	Result Surface	Result 7'	Result 12'	Result 17'	Result 20'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Lead		19 1					12 66	12 66	19 1
SW7471	Mercury		0 07					0 035	0 2	
SW7761	Silver				0 29J			0 128	51	
SW8260	m-, p-Xylene	0 011					0 007		1,000	
SW8260	o-Xylene (1,2-dimethylbenzene)	0 007F					0 005		1 000	
SW8270	Napthalene				1 2J			0 33	200	
SW8270	Napthalene				1 2J*			0 33	200	

* Duplicate sample result

BHGLSWMU16003

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8260	Acetone	0 021				0 005		1,000

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Figure 4.2

Analytical Concentrations Above Background SWMU 16

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Existing Monitoring Well
- Round 1 Soil Boring Location
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

N

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SCALE IN FEET

Filename X \AFC001\15bdb\report\rfi_phase2 apr
Project AFC001-15BDA
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Map Source HGL ArcView Database

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Figure 4.3

SWMU 33 Cross Section

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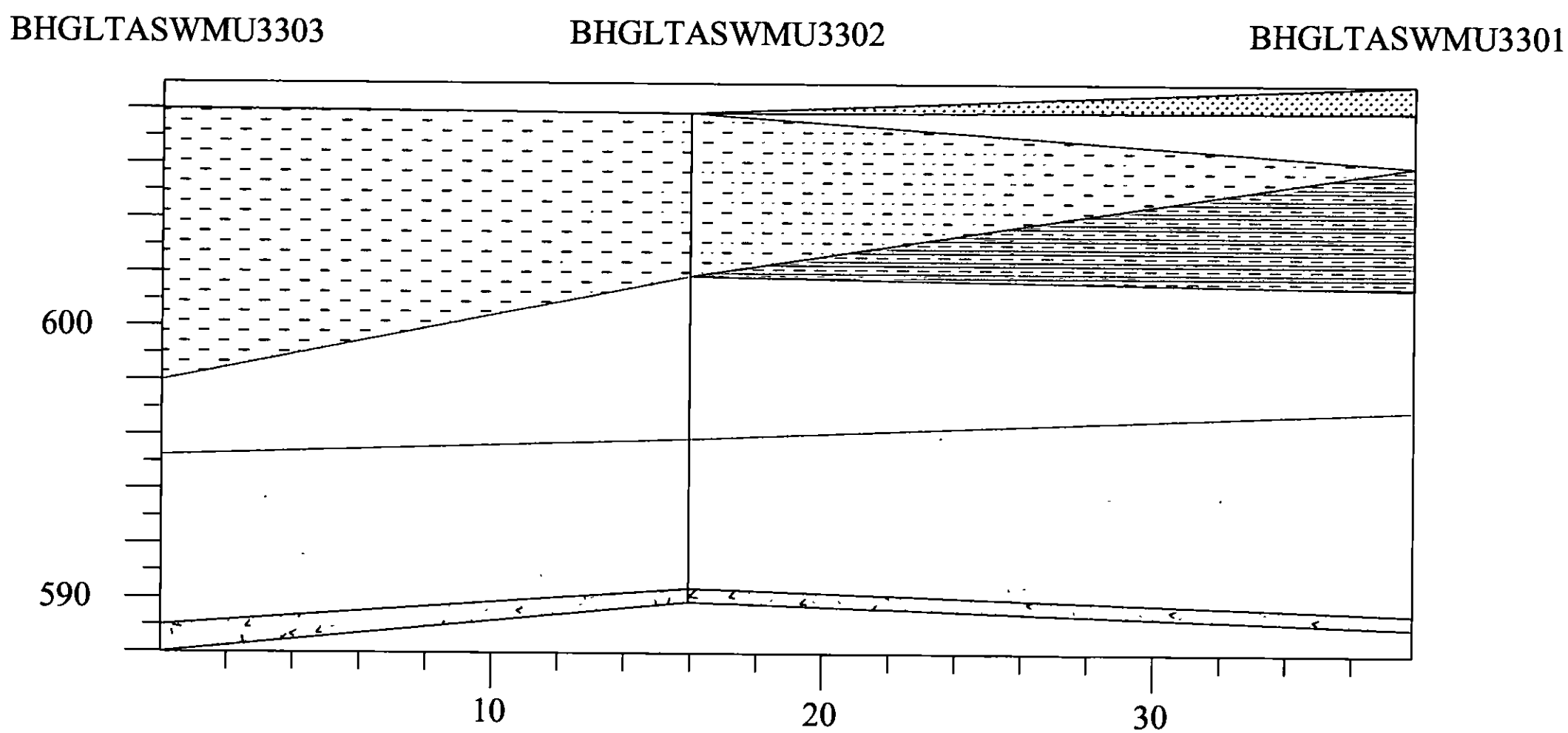
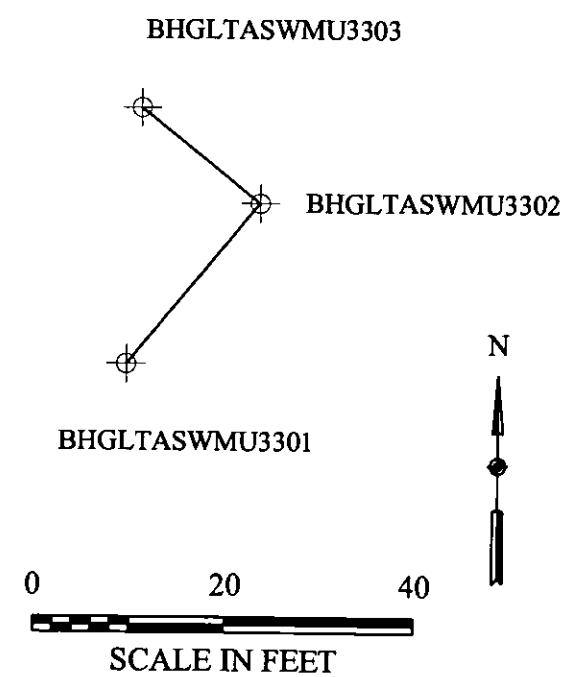


Legend

- Asphalt & Fill
- Silty Sand
- Clayey Sand
- Sandy Clay
- Sand
- Groundwater elevation encountered during drilling



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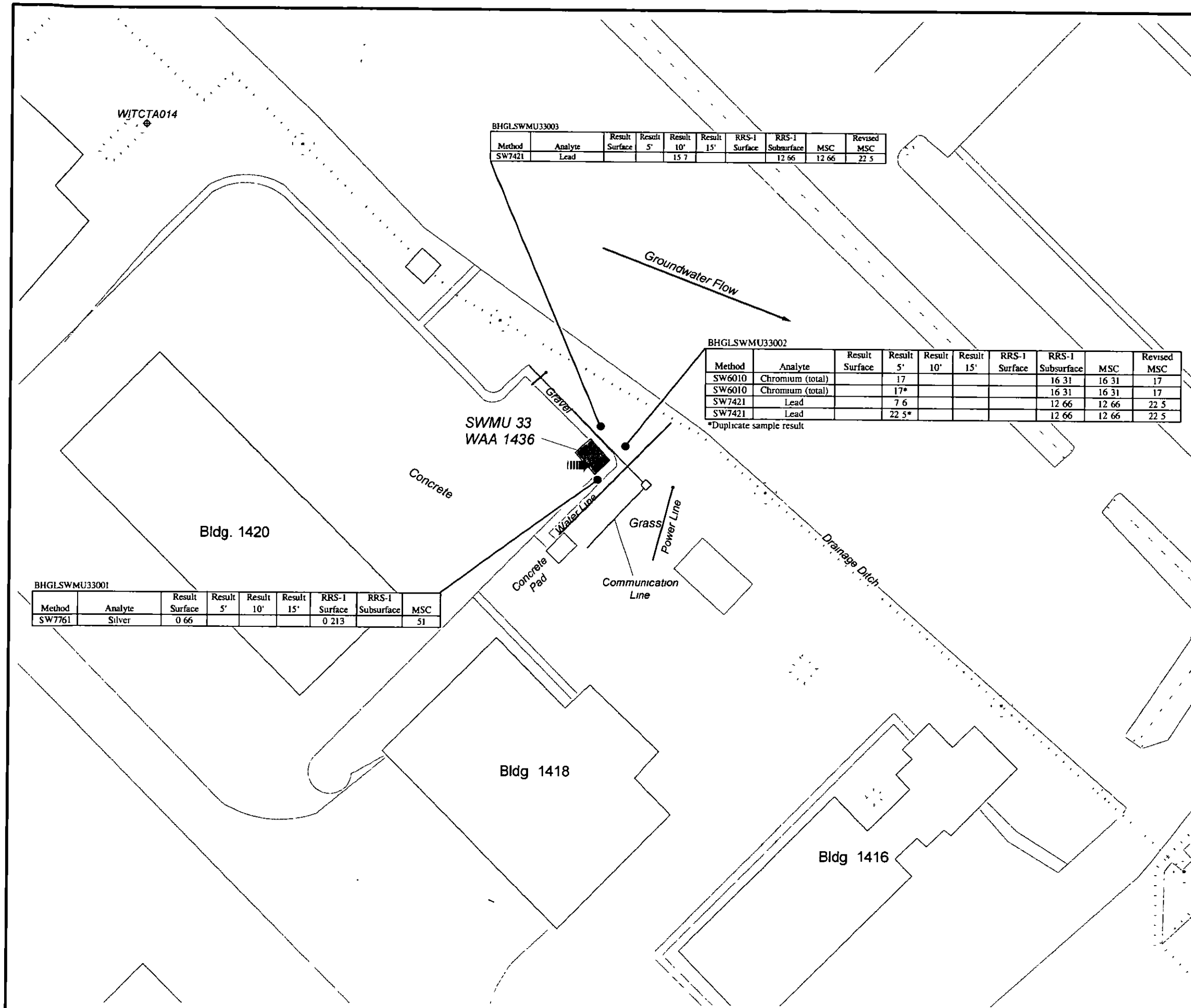
HYDRO GeoLogic



BHGLSWMU33003

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW7421	Lead			15 7			12 66	12 66	22 5

BHGLSWMU33002

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Chromium (total)		17				16 31	16 31	17
SW6010	Chromium (total)		17*				16 31	16 31	17
SW7421	Lead		7 6				12 66	12 66	22 5
SW7421	Lead		22 5*				12 66	12 66	22 5

*Duplicate sample result

BHGLSWMU33001

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW7761	Silver	0 66				0 213		51

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Figure 4.4

Analytical Concentrations Above Background SWMU 33

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Existing Monitoring Well
- Round 1 Soil Boring Location
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract.

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

N

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SCALE IN FEET

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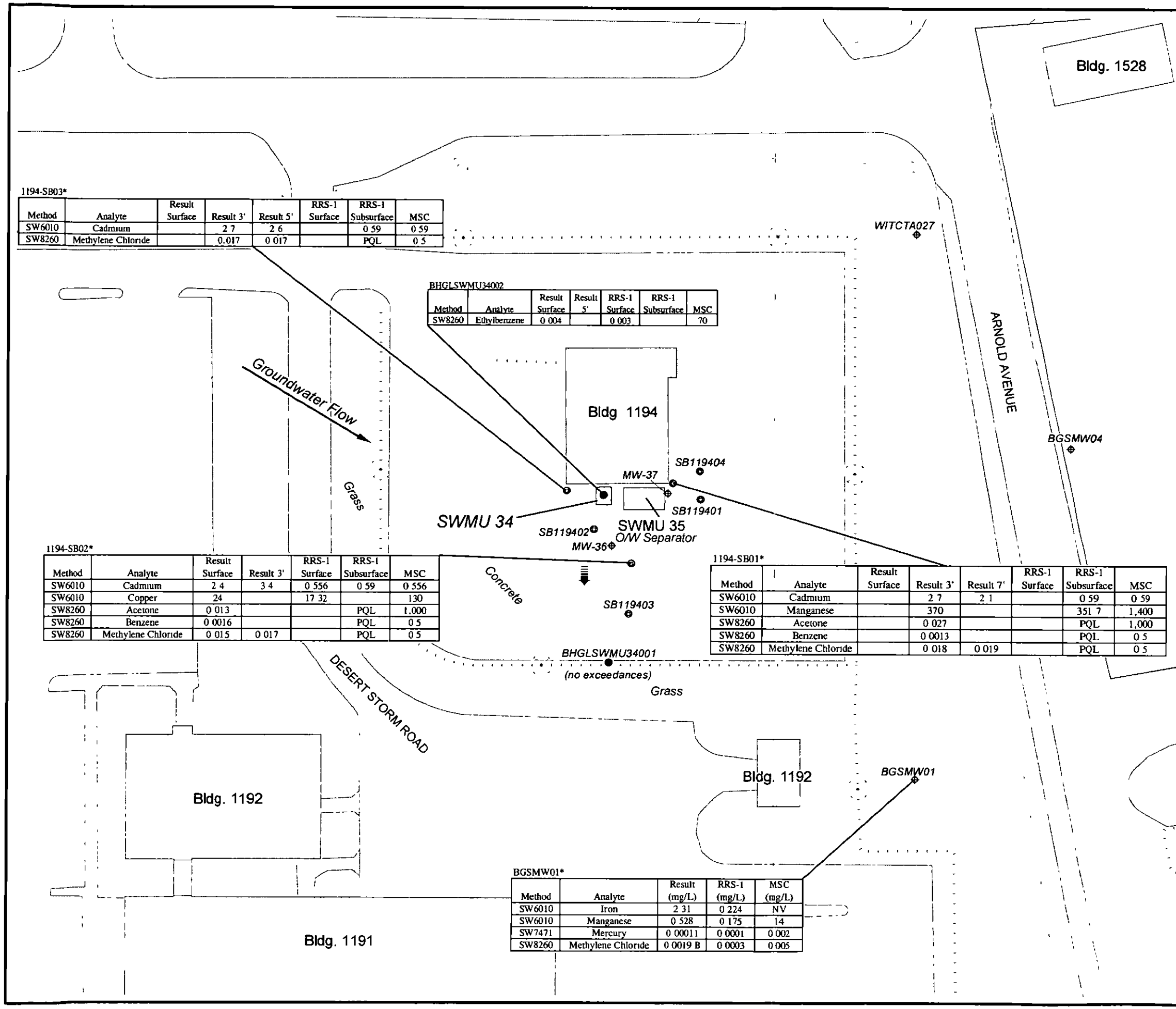
Map Source HGL ArcView Database

HYDRO GeoLogic INC



1194-SB03*

Method	Analyte	Result Surface	Result 3'	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cadmium		2 7	2 6		0 59	0 59
SW8260	Methylene Chloride		0.017	0 017		PQL	0 5

BHGLSWMU34002

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8260	Ethylbenzene	0 004		0 003		70

1194-SB02*

Method	Analyte	Result Surface	Result 3'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cadmium	2 4	3 4	0 556	0 59	0 556
SW6010	Copper	24		17 32		130
SW8260	Acetone	0 013			PQL	1,000
SW8260	Benzene	0 0016			PQL	0 5
SW8260	Methylene Chloride	0 015	0 017		PQL	0 5

1194-SB01*

Method	Analyte	Result Surface	Result 3'	Result 7'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cadmium		2 7	2 1		0 59	0 59
SW6010	Manganese		370			351 7	1,400
SW8260	Acetone		0 027			PQL	1,000
SW8260	Benzene		0 0013			PQL	0 5
SW8260	Methylene Chloride		0 018	0 019		PQL	0 5

BGSMW01*

Method	Analyte	Result (mg/L)	RRS-1 (mg/L)	MSC (mg/L)
SW6010	Iron	2 31	0 224	NV
SW6010	Manganese	0 528	0 175	14
SW7471	Mercury	0 00011	0 0001	0 002
SW8260	Methylene Chloride	0 0019 B	0 0003	0 005

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Figure 4.5

Analytical Concentrations Above Background SWMU 34

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Existing Monitoring Well
- Round I Soil Boring Location (SWMU 34)
- Soil Boring Location (SWMU 35)
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract.

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

* Source Draft NAS Fort Worth OWS RCRA Facility Investigaton Addendum Report, IT Corporaton, 1998

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Map Source HGL ArcView Database

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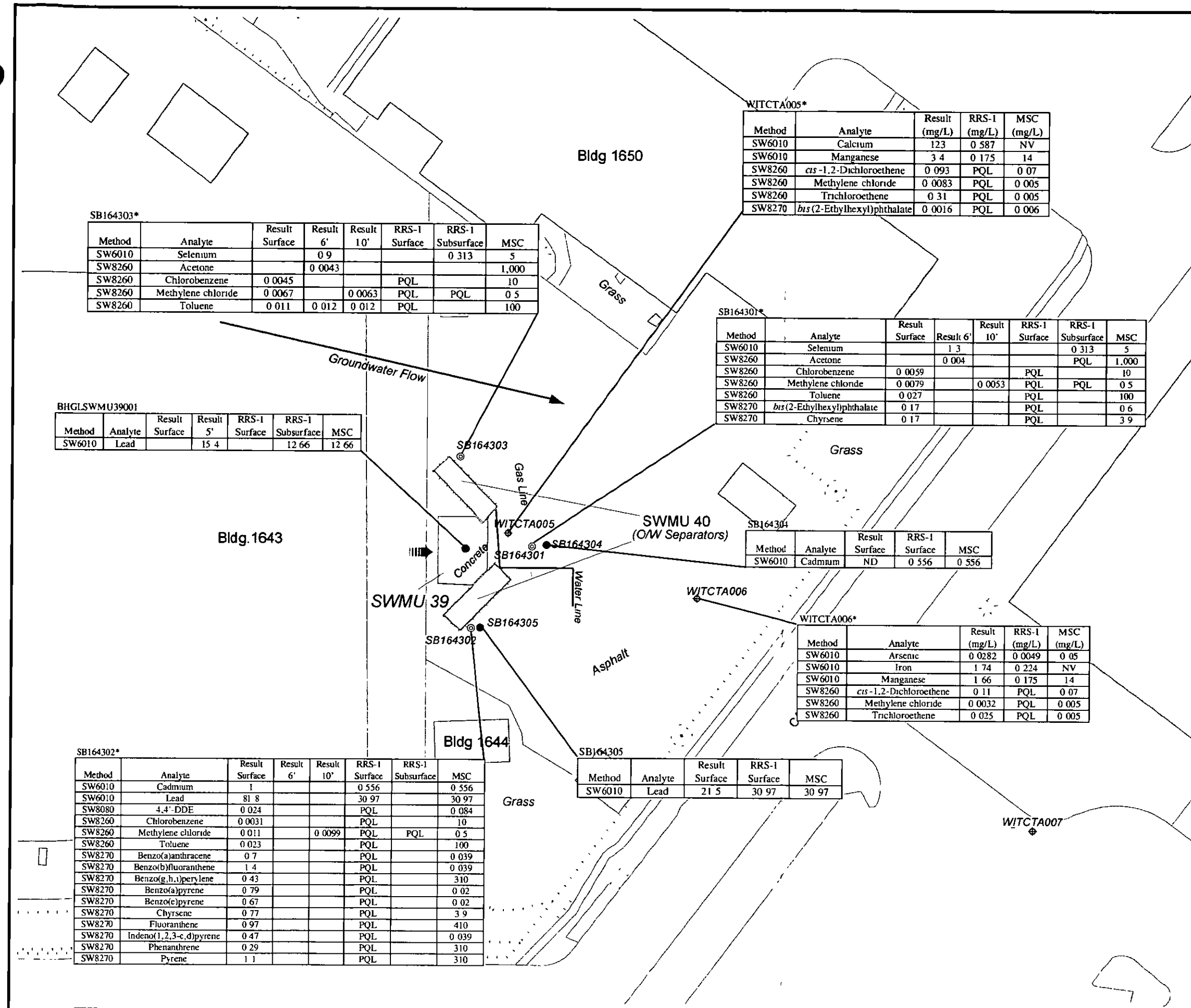

WITCTA005*

Method	Analyte	Result (mg/L)	RRS-1 (mg/L)	MSC (mg/L)
SW6010	Calcium	123	0 587	NV
SW6010	Manganese	3 4	0 175	14
SW8260	*cis*-1,2-Dichloroethene	0 093	PQL	0 07
SW8260	Methylene chloride	0 0083	PQL	0 005
SW8260	Trichloroethene	0 31	PQL	0 005
SW8270	*bis*(2-Ethylhexyl)phthalate	0 0016	PQL	0 006

SB164303*

Method	Analyte	Result Surface	Result 6'	Result 10'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Selenium		0 9			0 313	5
SW8260	Acetone		0 0043				1,000
SW8260	Chlorobenzene	0 0045			PQL		10
SW8260	Methylene chloride	0 0067		0 0063	PQL	PQL	0 5
SW8260	Toluene	0 011	0 012	0 012	PQL		100

SB164301*

Method	Analyte	Result Surface	Result 6'	Result 10'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Selenium		1 3			0 313	5
SW8260	Acetone		0 004			PQL	1,000
SW8260	Chlorobenzene	0 0059			PQL		10
SW8260	Methylene chloride	0 0079		0 0053	PQL	PQL	0 5
SW8260	Toluene	0 027			PQL		100
SW8270	*bis*(2-Ethylhexyl)phthalate	0 17			PQL		0 6
SW8270	Chyrsene	0 17			PQL		3 9

BHGLSWMU39001

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Lead		15 4		12 66	12 66

SB164304

Method	Analyte	Result Surface	RRS-1 Surface	MSC
SW6010	Cadmium	ND	0 556	0 556

WITCTA006*

Method	Analyte	Result (mg/L)	RRS-1 (mg/L)	MSC (mg/L)
SW6010	Arsenic	0 0282	0 0049	0 05
SW6010	Iron	1 74	0 224	NV
SW6010	Manganese	1 66	0 175	14
SW8260	*cis*-1,2-Dichloroethene	0 11	PQL	0 07
SW8260	Methylene chloride	0 0032	PQL	0 005
SW8260	Trichloroethene	0 025	PQL	0 005

SB164302*

Method	Analyte	Result Surface	Result 6'	Result 10'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cadmium	1			0 556		0 556
SW6010	Lead	81 8			30 97		30 97
SW8080	4,4'-DDE	0 024			PQL		0 084
SW8260	Chlorobenzene	0 0031			PQL		10
SW8260	Methylene chloride	0 011		0 0099	PQL	PQL	0 5
SW8260	Toluene	0 023			PQL		100
SW8270	Benzo(a)anthracene	0 7			PQL		0 039
SW8270	Benzo(b)fluoranthene	1 4			PQL		0 039
SW8270	Benzo(g,h,i)perylene	0 43			PQL		310
SW8270	Benzo(a)pyrene	0 79			PQL		0 02
SW8270	Benzo(e)pyrene	0 67			PQL		0 02
SW8270	Chyrsene	0 77			PQL		3 9
SW8270	Fluoranthene	0 97			PQL		410
SW8270	Indeno(1,2,3-c,d)pyrene	0 47			PQL		0 039
SW8270	Phenanthrene	0 29			PQL		310
SW8270	Pyrene	1 1			PQL		310

SB164305

Method	Analyte	Result Surface	RRS-1 Surface	MSC
SW6010	Lead	21 5	30 97	30 97

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Figure 4.6

Analytical Concentrations Above Background SWMU 39

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Monitoring Well
- Soil Boring Location (SWMU 39)
- IT Soil Boring Location-1997 (SWMU 40)
- IT Phase II Soil Boring Location-1999 (SWMU 40)
- Surface Runoff
- Round I Results
- Round II Analyses
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation
* Source Draft RCRA Facilities Investigation Sanitary Sewer System, September 1997, IT Corporation

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Figure 4.7

SWMU 42 Cross Section

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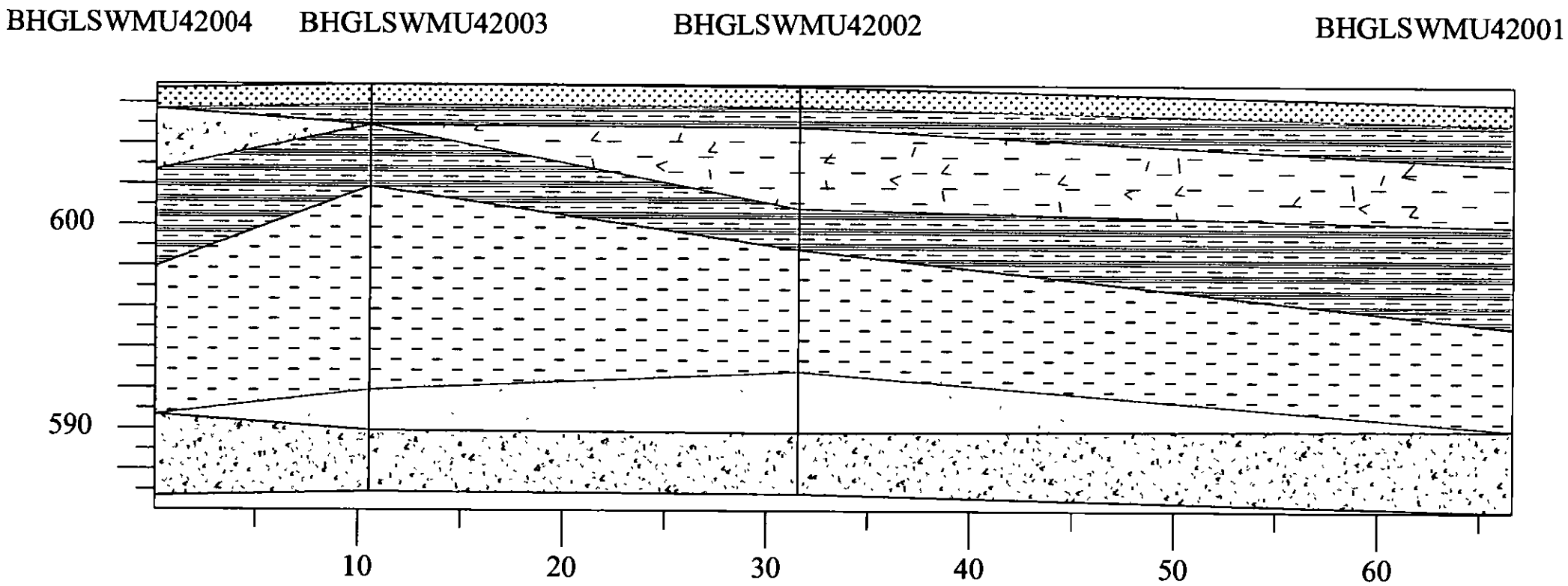
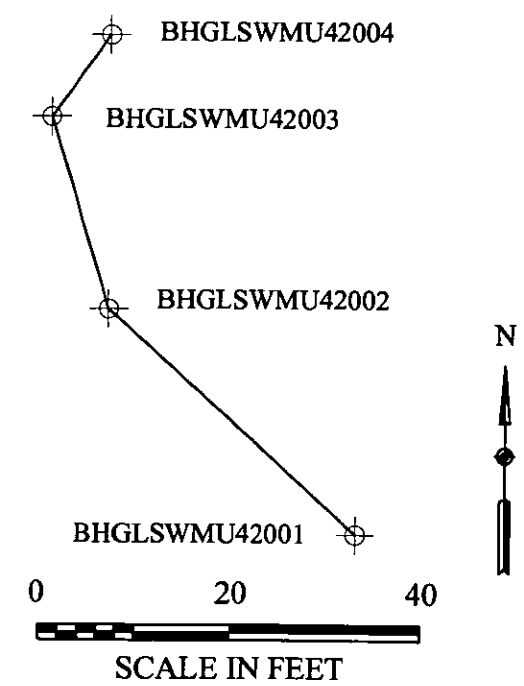


Legend

- Asphalt & Fill
- Silty Clay
- Clayey Silt w/Sand & Gravel
- Clayey Sand & Gravel
- Sand
- Sand & Gravel
- Groundwater elevation encountered during drilling



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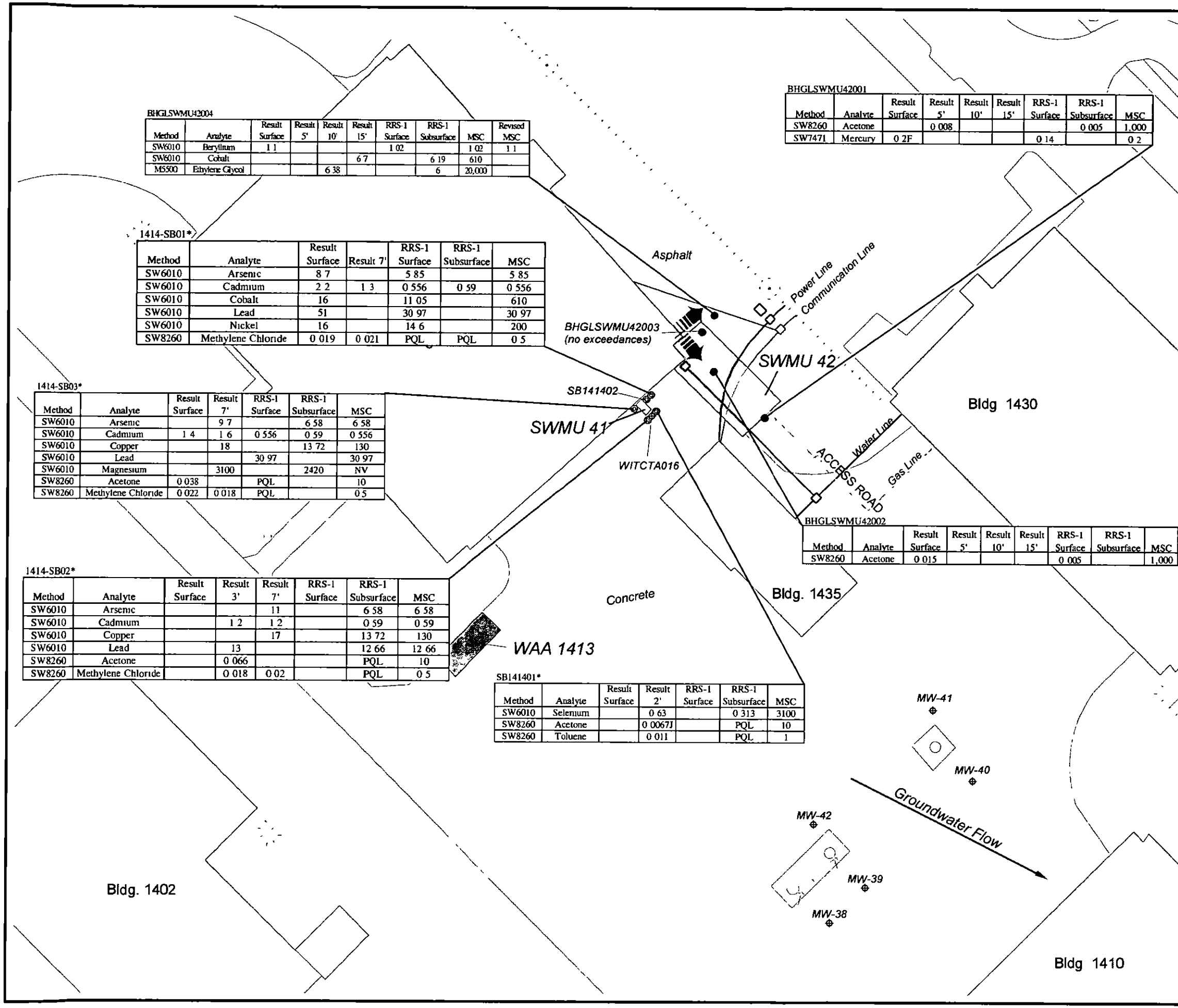
Revised: 07/06/00 jb

HYDRO GeoLogic



BHGLSWMU42004

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Beryllium	1 1				1 02		1 02	1 1
SW6010	Cobalt				6 7		6 19	610	
M5500	Ethylene Glycol			6 38			6	20,000	

BHGLSWMU42001

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8260	Acetone		0 008				0 005	1,000
SW7471	Mercury	0 2F				0 14		0 2

1414-SB01*

Method	Analyte	Result Surface	Result 7'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Arsenic	8 7		5 85		5 85
SW6010	Cadmium	2 2	1 3	0 556	0 59	0 556
SW6010	Cobalt	16		11 05		610
SW6010	Lead	51		30 97		30 97
SW6010	Nickel	16		14 6		200
SW8260	Methylene Chloride	0 019	0 021	PQL	PQL	0 5

1414-SB03*

Method	Analyte	Result Surface	Result 7'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Arsenic		9 7		6 58	6 58
SW6010	Cadmium	1 4	1 6	0 556	0 59	0 556
SW6010	Copper		18		13 72	130
SW6010	Lead			30 97		30 97
SW6010	Magnesium		3100		2420	NV
SW8260	Acetone	0 038		PQL		10
SW8260	Methylene Chloride	0 022	0 018	PQL		0 5

BHGLSWMU42002

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8260	Acetone	0 015				0 005		1,000

1414-SB02*

Method	Analyte	Result Surface	Result 3'	Result 7'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Arsenic			11		6 58	6 58
SW6010	Cadmium		1 2	1 2		0 59	0 59
SW6010	Copper			17		13 72	130
SW6010	Lead		13			12 66	12 66
SW8260	Acetone		0 066			PQL	10
SW8260	Methylene Chloride		0 018	0 02		PQL	0 5

SB141401*

Method	Analyte	Result Surface	Result 2'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Selenium		0 63		0 313	3100
SW8260	Acetone		0 0067J		PQL	10
SW8260	Toluene		0 011		PQL	1

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Figure 4.8

Analytical Concentrations Above Background SWMU 42

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Existing Monitoring Well
- Round 1 Soil Boring Location (SWMU 42)
- Soil Boring Location (SWMU 41)
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract.

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

* Source Draft NAS Fort Worth OWS RCRA Facility Investigaton Addendum Report, IT Corporaton, 1998

N

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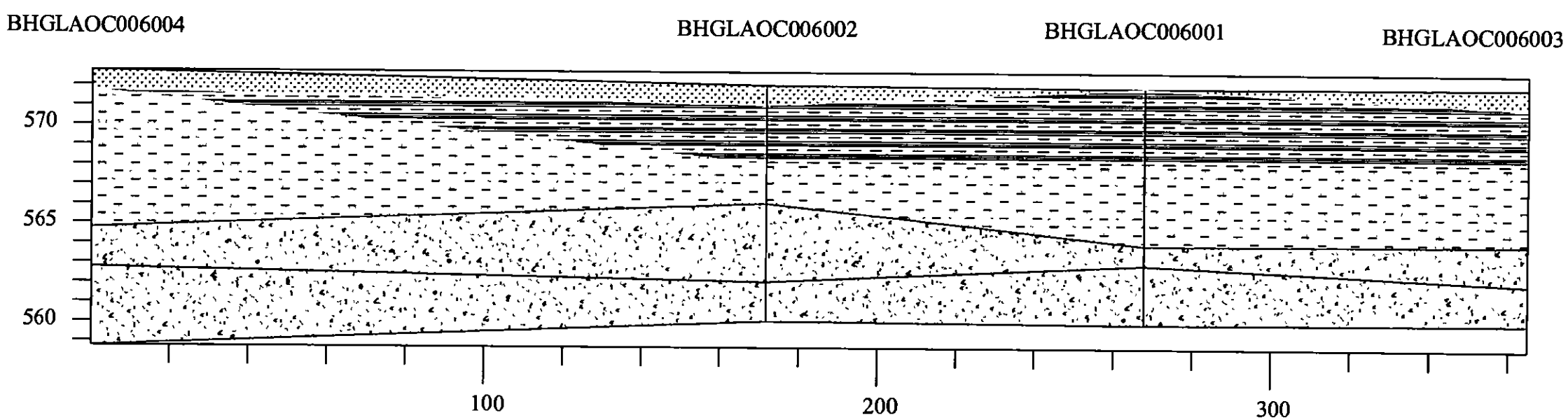
Project AFC001-15BDA
Created 10/26/99 jbelcher
Revised 07/10/00 TKH
Map Source HGL ArcView Database

HYDRO GeoLogic INC

Figure 4.9

AOC 6 Cross Section

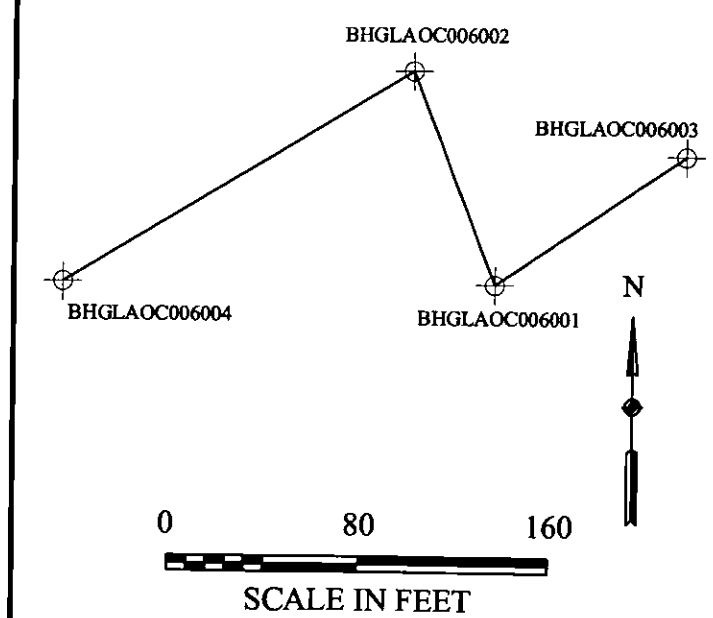
U.S. Air Force Center for Environmental Excellence



Legend

- Asphalt & Fill
- Clayey Silt
- Sandy Silt & Gravel
- Sand & Gravel
- Groundwater elevation encountered during drilling

Note: Vertical Exaggeration = 5X



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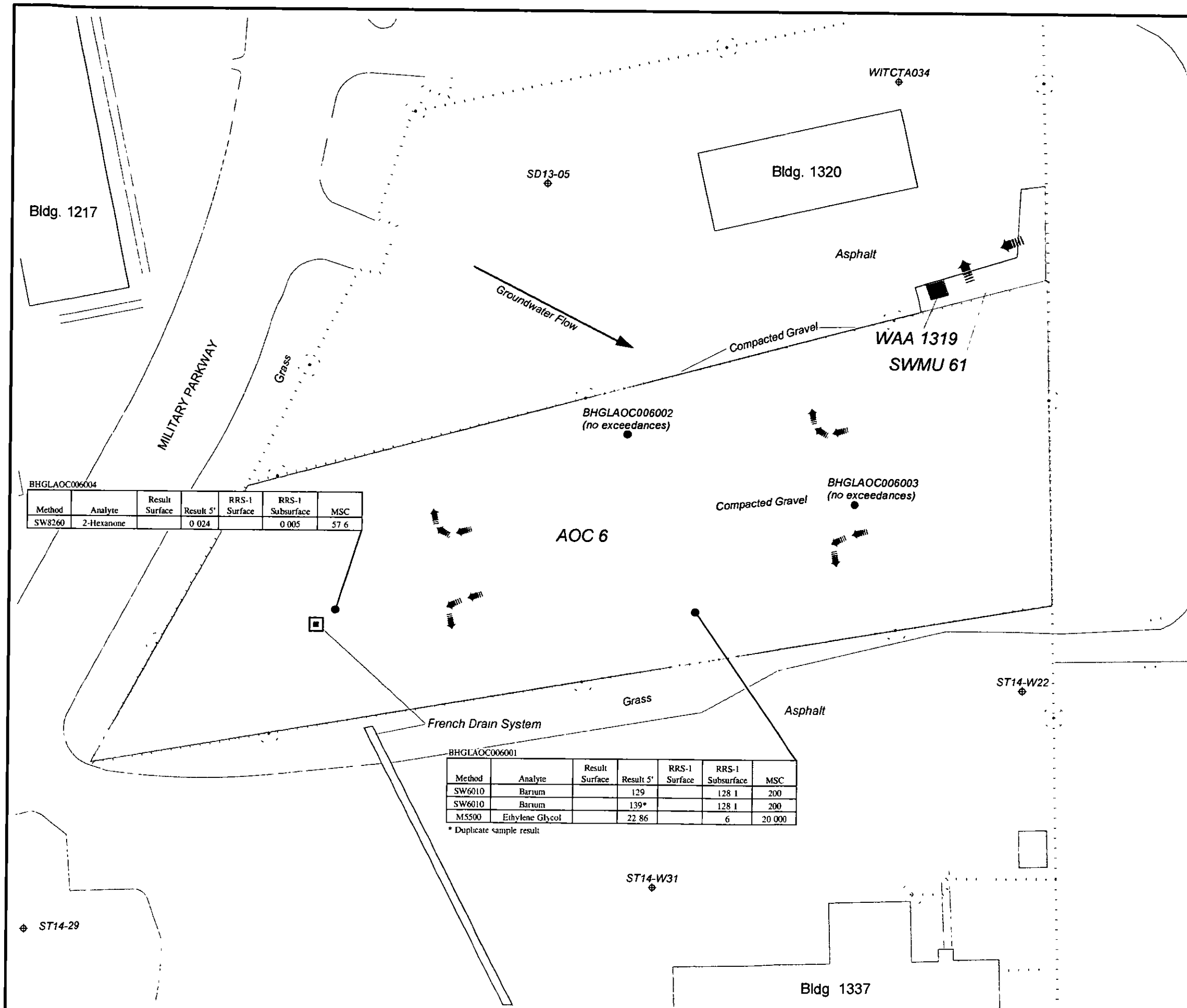

BHGLAOC006004

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW8260	2-Hexanone		0 024		0 005	57 6

BHGLAOC006001

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Barium		129		128 1	200
SW6010	Barium		139*		128 1	200
M5500	Ethylene Glycol		22 86		6	20 000

* Duplicate sample result

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Figure 4.10

Analytical Concentrations Above Background AOC 6

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Area of Concern (AOC)
- Existing Monitoring Well
- Round 1 Soil Boring Location
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract.

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

N

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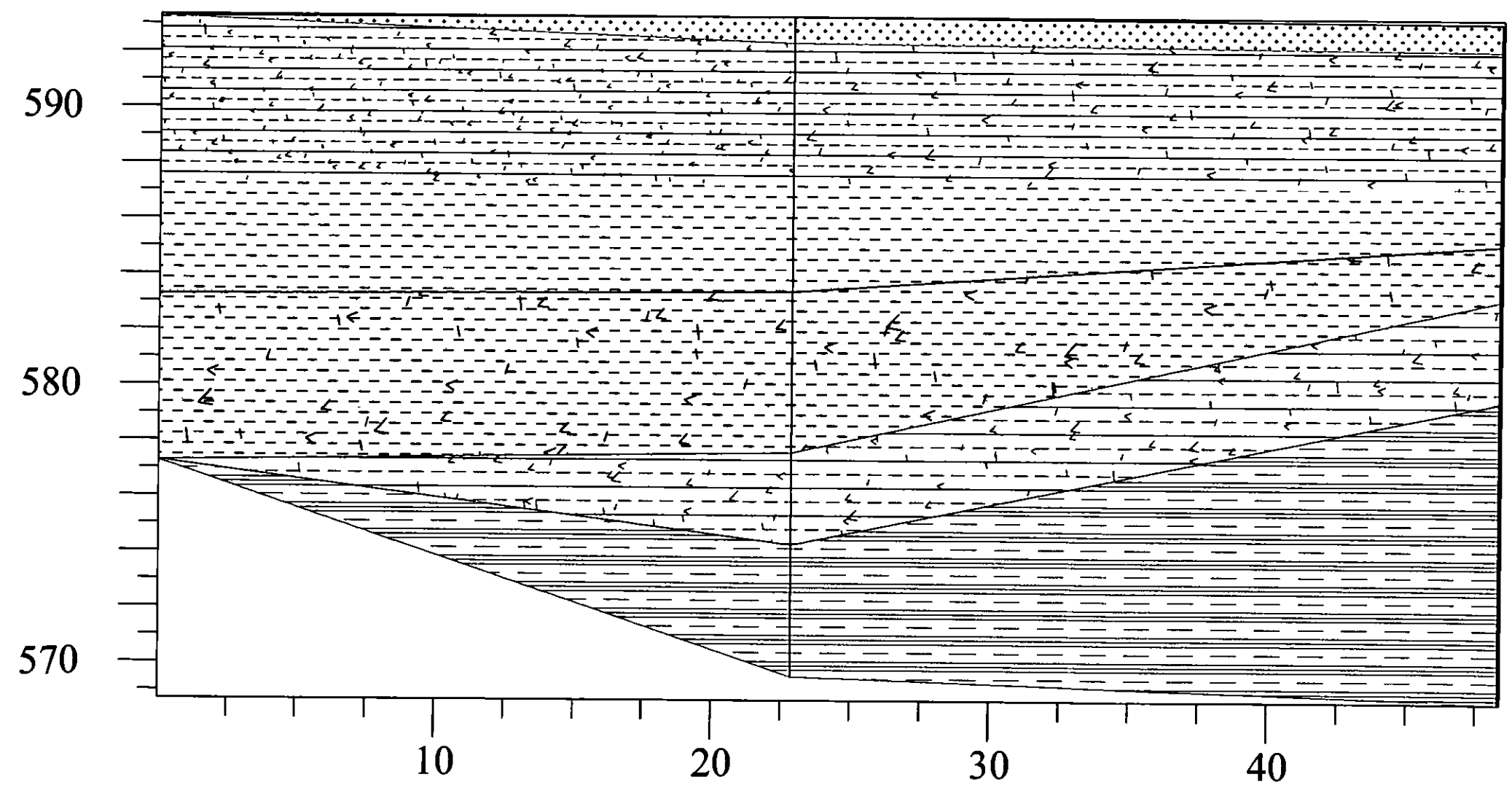
Project AFC001-15BDA
Created 10/26/99 jbelcher
Revised 06/30/00 ap
Map Source HGL ArcView Database

HYDRO GeoLogic INC

Figure 4.11

AOC 15 Cross Section

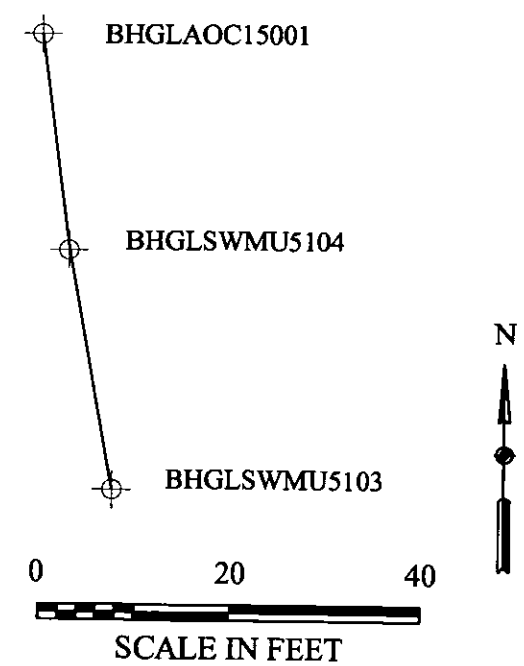
U.S. Air Force Center for Environmental Excellence



Legend

- Asphalt & Fill
- Clay & Silt w/Gravel
- Sandy Silt
- Sandy Silt w/Gravel
- Clay, Silt Sand & Gravel
- Clay

Note: Water table not encountered before refusal.



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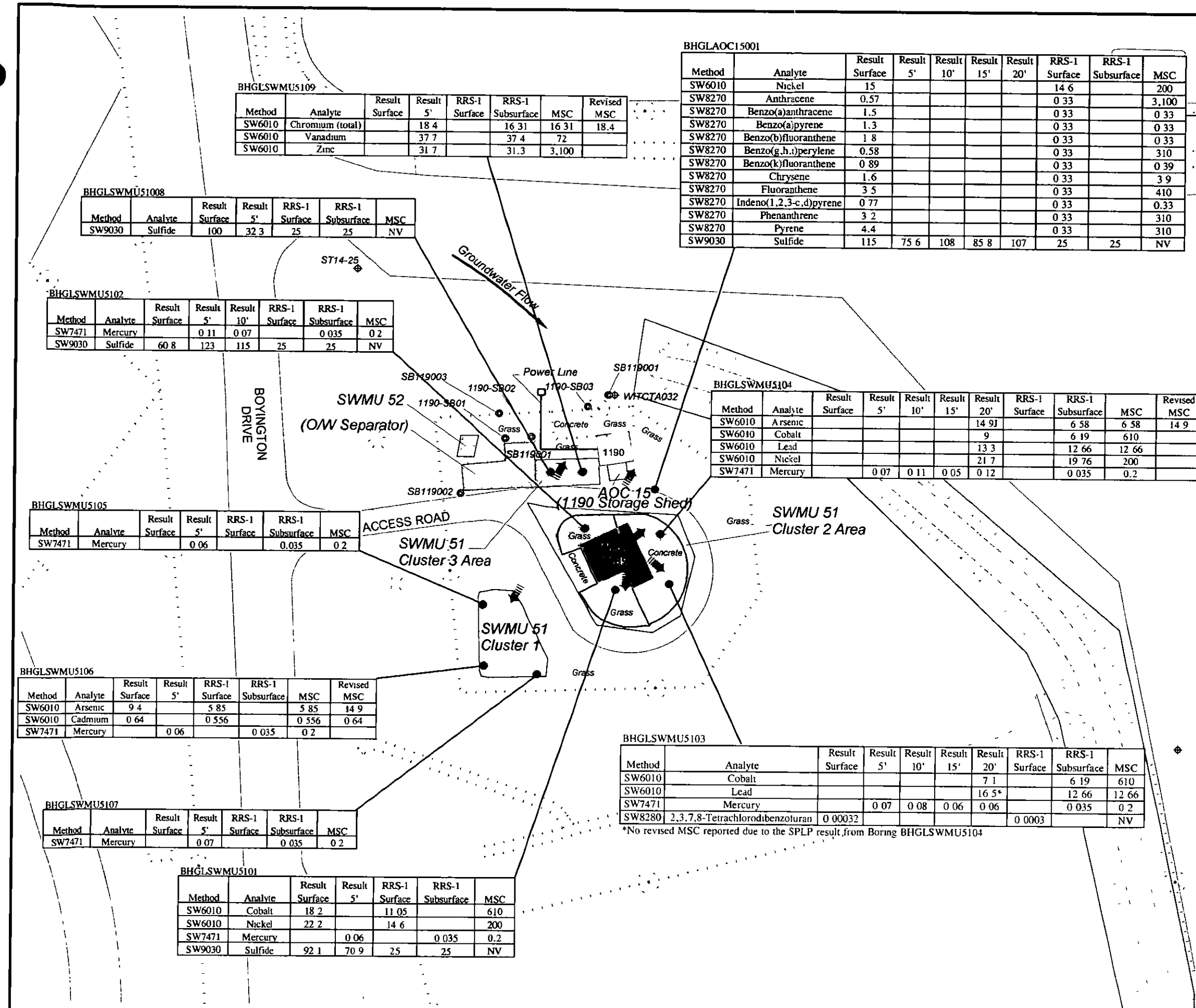
Project AFC001-15
Revised. 07/06/00 jb

HYDRO GeoLogic



BHGLSWMU5109

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Chromium (total)		18 4		16 31	16 31	18.4
SW6010	Vanadium		37 7		37 4	72	
SW6010	Zinc		31 7		31.3	3,100	

BHGLSWMU51008

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW9030	Sulfide	100	32 3	25	25	NV

BHGLSWMU5102

Method	Analyte	Result Surface	Result 5'	Result 10'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW7471	Mercury		0 11	0 07		0 035	0 2
SW9030	Sulfide	60 8	123	115	25	25	NV

BHGLSWMU5105

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW7471	Mercury		0 06		0.035	0 2

BHGLSWMU5106

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Arsenic	9 4		5 85		5 85	14 9
SW6010	Cadmium	0 64		0 556		0 556	0 64
SW7471	Mercury		0 06		0 035	0 2	

BHGLSWMU5107

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW7471	Mercury		0 07		0 035	0 2

BHGLSWMU5101

Method	Analyte	Result Surface	Result 5'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cobalt	18 2		11 05		610
SW6010	Nickel	22 2		14 6		200
SW7471	Mercury		0 06		0 035	0.2
SW9030	Sulfide	92 1	70 9	25	25	NV

BHGLAOC15001

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	Result 20'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Nickel	15					14 6		200
SW8270	Anthracene	0.57					0 33		3,100
SW8270	Benzo(a)anthracene	1.5					0 33		0 33
SW8270	Benzo(a)pyrene	1.3					0 33		0 33
SW8270	Benzo(b)fluoranthene	1 8					0 33		0 33
SW8270	Benzo(g,h,i)perylene	0.58					0 33		310
SW8270	Benzo(k)fluoranthene	0 89					0 33		0 39
SW8270	Chrysene	1.6					0 33		3 9
SW8270	Fluoranthene	3 5					0 33		410
SW8270	Indeno(1,2,3-c,d)pyrene	0 77					0 33		0.33
SW8270	Phenanthrene	3 2					0 33		310
SW8270	Pyrene	4.4					0 33		310
SW9030	Sulfide	115	75 6	108	85 8	107	25	25	NV

BHGLSWMU5104

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	Result 20'	RRS-1 Surface	RRS-1 Subsurface	MSC	Revised MSC
SW6010	Arsenic					14 9J		6 58	6 58	14 9
SW6010	Cobalt					9		6 19	610	
SW6010	Lead					13 3		12 66	12 66	
SW6010	Nickel					21 7		19 76	200	
SW7471	Mercury		0 07	0 11	0 05	0 12		0 035	0.2	

BHGLSWMU5103

Method	Analyte	Result Surface	Result 5'	Result 10'	Result 15'	Result 20'	RRS-1 Surface	RRS-1 Subsurface	MSC
SW6010	Cobalt					7 1		6 19	610
SW6010	Lead					16 5*		12 66	12 66
SW7471	Mercury		0 07	0 08	0 06	0 06		0 035	0 2
SW8280	2,3,7,8-Tetrachlorodibenzofuran	0 00032					0 0003		NV

*No revised MSC reported due to the SPLP result from Boring BHGLSWMU5104

HydroGeoLogic, Inc —RCRA Facility Investigation Report
NAS Fort Worth JRB, Texas

Figure 4.12

Analytical Concentrations Above Background AOC 15

U.S. Air Force Center for Environmental Excellence

Legend

- Solid Waste Management Unit (SWMU)
- Waste Accumulation Area (WAA)
- Area of Concern (AOC)
- Existing Monitoring Well
- Round 1 Soil Boring Location (AOC 15 and SWMU 51)
- Soil Boring Location (SWMU 52)
- Surface Runoff
- Round I results
- Analyte detected above MSC. SPLP not performed.
- Analyte detected above MSC in soil and in SPLP extract.
- Analyte detected above MSC in soil, but detected below MSC in SPLP extract.

Notes
Concentrations reported in mg/kg
MSC—Medium-Specific Concentration
Revised MSC—Value based on SPLP result
NV—No Value
F—The analyte was positively identified but the associated numerical value is below the adjusted method quantitation limit
J—The analyte was positively identified, the quantitation is an estimation

N

25 0 25 50 75
SCALE IN FEET

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Project AFC001-15BDA
Created 10/26/99 jbelcher
Revised 07/07/00 jb
Map Source HGL ArcView Database

HYDRO GeoLogic INC

TAB

Section 5

5.0 DISCUSSION OF ANALYTICAL RESULTS

5.1 SWMU 16 ANALYTICAL RESULTS

5.1.1 Surface Soil

Low concentrations of two VOCs, *m*-,*p*-xylene and *o*-xylene, were detected in the surface soil sample collected from boring BHGLSWMU16001 (Figure 4 2). These two analytes were not detected in any of the subsurface soil samples collected from the same boring, nor were they repeated in any of the other three borings advanced at the site. As a result, these detections of *m*-,*p*-xylene and *o*-xylene appear to be isolated and no pattern of occurrence can be identified based on the location and/or sampling interval. Based on this information, these constituents do not warrant additional consideration.

One low detection of acetone was detected in the surface sample collected from boring BHGLSWMU16003 (Figure 4.2). Acetone is a common laboratory contaminant. As this detection of acetone was not repeated in any of the other surface or subsurface samples collected at SWMU 16, acetone shows no pattern of occurrence and is therefore more likely attributed to laboratory contamination than a release from the site.

Several polynuclear aromatic hydrocarbons (PAHs) were detected in the surface soil sample collected from boring BHGLSWMU16002. These PAHs were all isolated to the surface sample interval and were not detected in any other borings advanced at the site. Because there is no pattern of occurrence, these constituents are not indicative of a release of hazardous constituents from SWMU 16, and are most likely attributed to the asphalt parking lot adjacent to the sample location. Therefore, the PAHs at SWMU 16 do not warrant further consideration.

5.1.2 Subsurface Soil

The following inorganic constituents were detected at concentrations slightly above their corresponding background values in samples collected in the subsurface at SWMU 16: lead, mercury, and silver. Since these constituents were only detected in one sample each, no pattern of occurrence can be established. Although the sample result for lead (19.1 m/kg) was detected above both background and the MSC (12.66 mg/kg), the analyte passed the SPLP extraction, resulting in a site specific alternate MSC of 19.1 mg/kg. Based on this information, these inorganic constituents are more likely to be extreme, but true background concentrations and are not indicative of a release of hazardous constituents from SWMU 16.

One SVOC, napthalene, was detected in the subsurface soil sample collected from the 17-foot interval of boring BHGLSWMU16001 (Figure 4.2). This detection of napthalene appears to be isolated and no pattern of occurrence can be identified based on the location and sampling interval. Based on this information, this constituent does not warrant additional consideration.

5.2 SWMU 33 ANALYTICAL RESULTS

5.2.1 Surface Soil

Silver was the only metal detected in surface soil samples collected from SWMU 33. Silver is not a waste associated with SWMU 33 (Figure 4.4). This detection of silver is less than one mg/kg above background and was not detected above background in any other surface or subsurface soil samples collected at the site. Because there is no pattern of occurrence, this isolated detection of silver is considered to be an extreme, but true concentration of background and is not indicative of a release of hazardous constituents from SWMU 33.

5.2.2 Subsurface Soil

Two inorganic constituents, lead and chromium (total) were detected at concentrations slightly above their corresponding background values in the subsurface samples collected at SWMU 33 (Figure 4.4). Chromium was detected in one subsurface sample interval at a concentration less than one mg/kg above background. This detection of chromium is isolated with no pattern of occurrence. Although lead was detected slightly above background in two of the subsurface samples collected at SWMU 33, these low concentrations of lead are limited to the soil sample interval of each boring, thus appearing to be isolated detections. Based on this information, these inorganic constituents are most likely to be extreme, but true background concentrations and are not indicative of a release of hazardous constituents from SWMU 33.

5.3 SWMU 34 ANALYTICAL RESULTS

5.3.1 Surface Soil

One low concentration of ethylbenzene was detected in the surface sample collected from the center of SWMU 34. This detection was slightly above the MQL and well below the MSC (Figure 4.5). No other constituents were detected in the surface or subsurface soils sampled at SWMU 34. This low detection of ethylbenzene is most likely attributed to the adjacent OWS (SWMU 35), as petroleum related compounds were detected during the investigation of that site.

5.3.2 Subsurface Soil

No organic or inorganic constituents were detected above background or MQLs in the subsurface soil samples collected at SWMU 34 (Figure 4.5). As a result, there is no evidence of a release at this site.

5.4 SWMU 39 ANALYTICAL RESULTS

5.4.1 Surface Soil

No constituents were detected above background or MQLs in the surface soil sample collected at SWMU 39 (Figure 4.6). As SWMU 39 was a surface unit, the analytical results from the surface sample suggest that there has been no release from SWMU 39.

5.4.2 Subsurface Soil

Lead (15.4 mg/kg) was detected slightly above both background and MSC (12.66 mg/kg) in the subsurface soil sample collected at SWMU 39. However, higher concentrations of lead, along with other exceedences of metals, VOCs and SVOCs were detected during the investigation of the two OWSs located immediately north and south of SWMU 39. As there were no other constituents detected in the samples collected within SWMU 39, this concentration of lead in the subsurface is most likely an extreme but true background value and is not indicative of a release from SWMU 39.

5.5 SWMU 42 ANALYTICAL RESULTS

5.5.1 Surface Soil

Two inorganic constituents, beryllium and mercury, were detected at concentrations slightly above their corresponding background values in the surface samples collected at SWMU 42 (Figure 4 8). These detections of beryllium and mercury are less than one mg/kg above background and are isolated detections with no pattern of occurrence. In addition, neither metal was a waste associated with SWMU 42. Based on this information, these inorganic constituents are most likely to be extreme, but true background concentrations and are not indicative of a release of hazardous constituents from SWMU 42.

One concentration of acetone was detected slightly above the MQL and well below the MSC in one of the surface soil samples collected at SWMU 42 (Figure 4.8). Acetone is a common laboratory contaminant and is not a waste associated with SWMU 42. As a result, this concentration of acetone is considered to be an isolated detection and is not considered to be indicative of a release at SWMU 42.

5.5.2 Subsurface Soil

Subsurface soil sample results at SWMU 42 indicate low concentrations of one inorganic and two organic constituents detected slightly above background (Figure 4.8). The concentration of cobalt is less than one mg/kg above background and is well below the MSC. This concentration of cobalt was not repeated in any of the other samples collected at SWMU 42 and is therefore considered a to be an extreme, but true background concentration and is not indicative of a release at SWMU 42. The detection of ethylene glycol is also less than one

mg/kg above the MQL and is well below the MSC. This detection of ethylene glycol was not repeated in any of the other samples collected at the site and therefore no pattern of occurrence can be established. As a result, this detection of ethylene glycol appears to be an isolated detection at the site and is not indicative of a release of hazardous constituents from SWMU 42.

One concentration of acetone was detected slightly above the MQL and well below the MSC in one of the subsurface soil samples collected at SWMU 42 (Figure 4.8). Acetone is a common laboratory contaminant and is not a waste associated with SWMU 42. As a result, this concentration of acetone is considered to be an isolated detection and is not considered to be indicative of a release at SWMU 42.

5.6 AOC 6 ANALYTICAL RESULTS

5.6.1 Surface Soil

No constituents were detected above background or MQLs in the surface soil samples collected at AOC 6 (Figure 4.10). As AOC 6 consists of a parking lot, and was therefore a surface unit, the analytical results from the surface samples suggest that there is no evidence of a release at AOC 6.

5.6.2 Subsurface Soil

Subsurface soil sample results at AOC 6 indicate low concentrations of one inorganic and two organic constituents detected slightly above background (Figure 4.10). The concentration of barium is only slightly above background and well below the MSC. This concentration of barium was not repeated in any of the other sampling locations at AOC 6 and is therefore considered a to be an extreme, but true background concentration and is not indicative of a release at AOC 6. The detection of ethylene glycol is also well below the MSC. This detection of ethylene glycol was not repeated in any of the other samples collected at the site and therefore no pattern of occurrence can be established. As a result, this detection of ethylene glycol appears to be an isolated detection at the site and is not indicative of a release of hazardous constituents from AOC 6.

One isolated concentration of 2-hexanone was detected slightly above the MQL and well below the MSC in the subsurface soil sample collected from the 5-foot interval of boring BHGLAOC006004 (Figure 4.10.). 2-Hexanone is not a waste associated with the AOC 6 RV Parking Area. In addition, this detection of 2-hexanone was not repeated in any other samples collected at the site, and therefore no pattern of occurrence was established for this compound. As no other related VOCs or SVOCs were detected in any of the other samples collected at AOC 6, the detection of 2-hexanone appears to be an isolated detection at the site and is not indicative of a release of hazardous constituents from AOC 6.

The previous groundwater samples collected from the downgradient well ST14-W22 (Table 3.9) indicated concentrations of several metals, including aluminum, iron, manganese, zinc, and lead, above background and a concentration of TCE above the PQL. These results were discussed earlier in Section 3.2.7.1. None of these constituents were detected above background in the surface and subsurface soil samples collected during the investigation of AOC 6, and therefore are not considered to be associated with a release from this site.

5.7 AOC 15 ANALYTICAL RESULTS

5.7.1 Surface Soil

There is no documented history or evidence that AOC 15 has ever stored HW. As a result, one conformational boring was advanced at AOC 15, and the results of this boring were evaluated and compared to the results of the investigations conducted at nearby SWMU 51, the central waste storage area, and SWMU 52, the Building 1190 OWS.

Low concentrations of nickel, several PAHs, and sulfide were detected in the surface soil sample collected at AOC 15 (Figure 4.12). The concentration of nickel was less than one mg/kg above background and well below the MSC. Nickel was not detected in any of the subsurface samples collected at AOC 15, nor was it detected in any of the nearby surface soil samples collected during the investigation of SWMUs 51 or 52. As a result, this detection of nickel is considered to be an extreme, but true background concentration and is not indicative of a release from AOC 15.

Several PAHs were detected in the surface soil sample collected at AOC 15. These PAHs were all isolated to the surface sample interval and were not detected in any other samples collected at the site. Because there is no pattern of occurrence, these constituents are not indicative of a release of hazardous constituents from AOC 15, but are more likely attributed to the asphalt driveway adjacent to the sample location. Therefore, the presence of PAHs at AOC 15 do not warrant further consideration.

Sulfide was detected above the MQL in the surface soil sample collected from AOC 15. Sulfide was also detected above the MQL in three of the nine surface soil samples collected during the investigation of SWMU 51 (Figure 4.12). No background data for sulfide is available at NAS Fort Worth JRB.

HydroGeoLogic contacted Ms. Zarena Post [(512) 239-1332] of the TNRCC regarding available risk standards for sulfides in Texas. Ms. Post reports to the Toxicology and Risk Assessment (TARA) section, under the Chief Engineer. After consulting her files and members of her staff, Ms. Post indicated there are no risk standards for sulfides in the state of Texas. Ms. Camarie Perry, also of TARA, confirmed that sulfide levels in soils and groundwater can not be compared to risk-based standards. Ms. Perry consulted Mr. Jeffrey Patterson [(512) 239-2489], a chemist for the Superfund Cleanup program, regarding secondary sources of toxicological information (e.g., journals), but found no specific sulfide

information. As an MSC for sulfide has not been identified, additional sampling for sulfide is not warranted.

The analytical method used to determine sulfide concentrations, Method SW9030, is a titration screening method, and therefore, resulting data should not be construed as definitive. In addition, sulfide can be naturally produced by the biological breakdown of organic matter under anaerobic conditions.

5.7.2 Subsurface Soil

Varying levels of sulfide were detected in each subsurface sample interval of the soil boring advanced at AOC 15. Similar levels of sulfide were detected in the subsurface samples of three of the other borings advanced during the investigation of SWMU 51. No other constituents were detected above background or MQLs in the subsurface soil sampled at AOC 15.

5.8 CONCEPTUAL SITE MODEL

The conceptual model provides a basis for identifying and evaluating the potential risks to human health from the subject sites. The conceptual model facilitates consistent and comprehensive evaluation of risks by creating a framework for identifying the paths by which humans and ecological receptors may be impacted by the subject SWMUs and AOCs at NAS Fort Worth JRB.

The TNRCC approach consists of three RRSs. RRS 1 is based on background concentration levels and serves as the initial screen for a no release scenario closure. RRS 2 allows closure and/or remediation to health risk-based standards and criteria that are based on default assumptions concerning potential exposures. RRS 2 was used as a secondary screen for NFA site closures. If detected concentrations at the subject SWMUs and AOCs exceed RRS 1 and RRS 2, site closure would proceed under RRS 3, which consists of a baseline risk assessment, corrective measures study, and possible active remediation to attain risk-based standards.

The potential release and transport pathways for each of the SWMUs and AOCs investigated in this study are similar. All of the sites are generally covered with pavement with adjacent or perimeter grass covered areas. All of the sites are also adjacent to a storm water drainage ditch. The release pathways include runoff to surface water and/or leaching to groundwater. As stated in previous sections above, a soil investigation was conducted at each of the SWMUs and AOCs in order to determine if a release had occurred from any of the subject sites. Soil borings were placed in areas where wastes were historically stored and in areas where surface runoff from each site would have most likely collected. Evaluation of the initial RFI results against the above criteria indicated that a release of contaminants to soils has not occurred at the subject SWMUs and AOCs. As a result, a groundwater investigation will not be conducted. All of the subject sites presented in this RFI Report will be requested for closure

by the TNRCC under RRS 1 standards. As a result, a conceptual model is deemed unnecessary for these sites and will not be developed.

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Section 6

6.0 CONCLUSIONS

6.1 SWMU 16

Field observations and analytical results indicate that a release has not occurred from SWMU 16. Although low concentrations of several analytes were detected at the site, there was no pattern of any detections suggesting that historical waste storage practices at SWMU 16 resulted in a release at the unit. In addition, no constituents were detected above background in boring BHGLSWMU16004, which was advanced in the area where historic surface runoff from the site had collected (Figure 4.2). All of the waste currently stored at SWMU 16 is enclosed in a secured HW storage shed with secondary containment features and is managed under the Navy compliance program. Based on this information, NFA is warranted at the subject site and SWMU 16 is recommended for closure under RRS 1.

6.2 SWMU 33

Field observations and analytical results indicate that a release has not occurred from SWMU 33. Although low concentrations of chromium (total) and lead were detected above the MSC, these constituents were detected below the MSC in the SPLP extract, and do not pose a potential threat to groundwater. In addition, there was no pattern of occurrence of any detections suggesting that historical waste storage practices at SWMU 33 resulted in a release at the unit. SWMU 33 managed mostly solvents and petroleum related wastes. The absence of any organic compounds in the sample results confirms that the low concentrations of metals detected at the site are extreme but true background concentrations and are not indicative of a release from SWMU 33. All of the wastes currently stored at SWMU 33 are enclosed in a secured HW storage shed with secondary containment features and is managed under the Navy compliance program. Based on this information, NFA is warranted at the subject site and SWMU 33 is recommended for closure under RRS 1.

6.3 SWMU 34

Field observations and analytical results indicate that a release has not occurred at SWMU 34. Petroleum related wastes were stored at SWMU 34 on top of reinforced concrete approximately 1-foot thick. Inspections of the site revealed that the concrete beneath SWMU 34 was in good condition with no cracks or staining, leaving the possibility of contamination to the soils beneath the concrete unlikely. Therefore the low detection of ethylbenzene in the soil sample collected immediately below the concrete cover is most likely attributed to the OWS unit (SWMU 35) located immediately to the east of SWMU 34. The OWS is a subsurface unit and also manages petroleum related wastes. Prior investigations of the SWMU 35 OWS has revealed low levels of petroleum and metals contamination at the site. Contamination associated with the SWMU 35 OWS continues to be addressed and delineated under another investigation (IT, 1998). Any release from SWMU 34 would have been detected in the boring located in the grass at the base of the runoff path, BHGLSWMU34001 (Figure 4.5). No constituents were detected above background or MQLs in this boring. No waste is currently

stored at SWMU 34, and there has been no waste stored at this SWMU since shortly after 1990. Based on this information, NFA is warranted at the subject site and SWMU 34 is recommended for closure under RRS 1.

6.4 SWMU 39

Field observations and analytical results indicate that a release has not occurred at SWMU 39. Petroleum related wastes were stored at SWMU 39 on top of an asphalt parking lot. Inspections of this parking lot beneath SWMU 39 revealed that the asphalt was in good condition and there was no evidence of any prior release from the unit. SWMU 39 is flanked by two large OWSs (SWMU 40). Investigations of SWMU 40 revealed evidence of surface and subsurface contamination associated with the OWS. Although lead was detected in the subsurface soil sampled at SWMU 39, higher concentrations of lead, along with cadmium and petroleum related organic constituents were detected during the investigation of the SWMU 40 OWSs (IT, 1998). In addition, lead was not detected in the groundwater samples collected downgradient of the site (IT, 1998). As a result, the subsurface detection of lead at SWMU 39 is most likely to be an extreme, but true background concentration. As SWMU 39 was a surface unit, the absence of detections in the surface sample support the conclusion that there has not been a release from this SWMU (Figure 4.6). However, the detection of lead in the subsurface soil sample at SWMU 39 will continue to be addressed under the investigation of SWMU 40. No waste is currently stored at SWMU 39, and there has been no waste stored at this SWMU since shortly after 1990. Based on this information, NFA is warranted at the subject site and SWMU 39 is recommended for closure under RRS 1.

6.5 SWMU 42

Field observations and analytical results indicate that a release has not occurred from SWMU 42. Although low concentrations of several analytes were detected at the site, there was no pattern of any detections suggesting that historical waste storage practices at SWMU 42 resulted in a release at the unit. In addition, no constituents were detected above background in boring BHGLSWMU42003, which was advanced in the area where the majority of the wastes were historically stored at the SWMU (Figure 4.8). No waste is currently stored at SWMU 42, and there has been no waste stored at this SWMU since shortly after 1990. Based on this information, NFA is warranted at the subject site and SWMU 42 is recommended for closure under RRS 1.

6.6 AOC 6

Field observations and analytical results indicate that a release has not occurred from AOC 6. Although low concentrations of several analytes were detected at the site, there was no pattern of any detections suggesting that vehicle storage practices at AOC 6 resulted in a release at the unit. No constituents were detected above background or MQLs in two of the borings advanced within the unit, BHGLAOC006002 and BHGLAOC006003, which cover approximately one half of the entire AOC (Figure 4.10). There has been no documented

history of a release from AOC 6, and field inspections of the unit revealed no evidence of surface contamination at the site. AOC 6 continues to serve as an RV parking area under Navy management. Based on this information, NFA is warranted at the subject site and AOC 6 is recommended for closure under RRS 1.

6.7 AOC 15

Field observations and analytical results indicate that a release has not occurred from AOC 15. Concentrations of PAHs in the surface soil sample collected at AOC 15 do not appear to be site related. In addition, there was no pattern of any detections in the soil samples collected indicating that AOC 15 poses a threat to the environment. There has been no documented history of HW storage within AOC 15, and field inspections of the unit revealed no evidence of waste storage or surface contamination at the site. Based on this information, NFA is warranted at the subject site and AOC 15 is recommended for closure under RRS 1.

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TAB

Section 7

7.0 REFERENCES

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TAB

Appendix A

APPENDIX A

LETTER TO TNRCC
APRIL 20, 1999

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
BROOKS AIR FORCE BASE TEXAS

FEDERAL EXPRESS

April 20, 1999

Mr. Ray Risner
Corrective Action Section
Texas Natural Resource Conservation Commission
12100 Park 35 Circle, Bldg. D
Austin, TX 78753

Re: RCRA Facility Investigation of Waste Accumulation Areas
NAS Fort Worth JRB, Texas
Permit HW-50289

Dear Mr Risner·

This letter has been prepared in response to our conference call on Wednesday, March 24, 1999, during which we discussed the Final Work Plans (WPs) for the waste accumulation areas (WAAs) at Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB), Texas. These WPs describe the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) to be conducted at several solid waste management units (SWMUs) and areas of concern (AOCs) that require further investigation. During our conference call, we addressed possible ways to reduce the projected cost associated with the large number of Appendix IX sample analyses proposed in the Final WPs. This reduction is necessary due to recent rebidding of analytical costs by AFCEE's contractor and a subsequent increase of an Appendix IX analysis by 50 percent. You indicated in the conference call that the TNRCC would accept a shorter list of analyses for each site, as long at the Air Force provided adequate certification of the wastes handled at each WAA. You also indicated that the TNRCC would not require groundwater sampling at sites where a release to soil was not confirmed. This letter provides the necessary historical information regarding each WAA and subsequent list of recommended analyses for each WAA.

Provision VIII.A 2.b of Permit HW-50289 requires that soil and groundwater samples submitted for chemical analysis be analyzed in accordance with EPA SW-846 for all Appendix IX constituents, unless a shorter list can be justified. In order to provide adequate justification of a reduced list of analyses for the RFI, the Air Force has provided the attached Table 1 that summarizes the types and quantities of waste handled at each site. Table 1 also includes the analyses necessary to adequately determine if there was a release of hazardous materials at each site, based on the wastes handled at each site. The information provided in Table 1 was compiled from a number of sources that

document both current and historical waste management practices, and the types of waste generated by the various industrial operations at NAS Fort Worth JRB. Additional waste sources were added to selected sites where there was potential for waste to be stored from industrial buildings located nearby. Background information was gathered from the following sources:

- A.T. Kearney 1989, RCRA Facility Assessment, PR/VSI Report, Carswell Air Force Base, Fort Worth, Texas
- CH2M HILL, 1984, Installation Restoration Program Records Search for Carswell Air Force Base, Texas
- CH2M HILL, 1996, Site Characterization Summary Informal Technical Information Report, NAS Fort Worth JRB, Carswell Field, Texas
- The Earth Technology Corporation, 1993, Basewide Environmental Baseline Survey, Carswell Air Force Base, Texas
- U S. Air Force Occupational and Environmental Health Laboratory, Human Services Division, 1989, Hazardous Waste Technical Assistance Survey, Carswell AFB, Texas

The following documents regarding wastes currently stored at WAAs were provided by TNRCC:

- Texas Natural Resource Conservation Commission, 1995, Notice of Registration, Industrial and Hazardous Waste, Solid Waste Registration Number: 65004, EPA Id: TX0571924042
- Texas Natural Resource Conservation Commission, 1999, Notice of Registration, Industrial and Hazardous Waste, Solid Waste Registration Number: 65004, EPA Id: TX0571924042

Upon review of these documents, it was determined that the neither the satellite accumulation areas nor the permitted facility/DRMO identified in these listings correspond to the WAAs under investigation

The types and quantities of wastes potentially stored at each SWMU/AOC, have been included in Table 1 to provide justification of a shorter list of analyses proposed for the following sites:

- SWMU 5 (Waste Accumulation Area (WAA) 1627/Building 1628)
- SWMU 6 (Building 1628 Washrack and Drain)
- SWMU 11 (WAA 1618/Buildings 1617 and 1619)
- SWMU 12 (WAA 1602/Building 1602)
- SWMU 16 (WAA 1059/Building 1060)
- SWMU 31 (WAA 1050/Building 1050)
- SWMU 32 (WAA 1415/Building 1410)
- SWMU 33 (WAA 1436/Building 1420)
- SWMU 34 (WAA 1194/Building 1194)
- SWMU 36 (WAA 1191/Building 1191)
- SWMU 39 (WAA 1641/Building 1643)
- SWMU 42 (WAA 1413/Building 1414)
- SWMU 51 (WAA 1187 and 1189/Building 1190)

- SWMU 61 (WAA 1319/Building 1320)
- AOC 6 (RV Parking Area)
- AOC 15 (Building 1190 Storage Shed)

Table 1 provides a summary of the materials handled or potentially handled at each of the subject sites along with proposed analyses for each site. Based on your concurrence with this information, the Air Force will prepare Revised Final WPs separating the investigation into a two-phased approach. Soil sampling will be conducted in the first phase and groundwater sampling will be conducted in the second phase only at sites where soil contamination is identified The revised plans will reduce the Appendix IX list of analyses previously proposed in the Final WPs to the analyses proposed in Table 1. The proposed sampling locations and depth intervals will remain the same. Groundwater samples will be analyzed for constituents that show evidence of a release to the environment based on the results of soil investigations at the subject sites. The field effort for this RFI is scheduled to begin in early May. Your prompt response to these proposed changes would be greatly appreciated.

Please call me with any questions or comments at 210/536-5290.

Sincerely,

Joseph R. Dunkle
Remedial Program Manager
NAS Fort Worth JRB

Attachment (Table 1)
cc: Mr. Mike Dodyk
HQ AFCEE/ERD
6560 White Settlement Road
Fort Worth, TX 76114

Mr. Todd Harrah
Unitec, Inc.
3202 2nd Street, Building 538
Brooks AFB, TX 78235

Table 1
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 5	Building 1628 - Corrosion Control Shop AGE Maintenance Shop	Approx. 1982 - Present	PD-680 (Type II) (petroleum naptha solvent)(660 gal/yr) -drummed JP-4 (2,500 gal/yr) - drummed Synthetic oil (150 gal/yr) - drummed 7808 engine oil (1,000 gal/yr) - 500-gallon bowser Hydraulic, transmission, and brake fluids (120 gal/yr) - bowser Antifreeze (60 gal/yr) - drummed Paints and thinners (toluol, MEK, isopropanol, naptha, xylene) (120 gal/yr) - drummed Paint stripper (methylene chloride, toluene)(110 gal/yr) - drummed Spent lead acid batteries (unspecified amount) - pallet Battery acid (unspecified amount) - DRMO Mean Green Soap (aircraft soap) (660 gal/yr) - OWS MEK (12 gal/yr) - used in process	TPH (TX1005) Soil pH (SW9045) Ethylene Glycol (SW8015) Appendix IX. VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 6	Building 1628 - Washrack and Drain	1979 - Approx. 1990	Mean Green Soap (aircraft soap) (660 gal/yr) - OWS PD-680 (Type II) (petroleum naptha solvent)(300 gal/yr) - OWS Wastewater containing fractions of: JP-4, waste paints and thinners, hydraulic fluids, engine oil (unspecified amount) - OWS May have received surface runoff from SWMU 5: PD-680 (petroleum naptha solvent)(Type II) (660 gal/yr) - drummed JP-4 (2,500 gal/yr) - drummed Synthetic oil (150 gal/yr) - drummed 7808 engine oil (1,000 gal/yr) - 500 gallon bowser Hydraulic, transmission, and brake fluids (120 gal/yr) - bowser Antifreeze (60 gal/yr) - drummed Paints and thinners (toluol, MEK, isopropanol, naptha, xylene)(120 gal/yr) - drummed Paint stripper (methylene chloride, toluene)(110 gal/yr) - drummed Spent lead acid batteries (unspecified) - pallet Battery acid (unspecified amt) - DRMO Mean Green Soap (aircraft soap) (660 gal/yr) - OWS MEK (12 gal/yr) - used in process	TPH (TX1005) Soil pH (SW9045) Ethylene Glycol (SW8015) Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 11	Building 1617 and 1619 Paint Shop Electronics Shop	Approx. 1982 - Present	Waste paints: Polyurethane (120 gal/yr) - drummed Enamel (60 gal/yr) - drummed Thinners (toluol, MEK, isopropanol, naptha, xylene)(120 gal/yr) - drummed Sodium persulfate solution (96 gal/yr) - drummed Spent etchant, lacquer thinner/ink residue (unspecified amount) - (unspecified container)	Soil pH (SW9045) Appendix IX· VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 12	Building 1602 - Propulsion Shop	Approx 1982 – 1990	Waste JP-4 (84 gal/yr) - drummed 7808 engine oil (84 gal/yr) - drummed PD-680 (Type II)(petroleum naptha solvent) (60 gal/yr) - drummed	TPH (TX1005) Appendix IX VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 16	Building 1060 - Corrosion Control Shop Building 1050 - Pneudraulics Shop	Approx 1982 – 1990	Surface stripper (36 gal/yr) - drummed Hot tank stripper (640 gal/yr) - drummed Paint remover (methylene chloride, toluene)(36 gal/yr) - drummed Hydrofluoric acid (1.5 gal/yr) - neutralized, down drain Alodine (acid) (120 gal/yr) - neutralized, down drain Aircraft soap (120 gal/yr) - drummed MEK (240 gal/yr) - drummed Waste polyurethane paint (600 gal/yr) - drummed Rags contaminated with polyurethane paint - drummed Spent bead blasting media (unspecified amount) - drummed Hydraulic fluid (120 gal/yr) - drummed PD-680 (Type II)(petroleum naptha solvent)(1200 gal/yr) - drummed	Soil pH (SW9045) Appendix IX· VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 31	Building 1050 - Pneudraulics Shop Building 1055 - Fire Control Shop	1955-1990	Waste hydraulic fluid and oil (120 gal/yr) - drummed PD-680 (Type II) (petroleum naptha solvent)(150 gal/yr) - drummed MEK (unspecified amount) - unspecified container TCE (unspecified amount) - unspecified container Perchloroethylene (unspecified amount) - unspecified container SE-377C (solvent) contaminated with cadmium (unspecified amount) - unspecified container Citri-Kleen (solvent) (unspecified amount) - unspecified container Silicone damping fluid contaminated with Freon 113 (unspecified amount) - unspecified container	TPH (TX1005) Appendix IX: VOCs/Freon 113 (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 32	Building 1410 - Battery Shop Engine Shop Bearing Shop Wheel and Tire Shop	Early 1940s - Present	7808 engine oil (550 gal/yr) - drummed PD-680 (Type II) (petroleum naptha solvent)(300 gal/yr) - drummed JP-4 (125 gal/yr) - fire training area Multi-sheen (stripper) (60 gal/yr) - down drain Hydraulic fluid (24 gal/yr) - bowser Calibrating fluid (unspecified amount) - 500-gallon bowser Carbon remover (cresylic acid) (unspecified amount - drummed Fingerprint remover (degreaser) (unspecified amount) - drummed Battery electrolyte (500 gal/yr) - neutralized, sanitary sewer TCE (unspecified amount) - unspecified container Possible spent batteries (unspecified amount) - unspecified container SE-377E (solvent) (unspecified amount) - unspecified container	TPH (TX1005) Soil pH (SW9045) Phenols (SW8041) Appendix IX VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 33	Building 1420 - MMS Equipment Maintenance Shop Possibly received waste from Buildings 1403, 1405, and 1434 Corrosion Control Shops	Approx 1982 - Present	PD-680 (Type II)(petroleum naptha solvent) (240 gal/yr) - drummed Brake and hydraulic fluids (240 gal/yr) - drummed MEK (0.5 gal/yr) - used in process Soap (120 gal/yr) - down drain Possibly received waste from Building 1434 Thinner (toluol, MEK, isopropanol, naptha, xylene)(15 gal/yr) - drummed Waste paints and solvents (1500 gal/yr) - unspecified container Strippers (methylene chloride, toluene) (unspecified amount) - unspecified container	TPH (TX1005) Appendix IX VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

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Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 34	Building 1194 - Vehicle Refueling Shop	Unknown startup date-1990	Waste engine oils (240 gal/yr) - 300-gallon bowser Transmission fluid (24 gal/yr) - drummed Antifreeze (70 gal/yr) - drummed PD-680 (Type II) (petroleum naptha solvent) (100 gal/yr) - drummed Aircraft cleaning soap (120 gal/yr) - OWS JP-4 (5000 gal/yr) - fire training pit Safety-Kleen (solvent) (300 gal/yr) - tank serviced by contractor	TPH (TX1005) Ethylene Glycol (SW8015) Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 36	Building 1191 - Vehicle Maintenance Shop Allied Trades Shop Building 1425 - Fire Truck Maintenance Shop Building 1065 - Vehicle Maintenance Shop	Approx. 1982 - Present	7808 engine oil (1800 gal/yr) - unspecified container Battery acid (300 gal/yr) - DRMO Leaded and unleaded waste oil (1800 gal/yr) - drummed Waste automotive fuel (240 gal/yr) - drummed Antifreeze (600 gal/yr) - drummed Waste paints and thinners (toluol, MEK, isopropanol, naptha, xylene) (120 gal/yr) - unspecified container Waste oils and transmission fluids (3000 gal/yr) - drummed PD-680 (Type II) (petroleum naptha solvent) (150 gal/yr) - drummed Mogas (75 gal/yr) - drummed Hydraulic fluids (384 gal/yr) - drummed Safety-Kleen (solvent) (500 gal/yr) - tank serviced by contractor	TPH (TX1005) Soil pH (SW9045) Ethylene Glycol (SW8015) Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
SWMU 39	Building 1643 - Phase Dock Pheudraulics Shop Wheel and Tire Shop (all aircraft maintenance)	Approx. 1982 - 1990	PD-680 (Type II) (petroleum naptha solvent) (1420 gal/yr) - bowser, drummed JP-4 (600 gal/yr) - drummed Waste oil (12 gal/yr) - 200-gallon waste oil trailer Hydraulic fluid (192 gal/yr) - drummed, bowser Stripper (methylene chloride, toluene) (100 gal/yr) - drummed Mean Green Soap (12 gal/yr) - OWS Carbon remover (cresylic acid) (8 gal/yr) - OWS, used in process	TPH (TX1005) Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 42	Building 1414 - AGE Shop NDI Shop Possibly received waste from Building 1434 - Corrosion Control	Approx 1982 - 1990	Waste PD-680 (Type II) (petroleum naptha solvent) (960 gal/yr) - drummed JP-4 (1500 gal/yr) - drummed Mogas (600 gal/yr) - drummed Diesel (1980 gal/yr) - drummed Waste oils (3300 gal/yr) - 500-gallon bowser Synthetic oils (1800 gal/yr) - drummed Hydraulic fluids (660 gal/yr) - drummed Antifreeze (960 gal/yr) - drummed Aircraft soap (1800 gal/yr) - sanitary sewer CitiKleen (solvent) (660 gal/yr) - OWS Die penetrant (aeromatic naptha, ethoxylated octophenol, biphenyl octyl phosphate, fluorescent dye) (220 gal/yr) - drummed Emulsifier (petroleum sulfonate, paraffin oil, ethoxylated octyenal, butyl zyethyl phosphate) (220 gal/yr) - drummed Developer (sodium chromate) (100 gal/yr) - sanitary sewer Fixer (ammonium thiosulfate, sodium thiosulfate, N-methylpyrrolidine) (200 gal/yr) - silver recovery, sanitary sewer 1,1,1-trichloroethane (unspecified amount) - drummed Possibly received waste from Building 1434 Thinner (toluol, MEK, isopropanol, naptha, xylene)(15 gal/yr) - drummed Waste paints and solvents (1500 gal/yr) - unspecified container Strippers (methylene chloride, toluene) (unspecified amount) - unspecified container	TPH (TX1005) Ethylene Glycol (SW8015) Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
SWMU 51	WAA 1189 and 1187 Served as central waste holding area.	Approx. 1982 - 1990	Received unspecified quantities of various wastes from throughout the base, stored in three separate areas throughout the SWMU. Cluster 1· empty drums which may have contained traces of solvents, fuels, oils used on base Cluster 2: wastewater from facility monitoring well - drummed Cluster 3 PD-680, xylene - drummed	Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Organochlorine Pesticides/PCBs (SW8081/8082) Organophosphorus Pesticides (SW8141) Chlorinated Herbicides (SW8151) Dioxins/Furans (SW8280) Cyanide (SW9010A/SW9012) Sulfide (SW9030) Trace Elements (Metals)(SW6010A/7000) Mercury (SW7470A/7471A)
SWMU 61	Building 1320 - Power Production Maintenance Facility	Approx. 1982 - 1990	Waste gasoline and diesel fuel (108 gal/yr) - drummed 7808 engine oil (156 gal/yr) - bowser PD-680 (Type II) (108 gal/yr) - drummed Antifreeze (156 gal/yr) - drummed Battery acid (360 gal/yr) - DRMO Hard material similar to roofing tar (unspecified amount) - bucket	TPH (TX1005) Soil pH (SW9045) Ethylene Glycol (SW8015) Appendix IX VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)
AOC 6	RV Parking Area	Unknown startup date-Present	The following wastes may have been stored or utilized during maintenance activities on vehicles stored within this area: Waste oils (unspecified amount) - unspecified container Waste fuels (unspecified amount) - unspecified container Antifreeze (unspecified amount) - unspecified container Paints/thinners (unspecified amount) - unspecified container Solvents/cleaners (unspecified amount) - unspecified container	TPH (TX1005) Ethylene Glycol (SW8015) Appendix IX VOCs (SW8260B) SVOCs (SW8270C) Metals/Mercury(SW6010/7000)

Table 1 (continued)
Current SWMU Summary Table
NAS Fort Worth JRB, Texas

SWMU/ AOC	Waste Source:	Operational Period	Materials Received	Analyses
AOC 15	Building 1190 - storage shed Area may have received runoff from SWMU 51	Unknown startup date- 1990	PD-680 (unspecified quantity) - unspecified container Xylene (unspecified quantity) - unspecified container Possible runoff from SWMU 51 - central waste holding area	Appendix IX: VOCs (SW8260B) SVOCs (SW8270C) Organochlorine Pesticides/PCBs (SW8081/8082) Organophosphorus Pesticides (SW8141) Chlorinated Herbicides (SW8151) Dioxins/Furans (SW8280) Cyanide (SW9010A/SW9012) Sulfide (SW9030) Trace Elements (Metals)(SW6010A/7000) Mercury (SW7470A/7471A)

Sources:
A.T Kearney 1989, RCRA Facility Assessment, PR/VSI Report, Carswell Air Force Base, Fort Worth, Texas
CH2M HILL, 1984, Installation Restoration Program Records Search for Carswell Air Force Base, Texas
Texas Natural Resource Conservation Commission, 1995, Notice of Registration, Industrial and Hazardous Waste, Solid Waste Registration Number: 65004, EPA Id: TX0571924042
Texas Natural Resource Conservation Commission, 1999, Notice of Registration, Industrial and Hazardous Waste, Solid Waste Registration Number: 65004, EPA Id: TX0571924042
The Earth Technology Corporation, 1993, Basewide Environmental Baseline Survey, Carswell Air Force Base, Texas
U.S Air Force Occupational and Environmental Health Laboratory, Human Services Division, 1989, Hazardous Waste Technical Assistance Survey, Carswell AFB, Texas

TAB

Appendix B

APPENDIX B

SURVEY DATA

HYDROGEOLOGIC, INC.
Prime Contract No. F41624-95-D-8005
Subcontract AFC001I

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SUBCONTRACTOR
Baird, Hampton Brown, Inc.

DESCRIPTION	SOIL BORING	NORTHING	EASTING	GROUND ELEVATION
SWMU 16	BHGLSWMU16002	6963564.98	2298977.98	602.03
SWMU 16	BHGLSWMU16003	6963513.19	2298960.98	602.02
SWMU 16	BHGLSWMU16004	6963488.91	2298912.70	602.10
SWMU 16	BHGLSWMU16001	6963546.80	2298929.15	602.72
SWMU 33	BHGLSWMU33001	6966725.26	2297646.25	608.95
SWMU 33	BHGLSWMU33002	6966742.12	2297660.22	607.85
SWMU 33	BHGLSWMU33003	6966752.14	2297647.74	607.97
SWMU 34	BHGLSWMU34002	6965060.52	2299352.53	590.84
SWMU 34	BHGLSWMU34001	6964975.57	2299355.37	588.25
SWMU 39	BHGLSWMU39001	6968450.54	2298145.28	601.77
SWMU 42	BHGLSWMU42001	6966237.36	2298118.65	606 01
SWMU 42	BHGLSWMU42002	6966260.97	2298092.72	606.82
SWMU 42	BHGLSWMU42003	6966281.15	2298086.66	606.91
SWMU 42	BHGLSWMU42004	6966289.71	2298092.82	606.68
SWMU 51	BHGLSWMU51001	6964402.47	2299196.65	593.23
SWMU 51	BHGLSWMU51002	6964433 25	2299181.15	593.53
SWMU 51	BHGLSWMU51003	6964405.54	2299223.78	593.19
SWMU 51	BHGLSWMU51004	6964430.66	2299219.13	593.34
SWMU 51	BHGLSWMU51005	6964394.77	2299130.28	592.62
SWMU 51	BHGLSWMU51006	6964363.91	2299130.92	591.70
SWMU 51	BHGLSWMU51007	6964359.73	2299157.79	591.42
SWMU 51	BHGLSWMU51008	6964459.09	2299168.79	593.47
SWMU 51	BHGLSWMU51009	6964468.74	2299180.91	590.32
AOC 6	BHGLAOC006001	6963688.18	2300851.29	571.98
AOC 6	BHGLAOC006002	6963777.77	2300816.48	572.09
AOC 6	BHGLAOC006003	6963742.81	2300931.47	572 05
AOC 6	BHGLAOC006004	6963688.43	2300669.93	572.75
AOC 15	BHGLAOC015001	6964453.32	2299216.17	593.26

Note: All coordinates values are NAD83 State Plane Coordinates, Texas North Central Zone, Feet.

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TAB

Appendix C

APPENDIX C

ANALYTICAL DATA SUMMARY TABLES

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW6010	Antimony	3 7 U	0 4 F	3 9 U	3 6 U	3 6 U
SW6010	Arsenic	4 1	4 9	2.5 F	2 F	2 F
SW6010	Barium	66.4	75 5	67.4	45.8	40 9
SW6010	Beryllium	0 67	0 62	0 61	0.29	0 26
SW6010	Cadmium	0 22 F	0 34 F	0.11 F	0 15 F	0.14 F
SW6010	Chromium (total)	15.5	14 4	11 4	7.1	5 6 F
SW6010	Cobalt	4 3 F	4.1 F	5 1	1 7 F	1 7 F
SW6010	Copper	7.7	9 4	7.6 F	6.8 F	2 8 F
SW6010	Lead	17.9	19 1	9 3	6 2	4 3
SW6010	Nickel	10.5	10.5	10 1	3 5 F	3 1 F
SW6010	Tin	29 2 U	4 9 F	31.3 U	4.6 F	28 5 U
SW6010	Vanadium	32.9	25 6	21.6 F	12 F	12 F
SW6010	Zinc	27.5	25.7	23 1 F	9 9 F	9 9 F
SW7471	Mercury	0 04 U	0.07	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0.99 U	0 23 UJ	0 23 UJ	0.21 UJ	0 21 UJ
SW7761	Silver	0.13 U	0.15 U	0.15 UJ	0.29 J	0 14 U
SW7841	Thallium	0 66 UJ	0.77 UJ	3.8 U	3 3 UJ	0 71 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 004 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 006 U	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0.003 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 007 U	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	1,1-Dichloroethane	0.003 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0.007 U	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	1,2,3-Trichloropropane	0 007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0.007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 004 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 004 U	0.003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0.007 U	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0.004 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 003 U	0 002 U	0 002 U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 007 U	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	2-Hexanone	0 007 U	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Acetone	0 007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Acetonitrile	0 055 U	0 043 U	0 042 U	0 04 U	0 04 U
SW8260	Acrolein	0 14 U	0.11 U	0 1 U	0.1 U	0.1 U
SW8260	Acrylonitrile	0.055 U	0 043 U	0 042 U	0.04 U	0 04 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

641 201

Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW8260	Allyl chloride (3-chloropropene)	0 014 U	0 011 U	0 01 U	0 01 U	0 01 U
SW8260	Benzene	0 003 U	0.002 U	0 002 U	0.002 U	0.002 U
SW8260	Bromodichloromethane	0 006 U	0 004 U	0.004 U	0 004 U	0 004 U
SW8260	Bromoform	0 007 U	0 005 U	0 005 U	0.005 U	0.005 U
SW8260	Bromomethane	0.007 U	0.005 U	0.005 U	0.005 U	0 005 U
SW8260	Carbon disulfide	0.007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0.007 U	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Chlorobenzene	0 003 U	0 002 U	0 002 U	0.002 U	0.002 U
SW8260	Chloroethane	0.007 U	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	Chloroform	0 003 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0.007 U	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0 007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0 004 U	0.003 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0 007 U	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0 007 R	0 005 R	0 005 R	0.005 R	0 005 R
SW8260	Ethyl methacrylate	0.007 U	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Ethylbenzene	0.002 F	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 007 U	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Isobutanol	0.28 U	0 21 U	0.21 U	0.2 U	0 2 U
SW8260	m- & p-Xylene (sum of isomers)	0.011	0 002 F	0.005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 007 U	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl methacrylate	0 007 U	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Methylacrylonitrile	0.007 U	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Methylene chloride	0.003 U	0.002 U	0 002 U	0.002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.007 F	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Pentachloroethane	0 007 U	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 028 U	0.021 U	0 021 U	0 02 U	0 02 U
SW8260	Styrene	0 003 U	0 002 U	0 002 U	0 002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0 007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Toluene	0 007 U	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	trans-1,3-Dichloropropene	0 007 U	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0.007 U	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 007 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Trichlorofluoromethane	0 006 U	0.004 U	0 004 U	0 004 U	0 004 U
SW8260	Vinyl acetate	0 007 U	0 005 U	0.005 U	0 005 U	0 005 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW8260	Vinyl chloride	0 007 U	0.005 U	0 005 U	0 005 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0.38 U	0.42 U	0 38 U	0.38 U	0 38 U
SW8270	1,2-Dichlorobenzene	0.38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 5 U	1 7 U	1 5 U	1.5 U	1.5 U
SW8270	1,3-Dichlorobenzene	0 38 U	0 42 U	0.38 U	0.38 U	0.38 U
SW8270	1,3-Dinitrobenzene	0.38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	1,4-Dichlorobenzene	0.38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1.7 U	1 5 U	1 5 U	1 5 U
SW8270	1,4-Naphthoquinone	3 8 U	4 2 U	3 8 U	3.8 U	3 8 U
SW8270	1-Naphthylamine	0.75 U	0 85 U	0.76 U	0.76 U	0 76 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	2,4,5-Trichlorophenol	1 9 U	2 1 U	1 9 U	1 9 U	1.9 U
SW8270	2,4,6-Trichlorophenol	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	2,4-Dichlorophenol	0.38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	2,4-Dimethylphenol	0.38 U	0.42 U	0.38 U	0 38 U	0 38 U
SW8270	2,4-Dinitrophenol	1.9 U	2.1 U	1.9 U	1.9 U	1 9 U
SW8270	2,4-Dinitrotoluene	0.38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	2,6-Dichlorophenol	0.75 U	0 85 U	0 76 U	0.76 U	0.76 U
SW8270	2,6-Dinitrotoluene	0 38 U	0.42 U	0.38 U	0.38 U	0 38 U
SW8270	2-Acetylaminofluorene	0.75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.75 U	0.85 U	0 76 U	0.76 U	0.76 U
SW8270	2-Chloronaphthalene	0.38 U	0 42 U	0.38 U	0.38 U	0 38 U
SW8270	2-Chlorophenol	0 38 U	0.42 U	0 38 U	0.38 U	0 38 U
SW8270	2-Methylnaphthalene	0 38 U	0.42 U	0.38 U	0.38 U	0 38 U
SW8270	2-Nitroaniline	1.9 U	2 1 U	1.9 U	1.9 U	1 9 U
SW8270	2-Nitrophenol	0.38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	2-Picoline (alpha-picoline)	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0 75 U	0.85 U	0.76 U	0 76 U	0.76 U
SW8270	3,3'-Dimethylbenzidine	1.9 U	2.1 U	1.9 U	1.9 U	1.9 U
SW8270	3-Methylcholanthrene	0.38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	3-Nitroaniline	1.9 U	2 1 U	1.9 U	1.9 U	1.9 U
SW8270	4,6-Dinitro-2-methylphenol	1.9 U	2.1 U	1 9 U	1.9 U	1 9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	4-Bromophenyl phenyl ether	0 38 U	0.42 U	0 38 U	0.38 U	0.38 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW8270	4-Chloro-3-methylphenol	0 75 U	0 85 U	0.76 U	0 76 U	0 76 U
SW8270	4-Chloroaniline	0 75 U	0 85 U	0.76 U	0 76 U	0 76 U
SW8270	4-Chlorophenyl phenyl ether	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	4-Nitroaniline	1 9 U	2 1 U	1 9 U	1 9 U	1 9 U
SW8270	4-Nitrophenol	1.9 U	2.1 U	1 9 U	1 9 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	1.9 U	2 1 U	1.9 U	1 9 U	1 9 U
SW8270	5-Nitro-o-toluidine	0 75 U	0 85 U	0.76 U	0 76 U	0 76 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	Acenaphthene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Acenaphthylene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Acetophenone	0.75 U	0 85 U	0 76 U	0 76 U	0.76 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.9 U	2 1 U	1 9 U	1 9 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0.38 U	0 42 U	0 38 U	0.38 U	0.38 U
SW8270	Anthracene	0.38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Aramite (total)	0 75 U	0.85 U	0.76 U	0 76 U	0 76 U
SW8270	Benzo(a)anthracene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Benzo(a)pyrene	0.38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Benzo(b)fluoranthene	0 38 U	0.42 U	0.38 U	0 38 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 38 U	0.42 U	0.38 U	0.38 U	0 38 U
SW8270	Benzoic acid	1.9 U	2 1 U	1 9 U	1.9 U	1 9 U
SW8270	Benzyl alcohol	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Benzyl butyl phthalate	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	bis(2-Chloroethoxy)methane	0 38 U	0.42 U	0.38 U	0 38 U	0 38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	bis(2-Ethylhexyl)phthalate	0.38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Chlorobenzilate	0 38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	Chrysene	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Dibenz(a,h)anthracene	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Dibenzofuran	0.38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Diethyl phthalate	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Dimethyl phthalate	0.38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	Di-n-butyl phthalate	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Di-n-octyl phthalate	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Dinoseb	0 75 U	0 85 U	0.76 U	0.76 U	0 76 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW8270	Diphenylamine	0 38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	Ethyl methanesulfonate	0 75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	Fluoranthene	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Fluorene	0 38 U	0 42 U	0 38 U	0 38 U	0.38 U
SW8270	Hexachlorobenzene	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	Hexachlorobutadiene	0 38 U	0 42 U	0.38 U	0.38 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	Hexachloroethane	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachlorophene	5 6 U	6.4 U	5.7 U	5 7 U	5 7 U
SW8270	Hexachloropropene	1 9 U	2.1 U	1.9 U	1 9 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Isophorone	0 38 U	0 42 U	0.38 U	0.38 U	0 38 U
SW8270	Isosafrole	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0.38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	Methapyrilene	0 94 U	1 1 U	0 94 U	0.95 U	0.95 U
SW8270	Methyl methanesulfonate	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	Naphthalene	0.38 U	0 42 U	0.38 U	1 2 J	1 2 J
SW8270	Nitrobenzene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Nitrosomethylethylamine	0 38 U	0 42 U	0.38 U	0.38 U	0 38 U
SW8270	N-Nitrosodiethylamine	0 75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	N-Nitrosodimethylamine	0.75 U	0.85 U	0.76 U	0.76 U	0.76 U
SW8270	N-Nitrosodi-n-butylamine	0 38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0 38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	N-Nitrosomorpholine	0 75 U	0 85 U	0 76 U	0 76 U	0 76 U
SW8270	N-Nitrosopiperidine	0.38 U	0 42 U	0.38 U	0.38 U	0.38 U
SW8270	N-Nitrosopyrrolidine	0.75 U	0 85 U	0.76 U	0 76 U	0 76 U
SW8270	o-Cresol (2-methylphenol)	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	o-Toluidine	0 75 U	0 85 U	0 76 U	0.76 U	0 76 U
SW8270	p-Dimethylaminoazobenzene	0.75 U	0 85 U	0.76 U	0.76 U	0 76 U
SW8270	Pentachlorobenzene	0.38 U	0 42 U	0.38 U	0 38 U	0 38 U
SW8270	Pentachloronitrobenzene	0 38 U	0 42 U	0 38 U	0 38 U	0 38 U
SW8270	Pentachlorophenol	1 9 U	2 1 U	1 9 U	1 8 U	0 35 F
SW8270	Phenacetin	0.38 U	0 42 U	0 38 U	0 38 U	0.38 U
SW8270	Phenanthrene	0 38 U	0 42 U	0 38 U	0.38 U	0 38 U
SW8270	Phenol	0 38 U	0 42 U	0 38 U	0 38 U	0.38 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLSWMU1601-00'	BHGLSWMU1601-05'	BHGLSWMU1601-10'	BHGLSWMU1601-15'	BHGLSWMU1601-15' Duplicate
SW8270	p-Phenylenediamine	1 5 U	1.7 U	1.5 U	1 5 U	1.5 U
SW8270	Pronamide	0 38 U	0.42 U	0 38 U	0 38 U	0 38 U
SW8270	Pyrene	0.38 U	0.42 U	0.38 U	0 38 U	0 38 U
SW8270	Pyridine	0.75 U	0 85 U	0 76 U	0.76 U	0 76 U
SW8270	Safrole	0.38 U	0 42 U	0 38 U	0.38 U	0.38 U
SW9045	PH	8	8 1	8.3	8 1	8 1

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW6010	Antimony	4 U	4.6 U	3 6 U	3.6 U	3 7 U
SW6010	Arsenic	1 6 F	4 8	3.6	3.2 F	0 3 F
SW6010	Barium	43 8	73 8	53 6	47.9	93 1
SW6010	Beryllium	0 27	0.49	0.59	0 42	0 23
SW6010	Cadmium	0 09 F	0 35 F	0 19 F	0 07 F	0 15 F
SW6010	Chromium (total)	5 6 F	12 9	13	7 7	7 2 F
SW6010	Cobalt	1 6 F	4 F	3.6 F	3 3 F	1 6 F
SW6010	Copper	4 1 F	8 7 F	5 4 F	4 4 F	1.8 F
SW6010	Lead	5 6	17 8	7.7	5 4	4 3
SW6010	Nickel	3.7 F	8.8 F	8 8	6 6 F	3 1 F
SW6010	Tin	32 1 U	37.1 U	28 5 U	29 1 U	29 5 U
SW6010	Vanadium	14 9 F	23 9 F	24 3	14 6 F	8 4 F
SW6010	Zinc	12 2 F	30 2	21 8	14.8 F	11 6 F
SW7471	Mercury	0.04 U	0 05 U	0 04 U	0 04 U	0 04 U
SW7740	Selenium	0 24 UJ	0 28 U	0 23 UJ	0 23 UJ	1.1 U
SW7761	Silver	0.16 UJ	0 19 UJ	0 15 UJ	0 15 UJ	0.14 U
SW7841	Thallium	4 U	0 94 UJ	0 76 UJ	0 77 UJ	3 6 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 004 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 006 U	0 004 U	0.004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0.003 U	0 002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0.004 U	0 007 U	0 005 U	0.005 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0.003 U	0.002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0 004 U	0 007 U	0 005 U	0.005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 U	0 004 U	0.003 U	0 003 U	0.003 U
SW8260	1,2-Dichloroethane	0 003 U	0 004 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 004 U	0.007 U	0.005 U	0.005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 004 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 003 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	2-Hexanone	0 004 U	0.007 U	0 005 U	0.005 U	0 005 U
SW8260	Acetone	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Acetonitrile	0 035 U	0.055 U	0.04 U	0 039 U	0 044 U
SW8260	Acrolein	0 089 U	0 14 U	0.099 U	0 098 U	0 11 U
SW8260	Acrylonitrile	0 035 U	0.055 U	0.04 U	0 039 U	0 044 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW8260	Allyl chloride (3-chloropropene)	0 009 U	0 014 U	0.01 U	0.01 U	0 011 U
SW8260	Benzene	0 002 U	0 003 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0.006 U	0 004 U	0 004 U	0.004 U
SW8260	Bromoform	0 004 U	0 007 U	0.005 U	0 005 U	0 005 U
SW8260	Bromomethane	0 004 U	0.007 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon disulfide	0 004 U	0.007 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0 004 U	0 007 U	0 005 U	0.005 U	0.005 U
SW8260	Chlorobenzene	0 002 U	0.003 U	0 002 U	0 002 U	0.002 U
SW8260	Chloroethane	0 004 U	0.007 U	0 005 U	0.005 U	0 005 U
SW8260	Chloroform	0 002 U	0.003 U	0.002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0.004 U	0 007 U	0 005 U	0.005 U	0 005 U
SW8260	Dibromochloromethane	0 003 U	0 004 U	0.003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0.004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0.004 R	0 007 R	0 005 R	0 005 R	0 005 R
SW8260	Ethyl methacrylate	0 004 U	0 007 U	0 005 U	0 005 U	0.005 U
SW8260	Ethylbenzene	0 003 U	0 004 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 004 U	0 007 U	0.005 U	0 005 U	0 005 U
SW8260	Isobutanol	0 18 U	0 28 U	0 2 U	0 2 U	0 22 U
SW8260	m- & p-Xylene (sum of isomers)	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 004 U	0 007 U	0.005 U	0.005 U	0 005 U
SW8260	Methyl methacrylate	0 004 U	0.007 U	0 005 U	0 005 U	0.005 U
SW8260	Methylacrylonitrile	0 004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Methylene chloride	0.002 U	0.003 U	0 002 U	0.002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 004 U	0 007 U	0 005 U	0.005 U	0.005 U
SW8260	Pentachloroethane	0.004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0.018 U	0 028 U	0 02 U	0 02 U	0.022 U
SW8260	Styrene	0.002 U	0.003 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0.004 U	0 007 U	0 005 U	0 005 U	0 005 U
SW8260	Toluene	0 004 U	0 007 U	0 005 U	0 005 U	0.005 U
SW8260	trans-1,3-Dichloropropene	0 004 U	0.007 U	0.005 U	0.005 U	0.005 U
SW8260	trans-1,4-Dichloro-2-butene	0 004 U	0.007 U	0 005 U	0.005 U	0 005 U
SW8260	Trichloroethene (TCE)	0.004 U	0 007 U	0 005 U	0.005 U	0 005 U
SW8260	Trichlorofluoromethane	0 004 U	0 006 R	0 004 U	0.004 U	0 004 U
SW8260	Vinyl acetate	0 004 U	0.007 U	0 005 U	0.005 U	0.005 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW8260	Vinyl chloride	0 004 U	0.007 U	0.005 U	0 005 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0 39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	1,2-Dichlorobenzene	0 39 U	0 47 U	0.38 U	0 38 U	0 38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 6 U	1 9 U	1.5 U	1 5 U	1 5 U
SW8270	1,3-Dichlorobenzene	0 39 U	0 47 U	0.38 U	0.38 U	0 38 U
SW8270	1,3-Dinitrobenzene	0 39 U	0.47 U	0.38 U	0.38 U	0 38 U
SW8270	1,4-Dichlorobenzene	0.39 U	0 47 U	0.38 U	0 38 U	0 38 U
SW8270	1,4-Dioxane (p-dioxane)	1.6 U	1.9 U	1.5 U	1.5 U	1.5 U
SW8270	1,4-Naphthoquinone	3 9 U	4 7 U	3 8 U	3.8 U	3 8 U
SW8270	1-Naphthylamine	0.79 U	0.93 U	0 76 U	0.76 U	0.76 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.39 U	0 47 U	0.38 U	0.38 U	0 38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	2,4,5-Trichlorophenol	2 U	2 3 U	1 9 U	1.9 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0.39 U	0.47 U	0.38 U	0.38 U	0 38 U
SW8270	2,4-Dichlorophenol	0.39 U	0 47 U	0 38 U	0 38 U	0.38 U
SW8270	2,4-Dimethylphenol	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	2,4-Dinitrophenol	2 U	2 3 U	1 9 U	1 9 U	1 9 U
SW8270	2,4-Dinitrotoluene	0.39 U	0 47 U	0.38 U	0.38 U	0 38 U
SW8270	2,6-Dichlorophenol	0 79 U	0 93 U	0.76 U	0 76 U	0 76 U
SW8270	2,6-Dinitrotoluene	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	2-Acetylaminofluorene	0.79 U	0.93 U	0 76 U	0 76 U	0 76 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.79 U	0 93 U	0.76 U	0.76 U	0 76 U
SW8270	2-Chloronaphthalene	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	2-Chlorophenol	0 39 U	0.47 U	0 38 U	0 38 U	0.38 U
SW8270	2-Methylnaphthalene	0.39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	2-Nitroaniline	2 U	2 3 U	1 9 U	1 9 U	1 9 U
SW8270	2-Nitrophenol	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	2-Picoline (alpha-picoline)	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0.79 U	0 93 U	0.76 U	0.76 U	0 76 U
SW8270	3,3'-Dimethylbenzidine	2 U	2 3 U	1.9 U	1.9 U	1.9 U
SW8270	3-Methylcholanthrene	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	3-Nitroaniline	2 U	2 3 U	1 9 U	1.9 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	2 U	2.3 U	1.9 U	1 9 U	1 9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.79 U	0 93 U	0.76 U	0.76 U	0 76 U
SW8270	4-Bromophenyl phenyl ether	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW8270	4-Chloro-3-methylphenol	0 79 U	0 93 U	0 76 U	0 76 U	0 76 U
SW8270	4-Chloroaniline	0 79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	4-Chlorophenyl phenyl ether	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	4-Nitroaniline	2 U	2 3 U	1 9 U	1.9 U	1 9 U
SW8270	4-Nitrophenol	2 U	2 3 U	1.9 U	1 9 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	2 U	2 3 U	1 9 U	1 9 U	1 9 U
SW8270	5-Nitro-o-toluidine	0 79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 79 U	0 93 U	0 76 U	0 76 U	0 76 U
SW8270	Acenaphthene	0 39 U	0.18 F	0 38 U	0.38 U	0 38 U
SW8270	Acenaphthylene	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Acetophenone	0 79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	alpha, alpha-Dimethylphenethylamine	2 U	2 3 U	1.9 U	1.9 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	Anthracene	0.39 U	0 28 F	0 38 U	0 38 U	0 38 U
SW8270	Aramite (total)	0 79 U	0 93 U	0.76 U	0.76 U	0 76 U
SW8270	Benzo(a)anthracene	0 39 U	0 94	0 38 U	0 38 U	0 38 U
SW8270	Benzo(a)pyrene	0.39 U	0 66	0.38 U	0.38 U	0.38 U
SW8270	Benzo(b)fluoranthene	0 39 U	1 1	0 38 U	0.38 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0.39 U	0.3 F	0 38 U	0 38 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 39 U	0.53	0 38 U	0 38 U	0 38 U
SW8270	Benzoic acid	2 U	2.3 U	1.9 U	1.9 U	1.9 U
SW8270	Benzyl alcohol	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Benzyl butyl phthalate	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	bis(2-Chloroethoxy)methane	0.39 U	0 47 U	0.38 U	0.38 U	0 38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 39 U	0.47 U	0 38 U	0.38 U	0 38 U
SW8270	bis(2-Ethylhexyl)phthalate	0.39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	Chlorobenzilate	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	Chrysene	0 39 U	1 1	0 38 U	0 38 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0 39 U	0 47 U	0.38 U	0 38 U	0 38 U
SW8270	Dibenz(a,h)anthracene	0.39 U	0 085 F	0 38 U	0.38 U	0 38 U
SW8270	Dibenzofuran	0 39 U	0 19 F	0 38 U	0 38 U	0 38 U
SW8270	Diethyl phthalate	0.39 U	0.47 U	0 38 U	0 38 U	0 38 U
SW8270	Dimethyl phthalate	0.39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Di-n-butyl phthalate	0 39 U	0.47 U	0.38 U	0.38 U	0 38 U
SW8270	Di-n-octyl phthalate	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Dinoseb	0.79 U	0.93 U	0 76 U	0 76 U	0 76 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW8270	Diphenylamine	0.39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Ethyl methanesulfonate	0.79 U	0 93 U	0.76 U	0.76 U	0 76 U
SW8270	Fluoranthene	0 39 U	3 4	0 38 U	0 38 U	0 38 U
SW8270	Fluorene	0.39 U	0 27 F	0 38 U	0.38 U	0 38 U
SW8270	Hexachlorobenzene	0.39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachlorobutadiene	0 39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0.39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachloroethane	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachlorophene	5 9 U	7 U	5 7 U	5 7 U	5 7 U
SW8270	Hexachloropropene	2 U	2 3 U	1 9 U	1 9 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 39 U	0.44 F	0 38 U	0 38 U	0 38 U
SW8270	Isophorone	0.39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Isosafrole	0.39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Methapyrilene	0.99 U	1.2 U	0.96 U	0 94 U	0 95 U
SW8270	Methyl methanesulfonate	0.39 U	0.47 U	0.38 U	0 38 U	0 38 U
SW8270	Naphthalene	0 39 U	0 18 F	0 38 U	0 38 U	0 38 U
SW8270	Nitrobenzene	0.39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Nitrosomethylethylamine	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	N-Nitrosodiethylamine	0.79 U	0 93 U	0 76 U	0 76 U	0 76 U
SW8270	N-Nitrosodimethylamine	0.79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	N-Nitrosodi-n-butylamine	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0.39 U	0 47 U	0.38 U	0 38 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	N-Nitrosomorpholine	0 79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	N-Nitrosopiperidine	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	N-Nitrosopyrrolidine	0 79 U	0 93 U	0 76 U	0.76 U	0 76 U
SW8270	o-Cresol (2-methylphenol)	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	o-Toluidine	0.79 U	0 93 U	0 76 U	0.76 U	0.76 U
SW8270	p-Dimethylaminoazobenzene	0 79 U	0 93 U	0.76 U	0 76 U	0 76 U
SW8270	Pentachlorobenzene	0 39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Pentachloronitrobenzene	0 39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW8270	Pentachlorophenol	2 U	2.3 U	1.9 U	1.9 U	1 9 U
SW8270	Phenacetin	0 39 U	0.47 U	0 38 U	0 38 U	0.38 U
SW8270	Phenanthrene	0 39 U	2 8	0 38 U	0 38 U	0.38 U
SW8270	Phenol	0 39 U	0.47 U	0 38 U	0 38 U	0 38 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1601-20'	BHGLSWMU1602-00'	BHGLSWMU1602-05'	BHGLSWMU1602-10'	BHGLSWMU1602-15'
SW8270	p-Phenylenediamine	1.6 U	1 9 U	1.5 U	1 5 U	1 5 U
SW8270	Pronamide	0.39 U	0 47 U	0 38 U	0 38 U	0 38 U
SW8270	Pyrene	0 39 U	2	0.38 U	0 38 U	0 38 U
SW8270	Pyridine	0 79 U	0 93 U	0.76 U	0 76 U	0 76 U
SW8270	Safrole	0.39 U	0 47 U	0 38 U	0.38 U	0 38 U
SW9045	PH	8.4	8	8 1	8.2	8 5

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW6010	Antimony	4 4 UJ	4 6 UJ	5 1 UJ	4 7 UJ	4 4 UJ
SW6010	Arsenic	4 8 J	4 F	5 J	5 J	4 6 J
SW6010	Barium	75.3	73.3	44 7	44 7	43 6
SW6010	Beryllium	0 75	0 57	0 46	0 46	0 45
SW6010	Cadmium	0 08 F	0 14 F	0 16 F	0.16 F	0 12 F
SW6010	Chromium (total)	12 9 J	10 1 J	9 5 F	9.5 F	10 1 J
SW6010	Cobalt	3 8 F	3 5 F	3 2 F	2 6 F	3 4 F
SW6010	Copper	7.1 F	6 F	5.6 F	5 6 F	5 7 F
SW6010	Lead	9 5 J	7.5 J	7 1 J	7.1 J	6 8 J
SW6010	Nickel	10 5	8.5 F	6 8 F	6.8 F	7 7 F
SW6010	Tin	35 4 U	36 5 U	40 9 U	38 U	34 8 U
SW6010	Vanadium	23.8 F	21 4 F	21.4 F	21 4 F	19 1 F
SW6010	Zinc	20 8 F	18.1 F	16 1 F	16 1 F	14 9 F
SW7471	Mercury	0.04 U	0.04 U	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0 27 UJ	1 5 UJ	0 55 UJ	0 55 UJ	1 5 UJ
SW7761	Silver	0.18 U	0 2 U	0 18 U	0 18 U	0 2 UJ
SW7841	Thallium	0.91 UJ	0 98 UJ	0.92 UJ	0 92 UJ	0 99 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0.004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 005 U	0 005 U	0.005 U	0.004 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0.002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 U	0.005 U	0 004 U	0.005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0 003 U	0.003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 005 U	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0.003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0.002 U	0 002 U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0.005 U	0 005 U	0.004 U	0 005 U
SW8260	2-Hexanone	0 005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Acetone	0.021	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	Acetonitrile	0 038 U	0 041 U	0 038 U	0 036 U	0 041 U
SW8260	Acrolein	0 096 U	0.1 U	0.095 U	0 09 U	0 1 U
SW8260	Acrylonitrile	0 038 U	0 041 U	0 038 U	0 036 U	0 041 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW8260	Allyl chloride (3-chloropropene)	0 01 U	0 01 U	0.01 U	0.009 U	0 01 U
SW8260	Benzene	0 002 U	0.002 U	0.002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0.004 U	0 004 U	0 004 U	0 004 U
SW8260	Bromoform	0.005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Bromomethane	0.005 U	0.005 U	0 005 U	0 004 U	0.005 U
SW8260	Carbon disulfide	0 005 U	0.005 U	0 005 U	0 004 U	0 005 U
SW8260	Carbon tetrachloride	0.005 U	0.005 U	0 005 U	0.004 U	0.005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0.002 U	0.002 U	0 002 U
SW8260	Chloroethane	0 005 U	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	Chloroform	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 005 U	0.005 U	0 005 U	0.004 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0.005 U	0 005 U	0 004 U	0 005 U
SW8260	Dibromochloromethane	0 003 U	0.003 U	0.003 U	0.003 U	0.003 U
SW8260	Dibromomethane	0 005 U	0.005 U	0 005 U	0 004 U	0.005 U
SW8260	Dichlorodifluoromethane	0 005 R	0 005 R	0 005 R	0 004 R	0 005 R
SW8260	Ethyl methacrylate	0.005 U	0 005 U	0.005 U	0.004 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0.003 U	0 003 U	0.003 U	0.003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Isobutanol	0 19 U	0 21 U	0.19 U	0 18 U	0 21 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.005 U	0 005 U	0.005 U	0 004 U	0 005 U
SW8260	Methyl methacrylate	0.005 U	0 005 U	0.005 U	0 004 U	0 005 U
SW8260	Methylacrylonitrile	0 005 U	0 005 U	0 005 U	0.004 U	0.005 U
SW8260	Methylene chloride	0 002 U	0 002 U	0 002 U	0.002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U	0 005 U	0 004 U	0 005 U
SW8260	Pentachloroethane	0.005 U	0.005 U	0 005 U	0.004 U	0.005 U
SW8260	Propane nitrile (propionitrile)	0 019 U	0 021 U	0 019 U	0 018 U	0 021 U
SW8260	Styrene	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0.005 U	0.005 U	0 005 U	0.004 U	0.005 U
SW8260	Toluene	0 005 U	0 005 U	0 005 U	0.004 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0.005 U	0 005 U	0 004 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0.005 U	0 005 U	0.004 U	0.005 U
SW8260	Trichloroethene (TCE)	0.005 U	0 005 U	0.005 U	0 004 U	0.005 U
SW8260	Trichlorofluoromethane	0 004 R	0 004 R	0 004 U	0 004 U	0 004 R
SW8260	Vinyl acetate	0 005 U	0.005 U	0 005 U	0 004 U	0.005 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW8260	Vinyl chloride	0 005 U	0.005 U	0 005 U	0.004 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	1,2-Dichlorobenzene	0 37 U	0 38 U	0.38 U	0.38 U	0 38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 5 U	1 5 U	1.5 U	1 5 U	1.5 U
SW8270	1,3-Dichlorobenzene	0.37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	1,3-Dinitrobenzene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	1,4-Dichlorobenzene	0 37 U	0 38 U	0 38 U	0 38 U	0.38 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1 5 U	1 5 U	1 5 U	1.5 U
SW8270	1,4-Naphthoquinone	3.7 U	3 8 U	3 8 U	3 8 U	3.8 U
SW8270	1-Naphthylamine	0 74 U	0 76 U	0 77 U	0 77 U	0 77 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	2,4,5-Trichlorophenol	1 9 U	1 9 U	1 9 U	1 9 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0.37 U	0 38 U	0.38 U	0 38 U	0 38 U
SW8270	2,4-Dichlorophenol	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	2,4-Dimethylphenol	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	2,4-Dinitrophenol	1 9 U	1 9 U	1 9 U	1.9 U	1 9 U
SW8270	2,4-Dinitrotoluene	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	2,6-Dichlorophenol	0.74 U	0.76 U	0 77 U	0 77 U	0 77 U
SW8270	2,6-Dinitrotoluene	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	2-Acetylaminofluorene	0 74 U	0.76 U	0 77 U	0 77 U	0 77 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 74 U	0 76 U	0.77 U	0.77 U	0 77 U
SW8270	2-Chloronaphthalene	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	2-Chlorophenol	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	2-Methylnaphthalene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	2-Nitroaniline	1.9 U	1.9 U	1.9 U	1.9 U	1 9 U
SW8270	2-Nitrophenol	0.37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	2-Picoline (alpha-picoline)	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0 74 U	0 76 U	0.77 U	0 77 U	0 77 U
SW8270	3,3'-Dimethylbenzidine	1 9 U	1 9 U	1 9 U	1 9 U	1 9 U
SW8270	3-Methylcholanthrene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	3-Nitroaniline	1 9 U	1.9 U	1.9 U	1 9 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	1.9 U	1.9 U	1 9 U	1 9 U	1 9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.74 U	0 76 U	0 77 U	0 77 U	0 77 U
SW8270	4-Bromophenyl phenyl ether	0 37 U	0 38 U	0.38 U	0 38 U	0 38 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW8270	4-Chloro-3-methylphenol	0 74 U	0.76 U	0 77 U	0 77 U	0 77 U
SW8270	4-Chloroaniline	0 74 U	0 76 U	0.77 U	0 77 U	0.77 U
SW8270	4-Chlorophenyl phenyl ether	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	4-Nitroaniline	1 9 U	1.9 U	1 9 U	1.9 U	1.9 U
SW8270	4-Nitrophenol	1 9 U	1.9 U	1 9 U	1.9 U	1 9 U
SW8270	4-Nitroquinoline-N-oxide	1 9 U	1.9 U	1 9 U	1.9 U	1 9 U
SW8270	5-Nitro-o-toluidine	0.74 U	0.76 U	0 77 U	0.77 U	0 77 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 74 U	0.76 U	0.77 U	0 77 U	0 77 U
SW8270	Acenaphthene	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Acenaphthylene	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Acetophenone	0 74 U	0 76 U	0 77 U	0 77 U	0 77 U
SW8270	alpha, alpha-Dimethylphenethylamine	1 9 U	1.9 U	1.9 U	1.9 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 37 U	0.38 U	0 38 U	0 38 U	0.38 U
SW8270	Anthracene	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Aramite (total)	0.74 U	0 76 U	0.77 U	0 77 U	0 77 U
SW8270	Benzo(a)anthracene	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Benzo(a)pyrene	0 37 U	0.38 U	0.38 U	0.38 U	0 38 U
SW8270	Benzo(b)fluoranthene	0 37 U	0.38 U	0.38 U	0 38 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Benzoic acid	1.9 U	1 9 U	1 9 U	1 9 U	1 9 U
SW8270	Benzyl alcohol	0 37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	Benzyl butyl phthalate	0 37 U	0 38 U	0.38 U	0.38 U	0 38 U
SW8270	bis(2-Chloroethoxy)methane	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.37 U	0.38 U	0.38 U	0 38 U	0 38 U
SW8270	bis(2-Ethylhexyl)phthalate	0.37 U	0.38 U	0.38 U	0.38 U	0 11 F
SW8270	Chlorobenzilate	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Chrysene	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0.37 U	0 38 U	0.38 U	0 38 U	0 38 U
SW8270	Dibenz(a,h)anthracene	0.37 U	0.38 U	0.38 U	0.38 U	0 38 U
SW8270	Dibenzofuran	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Diethyl phthalate	0.37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	Dimethyl phthalate	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Di-n-butyl phthalate	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Di-n-octyl phthalate	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	Dinoseb	0.74 U	0.76 U	0 77 U	0.77 U	0 77 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW8270	Diphenylamine	0.37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	Ethyl methanesulfonate	0 74 U	0 76 U	0.77 U	0 77 U	0 77 U
SW8270	Fluoranthene	0 37 U	0 38 U	0.38 U	0.38 U	0 38 U
SW8270	Fluorene	0 37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachlorobenzene	0 37 U	0.38 U	0 38 U	0 38 U	0.38 U
SW8270	Hexachlorobutadiene	0.37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachloroethane	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Hexachlorophene	5 6 U	5.7 U	5 8 U	5 8 U	5 8 U
SW8270	Hexachloropropene	1 9 U	1 9 U	1.9 U	1 9 U	1.9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 37 U	0.38 U	0 38 U	0.38 U	0 38 U
SW8270	Isophorone	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Isosafrole	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0 37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	Methapyrilene	0 93 U	0.94 U	0 96 U	0 96 U	0 96 U
SW8270	Methyl methanesulfonate	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Naphthalene	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Nitrobenzene	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Nitrosomethylethylamine	0 37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	N-Nitrosodiethylamine	0 74 U	0 76 U	0.77 U	0 77 U	0 77 U
SW8270	N-Nitrosodimethylamine	0.74 U	0 76 U	0 77 U	0 77 U	0 77 U
SW8270	N-Nitrosodi-n-butylamine	0.37 U	0.38 U	0.38 U	0 38 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0 37 U	0.38 U	0.38 U	0 38 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	N-Nitrosomorpholine	0 74 U	0.76 U	0.77 U	0.77 U	0 77 U
SW8270	N-Nitrosopiperidine	0.37 U	0 38 U	0 38 U	0 38 U	0.38 U
SW8270	N-Nitrosopyrrolidine	0.74 U	0 76 U	0 77 U	0 77 U	0 77 U
SW8270	o-Cresol (2-methylphenol)	0.37 U	0.38 U	0.38 U	0.38 U	0 38 U
SW8270	o-Toluidine	0 74 U	0.76 U	0 77 U	0.77 U	0 77 U
SW8270	p-Dimethylaminoazobenzene	0.74 U	0 76 U	0 77 U	0 77 U	0.77 U
SW8270	Pentachlorobenzene	0 37 U	0 38 U	0.38 U	0 38 U	0 38 U
SW8270	Pentachloronitrobenzene	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Pentachlorophenol	1 9 U	1.9 U	1 9 U	1.9 U	1 9 U
SW8270	Phenacetin	0.37 U	0 38 U	0.38 U	0 38 U	0 38 U
SW8270	Phenanthrene	0.37 U	0.38 U	0 38 U	0 38 U	0 38 U
SW8270	Phenol	0 37 U	0 38 U	0 38 U	0 38 U	0 38 U

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1603-00'	BHGLSWMU1603-05'	BHGLSWMU1603-10'	BHGLSWMU1603-10' Duplicate	BHGLSWMU1603-15'
SW8270	p-Phenylenediamine	1.5 U	1 5 U	1.5 U	1.5 U	1 5 U
SW8270	Pronamide	0 37 U	0 38 U	0 38 U	0.38 U	0 38 U
SW8270	Pyrene	0.37 U	0 38 U	0 38 U	0 38 U	0 38 U
SW8270	Pyridine	0 74 U	0.76 U	0 77 U	0 77 U	0 77 U
SW8270	Safrole	0 37 U	0.38 U	0.38 U	0 38 U	0 38 U
SW9045	PH	7.8	8 1	8.6	8 3	8 3

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data

Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW6010	Antimony	4.2 UJ	5 1 UJ	4 1 UJ	4 6 UJ
SW6010	Arsenic	4 4 J	6 2 J	3.9 F	4.6 UJ
SW6010	Barium	92 2	83 9	42	38 5
SW6010	Beryllium	0 89	0 76	0 35	0 16 F
SW6010	Cadmium	0.21 F	0.34 F	0.13 F	0.15 F
SW6010	Chromium (total)	16 2 J	13.1 J	5 F	4 8 F
SW6010	Cobalt	6 2	5 3 F	3.4 F	0 62 F
SW6010	Copper	10.5	7.6 F	5 F	1 8 F
SW6010	Lead	17 4 J	9 9 J	5 4 J	4.4 J
SW6010	Nickel	12.1	12	6 6 F	2 1 F
SW6010	Tin	33 6 U	40 5 U	33 2 U	37.1 U
SW6010	Vanadium	29.1	26.7 F	19 7 F	4 8 F
SW6010	Zinc	27 8	22 8 F	11 2 F	7 8 F
SW7471	Mercury	0 04 U	0 03 F	0.04 U	0.04 U
SW7740	Selenium	0 55 UJ	0 32 UJ	0.6 UJ	0 57 UJ
SW7761	Silver	0.18 UJ	0 21 UJ	0 2 UJ	0 19 U
SW7841	Thallium	0 92 UJ	1.1 UJ	1 UJ	0 94 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0.003 U	0.003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0 002 U	0.002 U	0.002 U
SW8260	1,1,2-Trichloroethane	0.005 U	0 005 U	0 004 U	0 004 U
SW8260	1,1-Dichloroethane	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 U	0.003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0.003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0 005 U	0.005 U	0 004 U	0 004 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0.003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	2-Hexanone	0 005 U	0.005 U	0.004 U	0.004 U
SW8260	Acetone	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Acetonitrile	0 043 U	0 042 U	0 036 U	0.036 U
SW8260	Acrolein	0 11 U	0 1 U	0 09 U	0 09 U
SW8260	Acrylonitrile	0 043 U	0 042 U	0 036 U	0 036 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW8260	Allyl chloride (3-chloropropene)	0 011 U	0.01 U	0 009 U	0.009 U
SW8260	Benzene	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	Bromoform	0 005 U	0.005 U	0 004 U	0 004 U
SW8260	Bromomethane	0 005 U	0 005 U	0 004 U	0.004 U
SW8260	Carbon disulfide	0 005 U	0 005 U	0.004 U	0 004 U
SW8260	Carbon tetrachloride	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Chlorobenzene	0.002 U	0 002 U	0 002 U	0.002 U
SW8260	Chloroethane	0 005 U	0 005 U	0.004 U	0 004 U
SW8260	Chloroform	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 005 U	0.005 U	0.004 U	0 004 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0 005 U	0 004 U	0.004 U
SW8260	Dibromochloromethane	0.003 U	0 003 U	0.003 U	0.003 U
SW8260	Dibromomethane	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Dichlorodifluoromethane	0.005 R	0 005 R	0 004R	0 004 R
SW8260	Ethyl methacrylate	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Ethylbenzene	0.003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Isobutanol	0 21 U	0 21 U	0 18 U	0 18 U
SW8260	m- & p-Xylene (sum of isomers)	0.005 U	0.005 U	0 004 U	0.004 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.005 U	0.005 U	0.004 U	0 004 U
SW8260	Methyl methacrylate	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Methylacrylonitrile	0.005 U	0 005 U	0.004 U	0 004 U
SW8260	Methylene chloride	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.005 U	0.005 U	0 004 U	0 004 U
SW8260	Pentachloroethane	0 005 U	0.005 U	0 004 U	0 004 U
SW8260	Propane nitrile (propionitrile)	0 021 U	0 021 U	0 018 U	0.018 U
SW8260	Styrene	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0 005 U	0 004 U	0.004 U
SW8260	Toluene	0 005 U	0 005 U	0.004 U	0 004 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 005 U	0 004 U	0 004 U
SW8260	Trichloroethene (TCE)	0 005 U	0.005 U	0 004 U	0.004 U
SW8260	Trichlorofluoromethane	0 004 R	0 004 R	0 004 U	0 004 U
SW8260	Vinyl acetate	0 005 U	0 005 U	0.004 U	0.004 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW8260	Vinyl chloride	0 005 U	0 005 U	0 004 U	0 004 U
SW8270	1,2,4,5-Tetrachlorobenzene	0.39 U	0 39 U	0.37 U	0 37 U
SW8270	1,2,4-Trichlorobenzene	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	1,2-Dichlorobenzene	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 6 U	1 6 U	1.5 U	1 5 U
SW8270	1,3-Dichlorobenzene	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	1,3-Dinitrobenzene	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	1,4-Dichlorobenzene	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	1,4-Dioxane (p-dioxane)	1 6 U	1.6 U	1.5 U	1 5 U
SW8270	1,4-Naphthoquinone	3 9 U	3 9 U	3.7 U	3 7 U
SW8270	1-Naphthylamine	0 78 U	0 78 U	0.73 U	0 74 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	2,4,5-Trichlorophenol	1 9 U	2 U	1.8 U	1 8 U
SW8270	2,4,6-Trichlorophenol	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	2,4-Dichlorophenol	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	2,4-Dimethylphenol	0.39 U	0 39 U	0 37 U	0.37 U
SW8270	2,4-Dinitrophenol	1.9 U	2 U	1.8 U	1.8 U
SW8270	2,4-Dinitrotoluene	0 39 U	0.39 U	0 37 U	0 37 U
SW8270	2,6-Dichlorophenol	0.78 U	0 78 U	0 73 U	0 74 U
SW8270	2,6-Dinitrotoluene	0 39 U	0.39 U	0 37 U	0 37 U
SW8270	2-Acetylaminofluorene	0 78 U	0.78 U	0 73 U	0 74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.78 U	0 78 U	0 73 U	0 74 U
SW8270	2-Chloronaphthalene	0.39 U	0.39 U	0 37 U	0.37 U
SW8270	2-Chlorophenol	0 39 U	0.39 U	0.37 U	0 37 U
SW8270	2-Methylnaphthalene	0 39 U	0.39 U	0 16 F	0.37 U
SW8270	2-Nitroaniline	1 9 U	2 U	1 8 U	1 8 U
SW8270	2-Nitrophenol	0 39 U	0.39 U	0 37 U	0 37 U
SW8270	2-Picoline (alpha-picoline)	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	3,3'-Dichlorobenzidine	0 78 U	0 78 U	0 73 U	0 74 U
SW8270	3,3'-Dimethylbenzidine	1 9 U	2 U	1 8 U	1.8 U
SW8270	3-Methylcholanthrene	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	3-Nitroaniline	1 9 U	2 U	1 8 U	1 8 U
SW8270	4,6-Dinitro-2-methylphenol	1.9 U	2 U	1 8 U	1 8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 78 U	0 78 U	0 73 U	0 74 U
SW8270	4-Bromophenyl phenyl ether	0 39 U	0.39 U	0 37 U	0 37 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW8270	4-Chloro-3-methylphenol	0 78 U	0 78 U	0 73 U	0 74 U
SW8270	4-Chloroaniline	0 78 U	0.78 U	0 73 U	0 74 U
SW8270	4-Chlorophenyl phenyl ether	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	4-Nitroaniline	1 9 U	2 U	1.8 U	1.8 U
SW8270	4-Nitrophenol	1 9 U	2 U	1.8 U	1 8 U
SW8270	4-Nitroquinoline-N-oxide	1 9 U	2 U	1.8 U	1.8 U
SW8270	5-Nitro-o-toluidine	0.78 U	0 78 U	0.73 U	0.74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 78 U	0 78 U	0.73 U	0 74 U
SW8270	Acenaphthene	0 39 U	0 39 U	0.37 U	0.37 U
SW8270	Acenaphthylene	0.39 U	0 39 U	0.37 U	0.37 U
SW8270	Acetophenone	0.78 U	0.78 U	0 73 U	0 74 U
SW8270	alpha, alpha-Dimethylphenethylamine	1 9 U	2 U	1 8 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	Anthracene	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	Aramite (total)	0 78 U	0 78 U	0.73 U	0 74 U
SW8270	Benzo(a)anthracene	0 071 F	0 39 U	0 37 U	0 37 U
SW8270	Benzo(a)pyrene	0 077 F	0 39 U	0 37 U	0 37 U
SW8270	Benzo(b)fluoranthene	0 12 F	0 39 U	0.37 U	0 37 U
SW8270	Benzo(g,h,i)perylene	0 05 F	0 39 U	0 37 U	0 37 U
SW8270	Benzo(k)fluoranthene	0 047 F	0 39 U	0 37 U	0 37 U
SW8270	Benzoic acid	1 9 U	2 U	1 8 U	1 8 U
SW8270	Benzyl alcohol	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Benzyl butyl phthalate	0 39 U	0.39 U	0 37 U	0.37 U
SW8270	bis(2-Chloroethoxy)methane	0.39 U	0 39 U	0.37 U	0.37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	bis(2-Ethylhexyl)phthalate	0 39 U	0 39 U	0 06 F	0 37 U
SW8270	Chlorobenzilate	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Chrysene	0.085 F	0 39 U	0.37 U	0.37 U
SW8270	Diallate (total of cis and trans isomers)	0 39 U	0.39 U	0 37 U	0.37 U
SW8270	Dibenz(a,h)anthracene	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	Dibenzofuran	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Diethyl phthalate	0 39 U	0.39 U	0 37 U	0.37 U
SW8270	Dimethyl phthalate	0 39 U	0.39 U	0.37 U	0.37 U
SW8270	Di-n-butyl phthalate	0.39 U	0 39 U	0.37 U	0 37 U
SW8270	Di-n-octyl phthalate	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	Dinoseb	0 78 U	0 78 U	0.73 U	0 74 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW8270	Diphenylamine	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	Ethyl methanesulfonate	0 78 U	0 78 U	0 73 U	0 74 U
SW8270	Fluoranthene	0 16 F	0 39 U	0.37 U	0 37 U
SW8270	Fluorene	0.39 U	0 39 U	0.37 U	0 37 U
SW8270	Hexachlorobenzene	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Hexachlorobutadiene	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	Hexachlorocyclopentadiene	0 39 U	0.39 U	0 37 U	0 37 U
SW8270	Hexachloroethane	0 39 U	0 39 U	0.37 U	0.37 U
SW8270	Hexachlorophene	5 8 U	5 8 U	5.5 U	5.5 U
SW8270	Hexachloropropene	1 9 U	2 U	1 8 U	1 8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 062 F	0 39 U	0 37 U	0 37 U
SW8270	Isophorone	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Isosafrole	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	m- & p-Cresol (sum of isomers)	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	Methapyrilene	0.97 U	0 98 U	0 92 U	0 92 U
SW8270	Methyl methanesulfonate	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Naphthalene	0.39 U	0 39 U	0 2 F	0 37 U
SW8270	Nitrobenzene	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	Nitrosomethylethylamine	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	N-Nitrosodiethylamine	0 78 U	0 78 U	0 73 U	0.74 U
SW8270	N-Nitrosodimethylamine	0.78 U	0 78 U	0 73 U	0 74 U
SW8270	N-Nitrosodi-n-butylamine	0 39 U	0 39 U	0 37 U	0.37 U
SW8270	N-Nitrosodi-n-propylamine	0 39 U	0 39 U	0.37 U	0 37 U
SW8270	N-Nitrosodiphenylamine	0.39 U	0 39 U	0 37 U	0 37 U
SW8270	N-Nitrosomorpholine	0 78 U	0 78 U	0 73 U	0 74 U
SW8270	N-Nitrosopiperidine	0 39 U	0.39 U	0.37 U	0 37 U
SW8270	N-Nitrosopyrrolidine	0 78 U	0 78 U	0.73 U	0 74 U
SW8270	o-Cresol (2-methylphenol)	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	o-Toluidine	0 78 U	0.78 U	0.73 U	0 74 U
SW8270	p-Dimethylaminoazobenzene	0 78 U	0.78 U	0.73 U	0.74 U
SW8270	Pentachlorobenzene	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Pentachloronitrobenzene	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Pentachlorophenol	1 9 U	2 U	1 8 U	1 8 U
SW8270	Phenacetin	0.39 U	0 39 U	0.37 U	0.37 U
SW8270	Phenanthrene	0 066 F	0.39 U	0 37 U	0 37 U
SW8270	Phenol	0 39 U	0 39 U	0 37 U	0.37 U

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Table C.1
Analytical Data-Soil
SWMU 16
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU1604-00'	BHGLSWMU1604-05'	BHGLSWMU1604-10'	BHGLSWMU1604-15'
SW8270	p-Phenylenediamine	1 6 U	1 6 U	1 5 U	1 5 U
SW8270	Pronamide	0 39 U	0 39 U	0 37 U	0 37 U
SW8270	Pyrene	0.072 F	0 39 U	0 37 U	0 37 U
SW8270	Pyridine	0.78 U	0.78 U	0 73 U	0 74 U
SW8270	Safrole	0 39 U	0 39 U	0 37 U	0.37 U
SW9045	PH	7.9	7 9	8 5	9 2

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data.

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW6010	Antimony	3 4 U	4 3 U	3 8 U	3.6 U
SW6010	Arsenic	3 6	4 9	3.7 F	1 7 F
SW6010	Barium	56 8	52 8	56 3	24 F
SW6010	Beryllium	0 51 J	0.54 J	0 54 J	0.25 J
SW6010	Cadmium	0 06 F	0 43 U	0 38 U	0 36 U
SW6010	Chromium (total)	10.2	15 7	12.9	5 F
SW6010	Cobalt	3 6 F	4 5 F	4 F	2.2 F
SW6010	Copper	6 7 F	8 3 F	7.1 F	4 5 F
SW6010	Lead	13.1	8 6	7	4.1
SW7421	Lead	--	--	--	--
SW6010	Nickel	6 4 F	7.1 F	9	5.4 F
SW6010	Tin	27 6 U	34 1 U	30 3 U	29 1 U
SW6010	Vanadium	22.3	34 4	24	10 4 F
SW6010	Zinc	29.7	16 9 F	15.7 F	10.7 F
SW7471	Mercury	0 02 F	0 04 U	0 04 U	0.04 U
SW7740	Selenium	0.14 F	0.15 F	0 23 U	0.22 U
SW7761	Silver	0 66	0.16 UJ	0 15 UJ	0 15 UJ
SW7841	Thallium	0.77 UJ	0 79 U	0 77 UJ	0.74 UJ
SW8260	1,1,1,2-Tetrachloroethane	0.004U	0 005U	0.004U	0 004U
SW8260	1,1,1-Trichloroethane	0.004U	0 005U	0 004U	0 004U
SW8260	1,1,2,2-Tetrachloroethane	0.004U	0.005U	0 004U	0.004U
SW8260	1,1,2-Trichloroethane	0.004U	0.005U	0 004U	0 004U
SW8260	1,1-Dichloroethane	0.004U	0 005U	0 004U	0 004U
SW8260	1,1-Dichloroethene	0.005U	0 006U	0 005U	0 005U
SW8260	1,2,3-Trichloropropane	0.017U	0 017U	0 017U	0 017U
SW8260	1,2-Dibromo-3-chloropropane	0 008U	0.008U	0 008U	0 009U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 004U	0 004U	0 004U	0 004U
SW8260	1,2-Dichloroethane	0.004U	0 005U	0.004U	0 004U
SW8260	1,2-Dichloroethene, cis-	0 005U	0 006U	0 005U	0.005U
SW8260	1,2-Dichloroethene, trans-	0 004U	0 005U	0 004U	0 004U
SW8260	1,2-Dichloropropane	0 004U	0 005U	0.004U	0 004U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 008U	0.009U	0.008U	0 009U
SW8260	2-Hexanone	0.017U	0.019U	0 017U	0 017U
SW8260	Acetone	0 022U	0 055U	0.032U	0 008U
SW8260	Acetonitrile	0 083U	0 093U	0 083U	0 086U
SW8260	Acrolein	0.083U	0 093U	0 083U	0 086U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW8260	Acrylonitrile	0.083U	0 093U	0 083U	0 086U
SW8260	Allyl chloride (3-chloropropene)	0.008U	0 009U	0.008U	0 009U
SW8260	Benzene	0.004U	0 005U	0 004U	0.004U
SW8260	Bromodichloromethane	0.004U	0 005U	0.004U	0.004U
SW8260	Bromoform	0.005U	0 006U	0 005U	0.005U
SW8260	Bromomethane	0.004U	0 005U	0 004U	0.004U
SW8260	Carbon disulfide	0.004U	0 005U	0 004U	0 004U
SW8260	Carbon tetrachloride	0.008U	0 009U	0.008U	0 009U
SW8260	Chlorobenzene	0 004U	0 005U	0.004U	0 004U
SW8260	Chloroethane	0 004U	0 005U	0 004U	0 004U
SW8260	Chloroform	0 004U	0 005U	0 004U	0 004U
SW8260	Chloromethane	0 006U	0 006U	0 006U	0 006U
SW8260	cis-1,3-Dichloropropene	0.004U	0 005U	0 004U	0.004U
SW8260	Dibromochloromethane	0 004U	0 005U	0 004U	0.004U
SW8260	Dibromomethane	0 008U	0 009U	0.008U	0 004U
SW8260	Dichlorodifluoromethane	0 004U	0 005U	0.004U	0 004U
SW8260	Ethyl methacrylate	0.004U	0 005U	0.004U	0 004U
SW8260	Ethylbenzene	0 004U	0 005U	0 004U	0.004U
SW8260	Iodomethane (methyl iodide)	0 004U	0.005U	0 004U	0 004U
SW8260	Isobutanol	0 017U	0.019U	0 017U	0.017U
SW8260	m- & p-Xylene (sum of isomers)	0 006U	0.006U	0 006U	0.006U
SW8260	Methyl ethyl ketone (2-butanone)	0 017U	0 019U	0.017U	0 017U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 017U	0 019U	0.017U	0.017U
SW8260	Methyl methacrylate	0.004U	0 005U	0.004U	0 004U
SW8260	Methylacrylonitrile	0 083U	0 093U	0.083U	0 086U
SW8260	Methylene chloride	0 004F	0 004F	0.003F	0 004F
SW8260	o-Xylene (1,2-dimethylbenzene)	0 004U	0.005U	0.004U	0.004U
SW8260	Pentachloroethane	--	--	--	--
SW8260	Propane nitrile (propionitrile)	0 083U	0 093U	0 083U	0 089U
SW8260	Styrene	0.004U	0.005U	0 004U	0 004U
SW8260	Tetrachloroethene (PCE)	0.006U	0 006U	0 006U	0 006U
SW8260	Toluene	0.004U	0 005U	0.004U	0 004U
SW8260	trans-1,3-Dichloropropene	0 004U	0 005U	0.004U	0.004U
SW8260	trans-1,4-Dichloro-2-butene	0 021U	0 023U	0 021U	0 022U
SW8260	Trichloroethene (TCE)	0.008U	0 009U	0 008U	0 009U
SW8260	Vinyl acetate	0 008U	0 009U	0 008U	0 009U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW8260	Vinyl chloride	0 008U	0 008U	0 008U	0 008U
SW8270	1,2,4,5-Tetrachlorobenzene	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0.39 U	0.4 U	0.39 U	0.38 U
SW8270	1,2-Dichlorobenzene	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.5 U	1 6 U	1 6 U	1.5 U
SW8270	1,3-Dichlorobenzene	0.39 U	0.4 U	0.39 U	0 38 U
SW8270	1,3-Dinitrobenzene	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	1,4-Dichlorobenzene	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1.6 U	1 6 U	1 5 U
SW8270	1,4-Naphthoquinone	1.9 U	2 U	2 U	1.9 U
SW8270	1-Naphthylamine	0 77 U	0 81 U	0.78 U	0 75 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.39 U	0.4 U	0 39 U	0 38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	2,4,5-Trichlorophenol	1 9 U	2 U	2 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	2,4-Dichlorophenol	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	2,4-Dimethylphenol	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	2,4-Dinitrophenol	1 9 U	2 U	2 U	1 9 U
SW8270	2,4-Dinitrotoluene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	2,6-Dichlorophenol	0 77 U	0 81 U	0 78 U	0.75 U
SW8270	2,6-Dinitrotoluene	0.39 U	0.4 U	0.39 U	0 38 U
SW8270	2-Acetylaminofluorene	0 77 U	0 81 U	0.78 U	0.75 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 77 U	0 81 U	0 78 U	0 75 U
SW8270	2-Chloronaphthalene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	2-Chlorophenol	0.39 U	0.4 U	0.39 U	0 38 U
SW8270	2-Methylnaphthalene	0.39 U	0 4 U	0.39 U	0.38 U
SW8270	2-Nitroaniline	1.9 U	2 U	2 U	1.9 U
SW8270	2-Nitrophenol	0.39 U	0 4 U	0 39 U	0.38 U
SW8270	2-Picoline (alpha-picoline)	0 39 U	0.4 U	0 39 U	0.38 U
SW8270	3,3'-Dichlorobenzidine	0.77 U	0 81 U	0.78 U	0.75 U
SW8270	3,3'-Dimethylbenzidine	1.9 U	2 U	2 U	1 9 U
SW8270	3-Methylcholanthrene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	3-Nitroaniline	1.9 U	2 U	2 U	1.9 U
SW8270	4,6-Dinitro-2-methylphenol	1 9 U	2 U	2 R	1 9 R
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 77 U	0 81 U	0.78 U	0.75 U
SW8270	4-Bromophenyl phenyl ether	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	4-Chloro-3-methylphenol	0 77 U	0.81 U	0 78 U	0 75 U
SW8270	4-Chloroaniline	0.77 U	0 81 U	0 78 U	0 75 U
SW8270	4-Chlorophenyl phenyl ether	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	4-Nitroaniline	1 9 U	2 U	2 U	1.9 U
SW8270	4-Nitrophenol	1.9 U	2 U	2 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	1.9 U	2 U	2 U	1 9 U
SW8270	5-Nitro-o-toluidine	0.77 U	0 81 U	0 78 U	0 75 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.77 U	0 81 U	0 78 U	0.75 U
SW8270	Acenaphthene	0.39 U	0 4 U	0.39 U	0 38 U
SW8270	Acenaphthylene	0.39 U	0 4 U	0.39 U	0.38 U
SW8270	Acetophenone	0.77 U	0 81 U	0.78 U	0 75 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.9 U	2 U	2 U	1.9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 39 U	0.4 U	0.39 U	0 38 U
SW8270	Anthracene	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	Aramite (total)	0.77 U	0.81 U	0.78 U	0 75 U
SW8270	Benzo(a)anthracene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	Benzo(a)pyrene	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	Benzo(b)fluoranthene	0.39 U	0.4 U	0.39 U	0 38 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW8270	Benzo(g,h,i)perylene	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Benzoic acid	1 9 R	2 R	2 U	1.9 U
SW8270	Benzyl alcohol	0.39 U	0 4 U	0.39 U	0.38 U
SW8270	Benzyl butyl phthalate	0.39 U	0 4 U	0.39 U	0.38 U
SW8270	bis(2-Chloroethoxy)methane	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	bis(2-Ethylhexyl)phthalate	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Chlorobenzilate	0.39 U	0 4 U	0 39 U	0 38 U
SW8270	Chrysene	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	Dibenz(a,h)anthracene	0.39 U	0.4 U	0 39 U	0 38 U
SW8270	Dibenzofuran	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Diethyl phthalate	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	Dimethyl phthalate	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Di-n-butyl phthalate	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	Di-n-octyl phthalate	0 39 U	0.4 U	0.39 U	0 38 U
SW8270	Dinoseb	0.77 U	0 81 U	0.78 U	0.75 U
SW8270	Diphenylamine	0.39 U	0 4 U	0 39 U	0.38 U
SW8270	Ethyl methanesulfonate	0 77 U	0.81 U	0.78 U	0 75 U
SW8270	Fluoranthene	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	Fluorene	0 39 U	0.4 U	0.39 U	0 38 U
SW8270	Hexachlorobenzene	0.39 U	0 4 U	0 39 U	0 38 U
SW8270	Hexachlorobutadiene	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	Hexachloroethane	0.39 U	0 4 U	0.39 U	0 38 U
SW8270	Hexachlorophene	5 8 U	6.1 U	5 8 U	5.6 U
SW8270	Hexachloropropene	1.9 U	2 U	2 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Isophorone	0 39 U	0 4 U	0.39 U	0 38 U
SW8270	Isosafrole	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0.39 U	0 4 U	0 39 U	0 38 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
SW8270	Methapyrilene	0 97 U	1 U	0.98 U	0 94 U
SW8270	Methyl methanesulfonate	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	Naphthalene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	Nitrobenzene	0 39 U	0.4 U	0 39 U	0.38 U
SW8270	Nitrosomethylethylamine	0 39 U	0.4 U	0 39 U	0.38 U
SW8270	N-Nitrosodiethylamine	0.77 U	0.81 U	0 78 U	0.75 U
SW8270	N-Nitrosodimethylamine	0 77 U	0 81 U	0 78 U	0.75 U
SW8270	N-Nitrosodi-n-butylamine	0.39 U	0 4 U	0 39 U	0.38 U
SW8270	N-Nitrosodi-n-propylamine	0 39 U	0.4 U	0 39 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	N-Nitrosomorpholine	0 77 U	0 81 U	0 78 U	0 75 U
SW8270	N-Nitrosopiperidine	0.39 U	0.4 U	0.39 U	0.38 U
SW8270	N-Nitrosopyrrolidine	0 77 U	0 81 U	0 78 U	0 75 U
SW8270	o-Cresol (2-methylphenol)	0.39 U	0 4 U	0 39 U	0 38 U
SW8270	o-Toluidine	0.77 U	0.81 U	0.78 U	0 75 U
SW8270	p-Dimethylaminoazobenzene	0 77 U	0 81 U	0.78 U	0 75 U
SW8270	Pentachlorobenzene	0.39 U	0.4 U	0.39 U	0 38 U
SW8270	Pentachloronitrobenzene	0 39 U	0 4 U	0 39 U	0.38 U
SW8270	Pentachlorophenol	1.9 U	2 U	2 U	1.9 U
SW8270	Phenacetin	0.39 U	0.4 U	0.39 U	0.38 U
SW8270	Phenanthrene	0 39 U	0 4 U	0.39 U	0.38 U
SW8270	Phenol	0.39 U	0 4 U	0.39 U	0.38 U
SW8270	p-Phenylenediamine	1 5 U	1.6 U	1 6 U	1 5 U
SW8270	Pronamide	0 39 U	0 4 U	0 39 U	0 38 U
SW8270	Pyrene	0 39 U	0.4 U	0.39 U	0.38 U
SW8270	Pyridine	0 77 U	0 81 U	0 78 U	0 75 U
SW8270	Safrole	0 39 U	0 4 U	0 39 U	0.38 U
TX1005	Petroleum Hydrocarbons	56 U	61 U	56 U	54 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33001-00'	BHGLSWMU33001-05'	BHGLSWMU33001-10'	BHGLSWMU33001-15'
TX1005	Petroleum Hydrocarbons- Diesel	56 U	61 U	56 U	54 U
TX1005	Petroleum Hydrocarbons- Gasoline	56 U	61 U	56 U	54 U

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data

-- = Not analyzed

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
SW6010	Antimony	3.1 U	4 2 UJ	4 2 UJ	3 3 U
SW6010	Arsenic	3 4	5.5	5.2 J	2 8 F
SW6010	Barium	44 5	71 4	71.4	40 4
SW6010	Beryllium	0.35 J	0 97	0.97	0 59 J
SW6010	Cadmium	0.5	0.42 U	0 42 U	0.33 U
SW6010	Chromium (total)	9 5	17	17	8 5
SW6010	Cobalt	2 7 F	4 1	3 4 F	3 8 F
SW6010	Copper	6 1 F	7.5	7.3 F	6 7
SW6010	Lead	14	7.6	--	7
SW7421	Lead	--	--	22 5	--
SW6010	Nickel	5.6 F	12 6	12 6	8 7
SW6010	Tin	25 U	33 3 U	33 3 U	26 2 U
SW6010	Vanadium	17 7 F	34.9	33 6	17 6 F
SW6010	Zinc	28	22 6 F	22.6 F	16 6 F
SW7471	Mercury	0 05	0 04 U	0 03 F	0 02 F
SW7740	Selenium	0 2 UJ	0.27 UJ	0 27 UJ	0.23 UJ
SW7761	Silver	0 19 UJ	0 18 U	0.18 U	0 15 UJ
SW7841	Thallium	0 67 UJ	0.91 U	0 91 U	0 75 U
SW8260	1,1,1,2-Tetrachloroethane	0.004U	0 003 U	0 003 U	0 004U
SW8260	1,1,1-Trichloroethane	0 009U	0 004 U	0 004 U	0 004U
SW8260	1,1,2,2-Tetrachloroethane	0.004U	0 002 U	0 002 U	0 004U
SW8260	1,1,2-Trichloroethane	0.004U	0 005 U	0.005 U	0 004U
SW8260	1,1-Dichloroethane	0 004U	0 002 U	0 002 U	0.004U
SW8260	1,1-Dichloroethene	0 005U	0 005 U	0 005 U	0 005U
SW8260	1,2,3-Trichloropropane	0 018U	0.005 U	0.005 U	0.017U
SW8260	1,2-Dibromo-3-chloropropane	0 009U	0 005 U	0.005 U	0 008U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.004U	0 003 U	0.003 U	0 004U
SW8260	1,2-Dichloroethane	0 004U	0 003 U	0 003 U	0 004U
SW8260	1,2-Dichloroethene, cis-	0.005U	0.005 U	0 005 U	0 005U
SW8260	1,2-Dichloroethene, trans-	0.004U	0.003 U	0 003 U	0 004U
SW8260	1,2-Dichloropropane	0.004U	0 002 U	0 002 U	0 004U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0.009U	0 005 U	0 005 U	0 008U
SW8260	2-Hexanone	0 018U	0.005 U	0.005 U	0 017U
SW8260	Acetone	0 008U	0.005 U	0 005 U	0 008U
SW8260	Acetonitrile	0.089U	0 042 U	0.042 U	0 083U
SW8260	Acrolein	0 089U	0.1 U	0 1 U	0 083U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
SW8260	Acrylonitrile	0 089U	0 042 U	0 042 U	0 083U
SW8260	Allyl chloride (3-chloropropene)	0 009U	0 01 U	0.01 U	0 008U
SW8260	Benzene	0 004U	0.002 U	0 002 U	0 004U
SW8260	Bromodichloromethane	0 004U	0 004 U	0 004 U	0 004U
SW8260	Bromoform	0 005U	0 005 U	0 005 U	0 005U
SW8260	Bromomethane	0 004U	0 005 U	0 005 U	0.004U
SW8260	Carbon disulfide	0.004U	0.005 U	0 005 U	0 004U
SW8260	Carbon tetrachloride	0 009U	0 005 U	0 005 U	0 008U
SW8260	Chlorobenzene	0 004U	0 002 U	0 002 U	0.004U
SW8260	Chloroethane	0 004U	0 005 U	0 005 U	0.004U
SW8260	Chloroform	0 004U	0 002 U	0 002 U	0 004U
SW8260	Chloromethane	0.006U	0 005 U	0 005 U	0 006U
SW8260	cis-1,3-Dichloropropene	0 004U	0 005 U	0 005 U	0 004U
SW8260	Dibromochloromethane	0.004U	0 003 U	0.003 U	0.004U
SW8260	Dibromomethane	0 004U	0 005 U	0 005 U	0 008U
SW8260	Dichlorodifluoromethane	0.004U	0 005 U	0 005 U	0.004U
SW8260	Ethyl methacrylate	0 004U	0 005 U	0.005 U	0.004U
SW8260	Ethylbenzene	0 004U	0 003 U	0 003 U	0 004U
SW8260	Iodomethane (methyl iodide)	0.004U	0 005 U	0 005 U	0 004U
SW8260	Isobutanol	0.018U	0 21 U	0 21 U	0 017U
SW8260	m- & p-Xylene (sum of isomers)	0 006U	0 005 U	0 005 U	0 006U
SW8260	Methyl ethyl ketone (2-butanone)	0 018U	0 005 U	0 005 U	0.017U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 018U	0 005 U	0 005 U	0 017U
SW8260	Methyl methacrylate	0.004U	0 005 U	0 005 U	0.004U
SW8260	Methylacrylonitrile	0 089U	0.005 U	0 005 U	0.083U
SW8260	Methylene chloride	0 004F	0.002 UJ	0 002 UJ	0 004F
SW8260	o-Xylene (1,2-dimethylbenzene)	0.004U	0 005 U	0 005 U	0.004U
SW8260	Pentachloroethane	--	0.005 U	0 005 U	--
SW8260	Propane nitrile (propionitrile)	0 083U	0 021 U	0 021 U	0 083U
SW8260	Styrene	0 004U	0 002 U	0 002 U	0.004U
SW8260	Tetrachloroethene (PCE)	0.006U	0 005 U	0 005 U	0 006U
SW8260	Toluene	0 004U	0.005 U	0.005 U	0.004U
SW8260	trans-1,3-Dichloropropene	0.004U	0 005 U	0 005 U	0.004U
SW8260	trans-1,4-Dichloro-2-butene	0.022U	0.005 U	0 005 U	0 021U
SW8260	Trichloroethene (TCE)	0 009U	0 005 U	0 005 U	0.008U
SW8260	Vinyl acetate	0.009U	0 005 U	0 005 U	0 008U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00"	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10"
SW8260	Vinyl chloride	0 008U	0.005 U	0 005 U	0 008U
SW8270	1,2,4,5-Tetrachlorobenzene	0.35 U	0.4 U	0.4 U	0.39 U
SW8270	1,2,4-Trichlorobenzene	0.35 U	0 4 U	0 4 U	0 39 U
SW8270	1,2-Dichlorobenzene	0.35 U	0 4 U	0.4 U	0.39 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.4 U	1 6 U	1 6 U	1 6 U
SW8270	1,3-Dichlorobenzene	0.35 U	0 4 U	0.4 U	0 39 U
SW8270	1,3-Dinitrobenzene	0.35 U	0.4 U	0 4 U	0 39 U
SW8270	1,4-Dichlorobenzene	0.35 U	0 4 U	0.4 U	0 39 U
SW8270	1,4-Dioxane (p-dioxane)	1 4 U	1 6 U	1 6 U	1 6 U
SW8270	1,4-Naphthoquinone	1.8 U	2 U	2 U	2 U
SW8270	1-Naphthylamine	0.7 U	0 81 U	0 8 U	0.79 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.35 U	0 4 U	0 4 U	0.39 U
SW8270	2,3,4,6-Tetrachlorophenol	0 35 U	0 4 U	0.4 U	0.39 U
SW8270	2,4,5-Trichlorophenol	1 8 U	2 U	2 U	2 U
SW8270	2,4,6-Trichlorophenol	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	2,4-Dichlorophenol	0 35 U	0.4 U	0.4 U	0.39 U
SW8270	2,4-Dimethylphenol	0 35 U	0.4 U	0 4 U	0.39 U
SW8270	2,4-Dinitrophenol	1 8 U	2 U	2 U	2 U
SW8270	2,4-Dinitrotoluene	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	2,6-Dichlorophenol	0.7 U	0 81 U	0 8 U	0 79 U
SW8270	2,6-Dinitrotoluene	0.35 U	0 4 U	0 4 U	0 39 U
SW8270	2-Acetylaminofluorene	0.7 U	0 81 U	0 8 U	0 79 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	2-Chloronaphthalene	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	2-Chlorophenol	0 35 U	0 4 U	0.4 U	0 39 U
SW8270	2-Methylnaphthalene	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	2-Nitroaniline	1 8 U	2 U	2 U	2 U
SW8270	2-Nitrophenol	0.35 U	0.4 U	0.4 U	0.39 U
SW8270	2-Picoline (alpha-picoline)	0 35 U	0 4 U	0 4 U	0.39 U
SW8270	3,3'-Dichlorobenzidine	0 7 U	0 81 U	0.8 U	0 79 U
SW8270	3,3'-Dimethylbenzidine	1 8 U	2 U	2 U	2 U
SW8270	3-Methylcholanthrene	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	3-Nitroaniline	1 8 U	2 U	2 U	2 U
SW8270	4,6-Dinitro-2-methylphenol	1.8 R	2 U	2 U	2 R
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	4-Bromophenyl phenyl ether	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	4-Chloro-3-methylphenol	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	4-Chloroaniline	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	4-Chlorophenyl phenyl ether	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	4-Nitroaniline	1 8 U	2 U	2 U	2 U
SW8270	4-Nitrophenol	1 8 U	2 U	2 U	2 U
SW8270	4-Nitroquinoline-N-oxide	1 8 U	2 U	2 U	2 U
SW8270	5-Nitro-o-toluidine	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.7 U	0 81 U	0.8 U	0.79 U
SW8270	Acenaphthene	0.35 U	0 4 U	0 4 U	0.39 U
SW8270	Acenaphthylene	0 35 U	0 4 U	0.4 U	0.39 U
SW8270	Acetophenone	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.8 U	2 U	2 U	2 U
SW8270	Aniline (phenylamine, aminobenzene)	0 35 U	0 4 U	0.4 U	0 39 U
SW8270	Anthracene	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	Aramite (total)	0.7 U	0 81 U	0 8 U	0 79 U
SW8270	Benzo(a)anthracene	0 057 F	0 4 U	0 4 U	0 39 U
SW8270	Benzo(a)pyrene	0 061 F	0 4 U	0 4 U	0 39 U
SW8270	Benzo(b)fluoranthene	0.084 F	0 4 U	0 4 U	0 39 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
SW8270	Benzo(g,h,i)perylene	0.048 F	0 4 U	0.4 U	0.39 U
SW8270	Benzo(k)fluoranthene	0 036 F	0.4 U	0 4 U	0.39 U
SW8270	Benzoic acid	1.8 U	2 U	2 U	2 U
SW8270	Benzyl alcohol	0.35 U	0 4 U	0.4 U	0 39 U
SW8270	Benzyl butyl phthalate	0.16 F	0.4 U	0 4 U	0.39 U
SW8270	bis(2-Chloroethoxy)methane	0.35 U	0 4 U	0.4 U	0 39 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.35 U	0 4 U	0.4 U	0 39 U
SW8270	bis(2-Ethylhexyl)phthalate	0.35 U	0.4 U	0.4 U	0 39 U
SW8270	Chlorobenzilate	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	Chrysene	0 066 F	0 4 U	0 4 U	0 39 U
SW8270	Diallate (total of cis and trans isomers)	0.35 U	0 4 U	0 4 U	0 39 U
SW8270	Dibenz(a,h)anthracene	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	Dibenzofuran	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	Diethyl phthalate	0.35 U	0.4 U	0.4 U	0.39 U
SW8270	Dimethyl phthalate	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	Di-n-butyl phthalate	0 35 U	0 4 U	0 4 U	0.39 U
SW8270	Di-n-octyl phthalate	0 35 U	0.4 U	0.4 U	0.39 U
SW8270	Dinoseb	0.7 U	0.81 U	0 8 U	0.79 U
SW8270	Diphenylamine	0 35 U	0 4 U	0.4 U	0 39 U
SW8270	Ethyl methanesulfonate	0 7 U	0 81 U	0.8 U	0 79 U
SW8270	Fluoranthene	0 1 F	0 4 U	0 4 U	0.39 U
SW8270	Fluorene	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	Hexachlorobenzene	0.35 U	0.4 U	0 4 U	0 39 U
SW8270	Hexachlorobutadiene	0 35 U	0 4 U	0 4 U	0.39 U
SW8270	Hexachlorocyclopentadiene	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	Hexachloroethane	0.35 U	0.4 U	0 4 U	0.39 U
SW8270	Hexachlorophene	5 3 U	6 1 U	6 U	5 9 U
SW8270	Hexachloropropene	1 8 U	2 U	2 U	2 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 068 F	0 4 U	0.4 U	0 049 F
SW8270	Isophorone	0.35 U	0 4 U	0.4 U	0.39 U
SW8270	Isosafrole	0.35 U	0 4 U	0 4 U	0 39 U
SW8270	m- & p-Cresol (sum of isomers)	0.35 U	0 4 U	0 4 U	0 39 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
SW8270	Methapyrilene	0 88 U	1 U	1 U	0.98 U
SW8270	Methyl methanesulfonate	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	Naphthalene	0 35 U	0.4 U	0 4 U	0.39 U
SW8270	Nitrobenzene	0 35 U	0 4 U	0.4 U	0 39 U
SW8270	Nitrosomethylethylamine	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	N-Nitrosodiethylamine	0.7 U	0 81 U	0 8 U	0.79 U
SW8270	N-Nitrosodimethylamine	0 7 U	0 81 U	0 8 U	0 79 U
SW8270	N-Nitrosodi-n-butylamine	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	N-Nitrosodi-n-propylamine	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	N-Nitrosodiphenylamine	0 35 U	0 4 U	0 4 U	0.39 U
SW8270	N-Nitrosomorpholine	0.7 U	0 81 U	0 8 U	0.79 U
SW8270	N-Nitrosopiperidine	0 35 U	0.4 U	0 4 U	0.39 U
SW8270	N-Nitrosopyrrolidine	0 7 U	0.81 U	0 8 U	0 79 U
SW8270	o-Cresol (2-methylphenol)	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	o-Toluidine	0 7 U	0 81 U	0 8 U	0.79 U
SW8270	p-Dimethylaminoazobenzene	0 7 U	0 81 U	0 8 U	0 79 U
SW8270	Pentachlorobenzene	0 35 U	0.4 U	0 4 U	0.39 U
SW8270	Pentachloronitrobenzene	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	Pentachlorophenol	1 8 U	2 U	2 U	2 U
SW8270	Phenacetin	0 35 U	0.4 U	0 4 U	0 39 U
SW8270	Phenanthrene	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	Phenol	0 35 U	0 4 U	0 4 U	0 39 U
SW8270	p-Phenylenediamine	1.4 U	1 6 U	1.6 U	1 6 U
SW8270	Pronamide	0 35 U	0.4 U	0.4 U	0 39 U
SW8270	Pyrene	0 095 F	0.4 U	0 4 U	0 39 U
SW8270	Pyridine	0 7 U	0 81 U	0 8 U	0 79 U
SW8270	Safrole	0 35 U	0 4 U	0 4 U	0 39 U
TX1005	Petroleum Hydrocarbons	57 U	60 U	60 U	31 F

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-00'	BHGLSWMU33002-05'	BHGLSWMU33002-05' Duplicate	BHGLSWMU33002-10'
TX1005	Petroleum Hydrocarbons- Diesel	57 U	60 U	60 U	27 F
TX1005	Petroleum Hydrocarbons- Gasoline	57 U	60 U	60 U	4 3 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

-- = Not analyzed.

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW6010	Antimony	3.9 U	3 3 U	3.7 U	4 4 UJ	4 1 UJ
SW6010	Arsenic	0 65 F	3 F	4 8	5.2 J	1.3 F
SW6010	Barium	12.1 F	85 8	82.2	57 6	13.5 F
SW6010	Beryllium	0 13 F	0.55 J	1 1	0 73	0 09 F
SW6010	Cadmium	0 39 U	0.11 F	0 37 U	0 44 U	0 41 U
SW6010	Chromium (total)	3 9 F	9 8	15 7	10 7	4 2 F
SW6010	Cobalt	1 1 F	3 6 F	2 7 F	5 2 F	2 7 F
SW6010	Copper	2 5 F	6 6 F	7 3 F	9 3	3 7 F
SW6010	Lead	3 3	11	7 9	--	--
SW7421	Lead	--	--	--	15 7	4 5F
SW6010	Nickel	3 3 F	6 7 F	11 8	13	4 1 F
SW6010	Tin	31 2 U	26 8 U	29 8 U	35 U	32.7 U
SW6010	Vanadium	6 5 F	22	32 2	26 6	8 F
SW6010	Zinc	6 9 F	18.9 F	21.1 F	20.3 F	10 2 F
SW7471	Mercury	0 04 U	0.04	0.04 U	0.04 U	0 04 U
SW7740	Selenium	0.23 U	0 21 UJ	0 23 UJ	0.26 UJ	0 25 UJ
SW7761	Silver	0.15 UJ	0 14 UJ	0.15 UJ	0 17 U	0 16 U
SW7841	Thallium	0 76 UJ	0 71 UJ	0 76 UJ	0 87 U	0 82 U
SW8260	1,1,1,2-Tetrachloroethane	0.004U	0.004U	0.004U	0.003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004U	0 004U	0 004U	0.004 U	0.004 U
SW8260	1,1,2,2-Tetrachloroethane	0 004U	0 004U	0 004U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 004U	0 004U	0.004U	0.005 U	0 005 U
SW8260	1,1-Dichloroethane	0 004U	0.004U	0.004U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 006U	0 005U	0 005U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0.018U	0 017U	0 018U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0.009U	0 008U	0.009U	0.005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.004U	0 004U	0.004U	0 003 U	0.003 U
SW8260	1,2-Dichloroethane	0 004U	0 004U	0 004U	0.003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0.006U	0 005U	0 005U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 004U	0 004U	0.004U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 004U	0 004U	0 004U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 009U	0 008U	0.009U	0 005 U	0.005 U
SW8260	2-Hexanone	0 018U	0.017U	0 018U	0.005 U	0 005 U
SW8260	Acetone	0 008U	0 008U	0 019U	0.005 U	0 005 U
SW8260	Acetonitrile	0.091U	0 085U	0 088U	0 04 U	0 037 U
SW8260	Acrolein	0 091U	0 085U	0 088U	0 099 U	0 092 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW8260	Acrylonitrile	0.091U	0 085U	0 088U	0 04 U	0 037 U
SW8260	Allyl chloride (3-chloropropene)	0 009U	0.008U	0 009U	0 01 U	0 009 U
SW8260	Benzene	0 004U	0 004U	0 004U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0.004U	0.004U	0.004U	0 004 U	0 004 U
SW8260	Bromoform	0 006U	0.005U	0 005U	0.005 U	0 005 U
SW8260	Bromomethane	0 004U	0.004U	0.004U	0.005 U	0 005 U
SW8260	Carbon disulfide	0 004U	0 004U	0 004U	0.005 U	0 005 U
SW8260	Carbon tetrachloride	0 009U	0.008U	0 009U	0.005 U	0.005 U
SW8260	Chlorobenzene	0.004U	0 004U	0.004U	0.002 U	0 002 U
SW8260	Chloroethane	0 004U	0.004U	0.004U	0 005 U	0.005 U
SW8260	Chloroform	0 004U	0 004U	0 004U	0 002 U	0 002 U
SW8260	Chloromethane	0 006U	0 006U	0 006U	0 005 U	0.005 U
SW8260	cis-1,3-Dichloropropene	0 004U	0 004U	0 004U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0.004U	0.004U	0 004U	0 003 U	0 003 U
SW8260	Dibromomethane	0 009U	0 008U	0 009U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0 004U	0 004U	0.004U	0.005 U	0 005 U
SW8260	Ethyl methacrylate	0 004U	0 004U	0 004U	0.005 U	0 005 U
SW8260	Ethylbenzene	0.004U	0 004U	0 004U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 004U	0 004U	0.004U	0.005 U	0 005 U
SW8260	Isobutanol	0 018U	0 017U	0 018U	0 2 U	0 18 U
SW8260	m- & p-Xylene (sum of isomers)	0 006U	0.006U	0.006U	0.005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 018U	0 017U	0 018U	0.005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 018U	0 017U	0 018U	0.005 U	0 005 U
SW8260	Methyl methacrylate	0 004U	0 004U	0 004U	0 005 U	0.005 U
SW8260	Methylacrylonitrile	0 091U	0 085U	0 088U	0 005 U	0 005 U
SW8260	Methylene chloride	0 004F	0 004F	0 004F	0 002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 004U	0 004U	0.004U	0 005 U	0 005 U
SW8260	Pentachloroethane	--	--	--	0 005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 091U	0 085U	0.088U	0.02 U	0 018 U
SW8260	Styrene	0 004U	0 004U	0 004U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 006U	0 006U	0 006U	0 005 U	0 005 U
SW8260	Toluene	0 004U	0 004U	0 004U	0.005 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0 004U	0 004U	0 004U	0 005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 023U	0.021U	0 022U	0 005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 009U	0 008U	0 009U	0.005 U	0 005 U
SW8260	Vinyl acetate	0 009U	0 008U	0 009U	0 005 U	0 005 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW8260	Vinyl chloride	0.008U	0 008U	0 008U	0.005 U	0.005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	1,2,4-Trichlorobenzene	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	1,2-Dichlorobenzene	0.38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 5 U	1 4 U	1.6 U	1.5 U	1 4 U
SW8270	1,3-Dichlorobenzene	0 38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	1,3-Dinitrobenzene	0.38 U	0 36 U	0 4 U	0 39 U	0.36 U
SW8270	1,4-Dichlorobenzene	0.38 U	0.36 U	0 4 U	0.39 U	0 36 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1 4 U	1.6 U	1 5 U	1 4 U
SW8270	1,4-Naphthoquinone	1 9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	1-Naphthylamine	0.77 U	0 73 U	0.81 U	0.77 U	0 72 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	2,3,4,6-Tetrachlorophenol	0.38 U	0 36 U	0.4 U	0.39 U	0 36 U
SW8270	2,4,5-Trichlorophenol	1.9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	2,4,6-Trichlorophenol	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	2,4-Dichlorophenol	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	2,4-Dimethylphenol	0.38 U	0 36 U	0.4 U	0.39 U	0.36 U
SW8270	2,4-Dinitrophenol	1 9 U	1 8 U	2 U	1.9 U	1 8 U
SW8270	2,4-Dinitrotoluene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	2,6-Dichlorophenol	0.77 U	0 73 U	0 81 U	0 77 U	0 72 U
SW8270	2,6-Dinitrotoluene	0 38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	2-Acetylaminofluorene	0 77 U	0 73 U	0 81 U	0.77 U	0.72 U

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Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.77 U	0 73 U	0 81 U	0 77 U	0 72 U
SW8270	2-Chloronaphthalene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	2-Chlorophenol	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	2-Methylnaphthalene	0 38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	2-Nitroaniline	1 9 U	1 8 U	2 U	1.9 U	1 8 U
SW8270	2-Nitrophenol	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	2-Picoline (alpha-picoline)	0 38 U	0.36 U	0 4 U	0.39 U	0 36 U
SW8270	3,3'-Dichlorobenzidine	0.77 U	0 73 U	0 81 U	0.77 U	0.72 U
SW8270	3,3'-Dimethylbenzidine	1.9 U	1.8 U	2 U	1 9 U	1 8 U
SW8270	3-Methylcholanthrene	0.38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	3-Nitroaniline	1 9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	4,6-Dinitro-2-methylphenol	1.9 R	1 8 R	2 R	1 9 U	1.8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 77 U	0 73 U	0 81 U	0 77 U	0 72 U
SW8270	4-Bromophenyl phenyl ether	0.38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	4-Chloro-3-methylphenol	0 77 U	0.73 U	0 81 U	0 77 U	0 72 U
SW8270	4-Chloroaniline	0.77 U	0 73 U	0 81 U	0.77 U	0 72 U
SW8270	4-Chlorophenyl phenyl ether	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	4-Nitroaniline	1.9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	4-Nitrophenol	1.9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	4-Nitroquinoline-N-oxide	1 9 U	1 8 U	2 U	1 9 U	1.8 U
SW8270	5-Nitro-o-toluidine	0 77 U	0 73 U	0 81 U	0.77 U	0.72 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 77 U	0.73 U	0 81 U	0 77 U	0.72 U
SW8270	Acenaphthene	0.38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	Acenaphthylene	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	Acetophenone	0 77 U	0 73 U	0.81 U	0 77 U	0 72 U
SW8270	alpha, alpha-Dimethylphenethylamine	1 9 U	1 8 U	2 U	1 9 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0 38 U	0.36 U	0.4 U	0 39 U	0 36 U
SW8270	Anthracene	0 38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	Aramite (total)	0.77 U	0.73 U	0 81 U	0 77 U	0 72 U
SW8270	Benzo(a)anthracene	0 38 U	0.36 U	0.4 U	0 39 U	0 36 U
SW8270	Benzo(a)pyrene	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	Benzo(b)fluoranthene	0 38 U	0 36 U	0 4 U	0 39 U	0.36 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW8270	Benzo(g,h,i)perylene	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	Benzo(k)fluoranthene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Benzoic acid	1.9 U	1 8 U	2 U	1.9 U	1 8 U
SW8270	Benzyl alcohol	0 38 U	0.36 U	0 4 U	0 39 U	0.36 U
SW8270	Benzyl butyl phthalate	0 38 U	0 36 U	0.4 U	0.39 U	0.36 U
SW8270	bis(2-Chloroethoxy)methane	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	bis(2-Ethylhexyl)phthalate	0.38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	Chlorobenzilate	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Chrysene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Diallate (total of cis and trans isomers)	0 38 U	0 36 U	0.4 U	0 39 U	0.36 U
SW8270	Dibenz(a,h)anthracene	0 38 U	0.36 U	0.4 U	0 39 U	0 36 U
SW8270	Dibenzofuran	0.38 U	0.36 U	0.4 U	0 39 U	0 36 U
SW8270	Diethyl phthalate	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	Dimethyl phthalate	0 38 U	0 36 U	0 4 U	0 39 U	0.36 U
SW8270	Di-n-butyl phthalate	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	Di-n-octyl phthalate	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Dinoseb	0 77 U	0 73 U	0.81 U	0 77 U	0 72 U
SW8270	Diphenylamine	0 38 U	0.36 U	0 4 U	0 39 U	0.36 U
SW8270	Ethyl methanesulfonate	0 77 U	0 73 U	0 81 U	0 77 U	0 72 U
SW8270	Fluoranthene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Fluorene	0 38 U	0 36 U	0.4 U	0.39 U	0 36 U
SW8270	Hexachlorobenzene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Hexachlorobutadiene	0 38 U	0 36 U	0 4 U	0 39 U	0.36 U
SW8270	Hexachlorocyclopentadiene	0 38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	Hexachloroethane	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	Hexachlorophene	5 8 U	5.5 U	6.1 U	5.8 U	5 4 U
SW8270	Hexachloropropene	1 9 U	1 8 U	2 U	1 9 U	1.8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Isophorone	0 38 U	0.36 U	0.4 U	0.39 U	0 36 U
SW8270	Isosafrole	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	m- & p-Cresol (sum of isomers)	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
SW8270	Methapyrilene	0.96 U	0.91 U	1 U	0 97 U	0 9 U
SW8270	Methyl methanesulfonate	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	Naphthalene	0.38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	Nitrobenzene	0.38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	Nitrosomethylethylamine	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	N-Nitrosodiethylamine	0 77 U	0.73 U	0.81 U	0 77 U	0 72 U
SW8270	N-Nitrosodimethylamine	0 77 U	0 73 U	0 81 U	0.77 U	0.72 U
SW8270	N-Nitrosodi-n-butylamine	0 38 U	0 36 U	0.4 U	0 39 U	0 36 U
SW8270	N-Nitrosodi-n-propylamine	0 38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	N-Nitrosodiphenylamine	0 38 U	0 36 U	0 4 U	0 39 U	0 36 U
SW8270	N-Nitrosomorpholine	0.77 U	0.73 U	0 81 U	0 77 U	0 72 U
SW8270	N-Nitrosopiperidine	0 38 U	0.36 U	0 4 U	0.39 U	0 36 U
SW8270	N-Nitrosopyrrolidine	0 77 U	0 73 U	0 81 U	0.77 U	0 72 U
SW8270	o-Cresol (2-methylphenol)	0 38 U	0 36 U	0 4 U	0.39 U	0 36 U
SW8270	o-Toluidine	0 77 U	0 73 U	0.81 U	0 77 U	0 72 U
SW8270	p-Dimethylaminoazobenzene	0.77 U	0 73 U	0 81 U	0.77 U	0 72 U
SW8270	Pentachlorobenzene	0.38 U	0.36 U	0 4 U	0 39 U	0 36 U
SW8270	Pentachloronitrobenzene	0 38 U	0.36 U	0 4 U	0.39 U	0 36 U
SW8270	Pentachlorophenol	1 9 U	1.8 U	2 U	1 9 U	1.8 U
SW8270	Phenacetin	0 38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	Phenanthrene	0 38 U	0.36 U	0.4 U	0.39 U	0 36 U
SW8270	Phenol	0.38 U	0 36 U	0 4 U	0.39 U	0.36 U
SW8270	p-Phenylenediamine	1.5 U	1.4 U	1.6 U	1 5 U	1 4 U
SW8270	Pronamide	0.38 U	0.36 U	0 4 U	0 39 U	0.36 U
SW8270	Pyrene	0.38 U	0 36 U	0 4 U	0 39 U	0.36 U
SW8270	Pyridine	0 77 U	0.73 U	0.81 U	0 77 U	0 72 U
SW8270	Safrole	0 38 U	0.36 U	0 4 U	0.39 U	0 36 U
TX1005	Petroleum Hydrocarbons	23 F	27 F	34 F	57 U	59 U

Table C.2
Analytical Data-Soil
SWMU 33
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU33002-15'	BHGLSWMU33003-00'	BHGLSWMU33003-05'	BHGLSWMU33003-10'	BHGLSWMU33003-15'
TX1005	Petroleum Hydrocarbons- Diesel	20 F	23 F	30 F	57 U	59 U
TX1005	Petroleum Hydrocarbons- Gasoline	3.6 F	4 F	4 2 F	57 U	59 U

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

-- = Not analyzed.

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Table [illegible]
Appendix IX Analytical Data-Soil
SWMU 34
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU3401-00'	BHGLSWMU3401-05'	BHGLSWMU3401-05' Duplicate	BHGLSWMU3401-10'	BHGLSWMU3402-00'	BHGLSWMU3402-05'
M5500	Ethylene Glycol	6U	6U	6U	6U	6U	6U
SW6010	Antimony	4 8 UJ	4 6 UJ	4 4 UJ	5 UJ	4 6 UJ	4 6 UJ
SW6010	Arsenic	3 5 F	2.7F	3 7 F	4 3 F	3 6 F	5 3 J
SW6010	Barium	85	74 4	57 2	27 3 F	85.8	45 9
SW6010	Beryllium	0 88	0 43	0.36	0.34	0 78	0 38
SW6010	Cadmium	0 06 F	0 11F	0 14 F	0 14 F	0 07 F	0 06 F
SW6010	Chromium (total)	11 6 J	7 8 F	5 9 F	8 4 F	11 9 J	8.1 F
SW6010	Cobalt	4 9 F	2 8F	3 2 F	2 4 F	5 3 F	3 2 F
SW6010	Copper	8 3 F	3 4 F	2 8 F	3 6 F	8 8 F	5 4 F
SW6010	Lead	11 1 J	8 J	6 3 J	4 4 J	12 8 J	7 2 J
SW6010	Nickel	10 5	5 1 F	4 9 F	4 8 F	9 4	7 F
SW6010	Tin	38 3 U	36 4 U	35 1 U	39 8 U	36 6 U	37 1 U
SW6010	Vanadium	27 6 F	21 2F	30 6	10 1 F	29	21 9 F
SW6010	Zinc	16 1 F	12 4 F	10 6 F	9 4 F	17.1 F	16 1 F
SW7471	Mercury	0 04 U	0 04 U	0 04 U	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0 18 F	0 56 UJ	0 55 UJ	0 55 UJ	0 25 F	0 24 UJ
SW7761	Silver	0.2 U	0 19 U	0 18 U	0 18 U	0.18 U	0 16 U
SW7841	Thallium	0 98 UJ	0 94 UJ	0 92 UJ	0 92 UJ	0 2 F	0 81 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0 002 U	0 003 U	0.003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 003 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0 002 U	0 002 U	0.002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 U	0 003 U	0 002 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0 002 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0 002 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	2-Hexanone	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Acetone	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Acetonitrile	0.044 U	0 037 U	0 034 U	0 042 U	0 042 U	0 037 U
SW8260	Acrolein	0 11 U	0 092 U	0 086 U	0 1 U	0 1 U	0 093 U
SW8260	Acrylonitrile	0 044 U	0 037 U	0 034 U	0 042 U	0.042 U	0 037 U
SW8260	Allyl chloride (3-chloropropene)	0 011 U	0 009 U	0 009 U	0 01 U	0 01 U	0 009 U
SW8260	Benzene	0 002 U	0 002 U	0 002 U	0 002 U	0 002	0 002 U
SW8260	Bromodichloromethane	0 004 U	0 004 U	0 003 U	0 004 U	0 004 U	0 004 U
SW8260	Bromoform	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Bromomethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U

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Table C.3
Appendix IX Analytical Data-Soil
SWMU 34
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLSWMU3401-00'	BHGLSWMU3401-05'	BHGLSWMU3401-05' Duplicate	BHGLSWMU3401-10'	BHGLSWMU3402-00'	BHGLSWMU3402-05'
SW8260	Carbon disulfide	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0 006 U	0 004 U	0 004 U	0 005 U	0.005 U	0 005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloroethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Chloroform	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0 003 U	0 003 U	0 002 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0 006 R	0 004 R	0 004 R	0 005 R	0 005 R	0 005 R
SW8260	Ethyl methacrylate	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 002 U	0 003 U	0 004	0 003 U
SW8260	Iodomethane (methyl iodide)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Isobutanol	0 22 U	0 18 U	0 17 U	0 21 U	0 21 U	0 18 U
SW8260	m- & p-Xylene (sum of isomers)	0 006 U	0 004 U	0 004 U	0.005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 006 U	0 004 U	0 004 U	0.005 U	0 005 U	0 005 U
SW8260	Methyl methacrylate	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Methylacrylonitrile	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Methylene chloride	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Pentachloroethane	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 022 U	0 018 U	0 017 U	0 021 U	0 021 U	0 018 U
SW8260	Styrene	0 002 U	0.002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Toluene	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0 006 U	0 004 U	0 004 U	0 005 U	0.005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl acetate	0 006 U	0 004 U	0 004 U	0 005 U	0.005 U	0 005 U
SW8260	Vinyl chloride	0.006 U	0 004 U	0 004 U	0 005 U	0 005 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	1,2,4-Trichlorobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	1,2-Dichlorobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 6 U	1 5 U	1 5 U	1 5 U	1 5 U	1 4 U
SW8270	1,3-Dichlorobenzene	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	1,3-Dinitrobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	1,4-Dichlorobenzene	0.41 U	0 38 U	0 37 U	0 38 U	0.38 U	0 36 U
SW8270	1,4-Dioxane (p-dioxane)	1.6 U	1 5 U	1 5 U	1 5 U	1 5 U	1 4 U
SW8270	1,4-Naphthoquinone	4 1 U	3 8 U	3 7 U	3 8 U	3 8 U	3 6 U
SW8270	1-Naphthylamine	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U

Table C.3
Appendix IX Analytical Data-Soil
SWMU 34
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU3401-00'	BHGLSWMU3401-05'	BHGLSWMU3401-05' Duplicate	BHGLSWMU3401-10'	BHGLSWMU3402-00'	BHGLSWMU3402-05'
SW8270	2,3,4,6-Tetrachlorophenol	0 41 U	0 38 U	0.37 U	0 38 U	0.38 U	0 36 U
SW8270	2,4,5-Trichlorophenol	2 U	1 9 U	1 8 U	1.9 U	1 9 U	1 8 U
SW8270	2,4,6-Trichlorophenol	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	2,4-Dichlorophenol	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	2,4-Dimethylphenol	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	2,4-Dinitrophenol	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	2,4-Dinitrotoluene	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	2,6-Dichlorophenol	0 81 U	0 76 U	0 74 U	0.76 U	0 76 U	0.72 U
SW8270	2,6-Dinitrotoluene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	2-Acetylaminofluorene	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	2-Chloronaphthalene	0.41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	2-Chlorophenol	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	2-Methylnaphthalene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	2-Nitroaniline	2 U	1.9 U	1 8 U	1 9 U	1.9 U	1 8 U
SW8270	2-Nitrophenol	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	2-Picoline (alpha-picoline)	0.41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	3,3'-Dichlorobenzidine	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	3,3'-Dimethylbenzidine	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	3-Methylcholanthrene	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	3-Nitroaniline	2 U	1 9 U	1.8 U	1 9 U	1.9 U	1.8 U
SW8270	4,6-Dinitro-2-methylphenol	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	4-Bromophenyl phenyl ether	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	4-Chloro-3-methylphenol	0 81 U	0 76 U	0.74 U	0.76 U	0 76 U	0 72 U
SW8270	4-Chloroaniline	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	4-Chlorophenyl phenyl ether	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	4-Nitroaniline	2 U	1 9 U	1 8 U	1.9 U	1 9 U	1 8 U
SW8270	4-Nitrophenol	2 U	1 9 U	1 8 U	1 9 U	1.9 U	1 8 U
SW8270	4-Nitroquinoline-N-oxide	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1.8 U
SW8270	5-Nitro-o-toluidine	0 81 U	0 76 U	0 74 U	0.76 U	0 76 U	0 72 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Acenaphthene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Acenaphthylene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Acetophenone	0 81 U	0.76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	alpha, alpha-Dimethylphenethylamine	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Anthracene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Aramite (total)	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Benzo(a)anthracene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Benzo(a)pyrene	0 043 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Benzo(b)fluoranthene	0 086 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U

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Table C.3
Appendix IX Analytical Data-Soil
SWMU 34
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU3401-00'	BHGLSWMU3401-05'	BHGLSWMU3401-05' Duplicate	BHGLSWMU3401-10'	BHGLSWMU3402-00'	BHGLSWMU3402-05'
SW8270	Benzo(g,h,i)perylene	0 05 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Benzo(k)fluoranthene	0.41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Benzoic acid	0 43 F	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	Benzyl alcohol	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Benzyl butyl phthalate	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	bis(2-Chloroethoxy)methane	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	bis(2-Ethylhexyl)phthalate	0 41 U	0.38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Chlorobenzilate	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	Chrysene	0 076 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Diallate (total of cis and trans isomers)	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Dibenz(a,h)anthracene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Dibenzofuran	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Diethyl phthalate	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Dimethyl phthalate	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Di-n-butyl phthalate	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Di-n-octyl phthalate	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Dinoseb	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Diphenylamine	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	Ethyl methanesulfonate	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Fluoranthene	0 07 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Fluorene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Hexachlorobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Hexachlorobutadiene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Hexachlorocyclopentadiene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Hexachloroethane	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	Hexachlorophene	6 1 U	5 7 U	5 5 U	5 7 U	5 7 U	5 4 U
SW8270	Hexachloropropene	2 U	1 9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 055 F	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Isophorone	0 41 U	0.38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	Isosafrole	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	m- & p-Cresol (sum of isomers)	0 41 U	0.38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Methapyrilene	1 U	0 94 U	0 92 U	0 96 U	0 95 U	0 9 U
SW8270	Methyl methanesulfonate	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	Naphthalene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Nitrobenzene	0.41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Nitrosomethylethylamine	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	N-Nitrosodiethylamine	0 81 U	0.76 U	0 74 U	0 76 U	0 76 U	0.72 U
SW8270	N-Nitrosodimethylamine	0.81 U	0 76 U	0.74 U	0 76 U	0.76 U	0 72 U
SW8270	N-Nitrosodi-n-butylamine	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	N-Nitrosodi-n-propylamine	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	N-Nitrosodiphenylamine	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U

Table C.3
Appendix IX Analytical Data-Soil
SWMU 34
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU3401-00'	BHGLSWMU3401-05'	BHGLSWMU3401-05' Duplicate	BHGLSWMU3401-10'	BHGLSWMU3402-00'	BHGLSWMU3402-05'
SW8270	N-Nitrosomorpholine	0 81 U	0 76 U	0 74 U	0.76 U	0 76 U	0 72 U
SW8270	N-Nitrosopiperidine	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	N-Nitrosopyrrolidine	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	o-Cresol (2-methylphenol)	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U
SW8270	o-Toluidine	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0.72 U
SW8270	p-Dimethylaminoazobenzene	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Pentachlorobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Pentachloronitrobenzene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Pentachlorophenol	2 U	1.9 U	1 8 U	1 9 U	1 9 U	1 8 U
SW8270	Phenacetin	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Phenanthrene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Phenol	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	p-Phenylenediamine	1 6 U	1 5 U	1 5 U	1.5 U	1 5 U	1 4 U
SW8270	Pronamide	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Pyrene	0 41 U	0 38 U	0 37 U	0 38 U	0 38 U	0 36 U
SW8270	Pyridine	0 81 U	0 76 U	0 74 U	0 76 U	0 76 U	0 72 U
SW8270	Safrole	0 41 U	0 38 U	0 37 U	0.38 U	0 38 U	0 36 U

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data

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Table C.4
Analytical Data-Soil
SWMU 39
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU39001-00'	BHGLSWMU39001-05'
SW6010	Antimony	3.5 UJ	4.3 UJ
SW6010	Arsenic	1.5 F	6 J
SW6010	Barium	37.7	57.2
SW6010	Beryllium	0.16 F	0.8
SW6010	Cadmium	0.35 U	0 43 U
SW6010	Chromium (total)	8.2	12.6
SW6010	Cobalt	3.2 F	4.9 F
SW6010	Copper	4.4 F	6.7 F
SW6010	Nickel	3 9 F	10.3
SW6010	Tin	28 U	34.5 U
SW6010	Vanadium	10.5 F	27.6
SW6010	Zinc	7 7 F	22 3 F
SW7421	Lead	7.6	15 4
SW7471	Mercury	0 04 U	0.04 U
SW7740	Selenium	0.18 UJ	0.24 UJ
SW7761	Silver	0.12 U	0 16 U
SW7841	Thallium	0.6 U	0.8 U
SW8260	1,1,1,2-Tetrachloroethane	0.003 U	0.003 U
SW8260	1,1,1-Trichloroethane	0.004 U	0.004 U
SW8260	1,1,2,2-Tetrachloroethane	0.002 U	0.002 U
SW8260	1,1,2-Trichloroethane	0 004 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0.002 U
SW8260	1,1-Dichloroethene	0.004 U	0 005 U
SW8260	1,2,3-Trichloropropane	0.004 U	0.005 U
SW8260	1,2-Dibromo-3-chloropropane	0.004 U	0.005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 U	0.003 U
SW8260	1,2-Dichloroethane	0.003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0.004 U	0.005 U
SW8260	1,2-Dichloroethene, trans-	0.003 U	0.003 U
SW8260	1,2-Dichloropropane	0.002 U	0.002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0.004 U	0.005 U
SW8260	2-Hexanone	0.004 U	0.005 U
SW8260	Acetone	0.004 U	0.005 U
SW8260	Acetonitrile	0.036 U	0.043 U
SW8260	Acrolein	0.09 U	0.11 U
SW8260	Acrylonitrile	0.036 U	0.043 U
SW8260	Allyl chloride (3-chloropropene)	0.009 U	0.011 U
SW8260	Benzene	0.002 U	0.002 U
SW8260	Bromodichloromethane	0.004 U	0.004 U
SW8260	Bromoform	0.004 U	0.005 U
SW8260	Bromomethane	0.004 U	0.005 U
SW8260	Carbon disulfide	0.004 U	0.005 U
SW8260	Carbon tetrachloride	0.004 U	0.005 U
SW8260	Chlorobenzene	0.002 U	0 002 U
SW8260	Chloroethane	0.004 U	0.005 U
SW8260	Chloroform	0.002 U	0.002 U
SW8260	Chloromethane	0.004 U	0.005 U

Table C.4
Analytical Data-Soil
SWMU 39
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU39001-00'	BHGLSWMU39001-05'
SW8260	cis-1,3-Dichloropropene	0.004 U	0 005 U
SW8260	Dibromochloromethane	0.003 U	0.003 U
SW8260	Dibromomethane	0.004 U	0.005 U
SW8260	Dichlorodifluoromethane	0.004 U	0.005 U
SW8260	Ethyl methacrylate	0.004 U	0.005 U
SW8260	Ethylbenzene	0.003 U	0.003 U
SW8260	Iodomethane (methyl iodide)	0.004 U	0 005 U
SW8260	Isobutanol	0 18 U	0.21 U
SW8260	m- & p-Xylene (sum of isomers)	0.004 U	0.005 U
SW8260	Methyl ethyl ketone (2-butanone)	0.004 U	0.005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.004 U	0.005 U
SW8260	Methyl methacrylate	0.004 U	0.005 U
SW8260	Methylacrylonitrile	0 004 U	0.005 U
SW8260	Methylene chloride	0.002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.004 U	0 005 U
SW8260	Pentachloroethane	0 004 U	0.005 U
SW8260	Propane nitrile (propionitrile)	0.018 U	0.021 U
SW8260	Styrene	0.002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0.004 U	0.005 U
SW8260	Toluene	0.004 U	0.005 U
SW8260	trans-1,3-Dichloropropene	0.004 U	0.005 U
SW8260	trans-1,4-Dichloro-2-butene	0.004 U	0 005 U
SW8260	Trichloroethene (TCE)	0.004 U	0.005 U
SW8260	Vinyl acetate	0.004 U	0.005 U
SW8260	Vinyl chloride	0.004 U	0.005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0.36 U	0.37 U
SW8270	1,2,4-Trichlorobenzene	0.36 U	0.37 U
SW8270	1,2-Dichlorobenzene	0.36 U	0.37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.4 U	1.5 U
SW8270	1,3-Dichlorobenzene	0.36 U	0.37 U
SW8270	1,3-Dinitrobenzene	0.36 U	0.37 U
SW8270	1,4-Dichlorobenzene	0.36 U	0.37 U
SW8270	1,4-Dioxane (p-dioxane)	1.4 U	1.5 U
SW8270	1,4-Naphthoquinone	1.8 U	1.8 U
SW8270	1-Naphthylamine	0.72 U	0.74 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 36 U	0.37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.36 U	0.37 U
SW8270	2,4,5-Trichlorophenol	1.8 U	1.8 U
SW8270	2,4,6-Trichlorophenol	0.36 U	0.37 U
SW8270	2,4-Dichlorophenol	0.36 U	0.37 U
SW8270	2,4-Dimethylphenol	0.36 U	0.37 U
SW8270	2,4-Dinitrophenol	1.8 U	1.8 U
SW8270	2,4-Dinitrotoluene	0.36 U	0.37 U
SW8270	2,6-Dichlorophenol	0.72 U	0.74 U
SW8270	2,6-Dinitrotoluene	0.36 U	0.37 U
SW8270	2-Acetylaminofluorene	0.72 U	0.74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.72 U	0.74 U

Table C.4
Analytical Data-Soil
SWMU 39
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU39001-00'	BHGLSWMU39001-05'
SW8270	2-Chloronaphthalene	0.36 U	0.37 U
SW8270	2-Chlorophenol	0 36 U	0 37 U
SW8270	2-Methylnaphthalene	0.36 U	0 37 U
SW8270	2-Nitroaniline	1.8 U	1.8 U
SW8270	2-Nitrophenol	0.36 U	0.37 U
SW8270	2-Picoline (alpha-picoline)	0.36 U	0.37 U
SW8270	3,3'-Dichlorobenzidine	0 72 U	0.74 U
SW8270	3,3'-Dimethylbenzidine	1.8 U	1.8 U
SW8270	3-Methylcholanthrene	0.36 U	0.37 U
SW8270	3-Nitroaniline	1.8 U	1.8 U
SW8270	4,6-Dinitro-2-methylphenol	1.8 U	1.8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.72 U	0.74 U
SW8270	4-Bromophenyl phenyl ether	0.36 U	0.37 U
SW8270	4-Chloro-3-methylphenol	0.72 U	0.74 U
SW8270	4-Chloroaniline	0.72 U	0.74 U
SW8270	4-Chlorophenyl phenyl ether	0.36 U	0.37 U
SW8270	4-Nitroaniline	1.8 U	1.8 U
SW8270	4-Nitrophenol	1.8 U	1.8 U
SW8270	4-Nitroquinoline-N-oxide	1.8 U	1.8 U
SW8270	5-Nitro-o-toluidine	0.72 U	0.74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.72 U	0.74 U
SW8270	Acenaphthene	0.36 U	0 37 U
SW8270	Acenaphthylene	0.36 U	0.37 U
SW8270	Acetophenone	0.72 U	0.74 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.8 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0.36 U	0.37 U
SW8270	Anthracene	0.36 U	0 37 U
SW8270	Aramite (total)	0.72 U	0.74 U
SW8270	Benzo(a)anthracene	0.36 U	0.37 U
SW8270	Benzo(a)pyrene	0.36 U	0.37 U
SW8270	Benzo(b)fluoranthene	0.36 U	0.37 U
SW8270	Benzo(g,h,i)perylene	0.36 U	0.37 U
SW8270	Benzo(k)fluoranthene	0.36 U	0.37 U
SW8270	Benzoic acid	1.8 U	1.8 U
SW8270	Benzyl alcohol	0 36 U	0.37 U
SW8270	Benzyl butyl phthalate	0.36 U	0.37 U
SW8270	bis(2-Chloroethoxy)methane	0.36 U	0 37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.36 U	0.37 U
SW8270	bis(2-Ethylhexyl)phthalate	0.053 F	0.37 U
SW8270	Chlorobenzilate	0.36 U	0.37 U
SW8270	Chrysene	0 36 U	0 37 U
SW8270	Diallate (total of cis and trans isomers)	0.36 U	0.37 U
SW8270	Dibenz(a,h)anthracene	0.36 U	0.37 U
SW8270	Dibenzofuran	0.36 U	0.37 U
SW8270	Diethyl phthalate	0.36 U	0.37 U
SW8270	Dimethyl phthalate	0.36 U	0 37 U
SW8270	Di-n-butyl phthalate	0.36 U	0 37 U

Table C.4
Analytical Data-Soil
SWMU 39
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU39001-00'	BHGLSWMU39001-05'
SW8270	Di-n-octyl phthalate	0.36 U	0.37 U
SW8270	Dinoseb	0.72 U	0.74 U
SW8270	Diphenylamine	0.36 U	0.37 U
SW8270	Ethyl methanesulfonate	0.72 U	0.74 U
SW8270	Fluoranthene	0.36 U	0.37 U
SW8270	Fluorene	0 36 U	0.37 U
SW8270	Hexachlorobenzene	0.36 U	0.37 U
SW8270	Hexachlorobutadiene	0.36 U	0.37 U
SW8270	Hexachlorocyclopentadiene	0.36 U	0.37 U
SW8270	Hexachloroethane	0.36 U	0.37 U
SW8270	Hexachlorophene	5.4 U	5.6 U
SW8270	Hexachloropropene	1.8 U	1.8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0.36 U	0.37 U
SW8270	Isophorone	0.36 U	0.37 U
SW8270	Isosafrole	0.36 U	0.37 U
SW8270	m- & p-Cresol (sum of isomers)	0.36 U	0.37 U
SW8270	Methapyrilene	0.9 U	0.93 U
SW8270	Methyl methanesulfonate	0.36 U	0.37 U
SW8270	Naphthalene	0.36 U	0.37 U
SW8270	Nitrobenzene	0.36 U	0.37 U
SW8270	Nitrosomethylethylamine	0.36 U	0.37 U
SW8270	N-Nitrosodiethylamine	0.72 U	0.74 U
SW8270	N-Nitrosodimethylamine	0.72 U	0.74 U
SW8270	N-Nitrosodi-n-butylamine	0.36 U	0.37 U
SW8270	N-Nitrosodi-n-propylamine	0.36 U	0.37 U
SW8270	N-Nitrosodiphenylamine	0.36 U	0.37 U
SW8270	N-Nitrosomorpholine	0.72 U	0.74 U
SW8270	N-Nitrosopiperidine	0.36 U	0 37 U
SW8270	N-Nitrosopyrrolidine	0.72 U	0.74 U
SW8270	o-Cresol (2-methylphenol)	0.36 U	0.37 U
SW8270	o-Toluidine	0.72 U	0.74 U
SW8270	p-Dimethylaminoazobenzene	0.72 U	0 74 U
SW8270	Pentachlorobenzene	0.36 U	0.37 U
SW8270	Pentachloronitrobenzene	0.36 U	0.37 U
SW8270	Pentachlorophenol	1.8 U	1.8 U
SW8270	Phenacetin	0.36 U	0.37 U
SW8270	Phenanthrene	0.36 U	0.37 U
SW8270	Phenol	0.36 U	0.37 U
SW8270	p-Phenylenediamine	1.4 U	1.5 U
SW8270	Pronamide	0.36 U	0.37 U
SW8270	Pyrene	0.36 U	0.37 U
SW8270	Pyridine	0.72 U	0.74 U
SW8270	Safrole	0.36 U	0.37 U

Table C.4
Analytical Data-Soil
SWMU 39
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU39001-00'	BHGLSWMU39001-05'
TX1005	Petroleum Hydrocarbons	54 U	57 U
TX1005	Petroleum Hydrocarbons- Diesel	54 U	57 U
TX1005	Petroleum Hydrocarbons- Gasoline	54 U	57 U

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
M5500	Ethylene Glycol	6 U	6 U	6 U	6 U
SW6010	Antimony	0.43 F	0 4 F	0.32 F	0 28 F
SW6010	Arsenic	2 3 F	3.7 F	4.3	1 2 F
SW6010	Barium	73 8 J	37 4 J	46 9 J	11 7 F
SW6010	Beryllium	0 84	0.59	0 72	0 22 J
SW6010	Cadmium	0.33 U	0 08 F	0.34 U	0 32 U
SW6010	Chromium (total)	10 4	7.9	11.6	5 F
SW6010	Cobalt	4 4	4.2 F	5.9	1 7 F
SW6010	Copper	6 5 F	5.3 F	8.8	3 2 F
SW6010	Lead	10 4	7.1	7.6	3 2
SW6010	Nickel	8.1	8.6	11 3	4 9 F
SW6010	Tin	26 5 U	30 U	27.3 U	26 U
SW6010	Vanadium	19 7 F	19.1 F	23 7	7.8 F
SW6010	Zinc	14 F	14 5 F	24.1	11.7 F
SW7471	Mercury	0 2 F	0 04 U	0 04 U	0 04 U
SW7740	Selenium	0 23 UJ	0 29 UJ	0 22 UJ	0.22 UJ
SW7761	Silver	0.19 U	0 19 U	0 15 UJ	0.15 U
SW7841	Thallium	0.19 F	0.96 UJ	0 75 UJ	0 73 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0.003 U	0.003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0.004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0.002 UJ	0 002 UJ	0 002 UJ	0 002 UJ
SW8260	1,1,2-Trichloroethane	0.005 UJ	0.005 UJ	0.005 UJ	0 005 UJ
SW8260	1,1-Dichloroethane	0 002 U	0 002 U	0.002 U	0 002 U
SW8260	1,1-Dichloroethene	0.005 U	0 005 U	0 005 U	0.005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 UJ	0 005 UJ	0.005 U
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 UJ	0.005 UJ	0 005 UJ
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 UJ	0.003 UJ	0.003 UJ	0.003 UJ
SW8260	1,2-Dichloroethane	0 003 U	0.003 U	0 003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0.003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	2-Hexanone	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Acetone	0 005 U	0 008	0 005 U	0 005 U
SW8260	Acetonitrile	0.041 U	0 038 U	0 039 U	0 038 U
SW8260	Acrolein	0 1 U	0 094 U	0 098 U	0 095 U
SW8260	Acrylonitrile	0 041 U	0 038 U	0 039 U	0 038 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0 009 U	0 01 U	0.01 U
SW8260	Benzene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0.004 U	0.004 U	0 004 U
SW8260	Bromoform	0 005 UJ	0 005 UJ	0 005 UJ	0.005 UJ
SW8260	Bromomethane	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Carbon disulfide	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Carbon tetrachloride	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloroethane	0 005 U	0.005 U	0 005 U	0.005 U
SW8260	Chloroform	0 002 U	0 002 U	0.002 U	0.002 U
SW8260	Chloromethane	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0.003 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Ethyl methacrylate	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0.005 U	0 005 U	0 005 U	0.005 U
SW8260	Isobutanol	0 21 U	0.19 U	0 2 U	0 19 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 005 U	0.005 U	0.005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Methyl methacrylate	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Methylacrylonitrile	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	Methylene chloride	0 002 U	0 002 U	0.002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Pentachloroethane	0 005 U	0.005 U	0 005 U	0.005 U
SW8260	Propane nitrile (propionitrile)	0 021 U	0.019 U	0 02 U	0 019 U
SW8260	Styrene	0.002 U	0.002 U	0 002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0.005 U	0 005 U	0.005 U
SW8260	Toluene	0.005 U	0.005 U	0 005 U	0.005 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	Vinyl acetate	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl chloride	0.005 U	0 005 U	0 005 U	0.005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 4 U	0.38 U	0.39 U	0.37 U

Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
SW8270	1,2,4-Trichlorobenzene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	1,2-Dichlorobenzene	0 4 U	0 38 U	0 39 U	0 37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.6 U	1 5 U	1 6 U	1 5 U
SW8270	1,3-Dichlorobenzene	0.4 U	0.38 U	0 39 U	0 37 U
SW8270	1,3-Dinitrobenzene	0.4 U	0.38 U	0.39 U	0.37 U
SW8270	1,4-Dichlorobenzene	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	1,4-Dioxane (p-dioxane)	1.6 U	1 5 U	1 6 U	1 5 U
SW8270	1,4-Naphthoquinone	2 U	1.9 U	2 U	1.8 U
SW8270	1-Naphthylamine	0.8 U	0 75 U	0.78 U	0.74 U
SW8270	2,2'-Oxybis(1-chloro)propane	0.4 U	0 38 U	0 39 U	0 37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.4 U	0.38 U	0 39 U	0 37 U
SW8270	2,4,5-Trichlorophenol	2 U	1.9 U	2 U	1 8 U
SW8270	2,4,6-Trichlorophenol	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	2,4-Dichlorophenol	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	2,4-Dimethylphenol	0.4 U	0 38 U	0.39 U	0 37 U
SW8270	2,4-Dinitrophenol	2 U	1.9 U	2 U	1 8 U
SW8270	2,4-Dinitrotoluene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	2,6-Dichlorophenol	0 8 U	0.75 U	0 78 U	0 74 U
SW8270	2,6-Dinitrotoluene	0.4 U	0 38 U	0.39 U	0 37 U
SW8270	2-Acetylaminofluorene	0.8 U	0 75 U	0.78 U	0 74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 8 U	0 75 U	0.78 U	0 74 U
SW8270	2-Chloronaphthalene	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	2-Chlorophenol	0.4 U	0 38 U	0 39 U	0 37 U
SW8270	2-Methylnaphthalene	0.4 U	0.38 U	0.39 U	0 37 U
SW8270	2-Nitroaniline	2 U	1.9 U	2 U	1.8 U
SW8270	2-Nitrophenol	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	2-Picoline (alpha-picoline)	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	3,3'-Dichlorobenzidine	0.8 U	0 75 U	0.78 U	0 74 U
SW8270	3,3'-Dimethylbenzidine	2 U	1.9 U	2 U	1.8 U
SW8270	3-Methylcholanthrene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	3-Nitroaniline	2 U	1 9 U	2 U	1.8 U
SW8270	4,6-Dinitro-2-methylphenol	2 U	1.9 U	2 U	1 8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 8 U	0.75 U	0.78 U	0 74 U
SW8270	4-Bromophenyl phenyl ether	0 4 U	0 38 U	0 39 U	0 37 U
SW8270	4-Chloro-3-methylphenol	0 8 U	0 75 U	0.78 U	0 74 U
SW8270	4-Chloroaniline	0 8 U	0 75 U	0 78 U	0 74 U
SW8270	4-Chlorophenyl phenyl ether	0.4 U	0 38 U	0.39 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
SW8270	4-Nitroaniline	2 U	1.9 U	2 U	1.8 U
SW8270	4-Nitrophenol	2 U	1.9 U	2 U	1 8 U
SW8270	4-Nitroquinoline-N-oxide	2 U	1 9 U	2 U	1 8 U
SW8270	5-Nitro-o-toluidine	0.8 U	0.75 U	0.78 U	0 74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.8 U	0.75 U	0.78 U	0.74 U
SW8270	Acenaphthene	0.4 U	0.38 U	0 39 U	0.37 U
SW8270	Acenaphthylene	0.4 U	0.38 U	0 39 U	0.37 U
SW8270	Acetophenone	0 8 U	0 75 U	0 78 U	0.74 U
SW8270	alpha, alpha-Dimethylphenethylamine	2 U	1.9 U	2 U	1.8 U
SW8270	Aniline (phenylamine, aminobenzene)	0.4 U	0.38 U	0.39 U	0 37 U
SW8270	Anthracene	0.4 U	0 38 U	0 39 U	0 37 U
SW8270	Aramite (total)	0 8 U	0 75 U	0.78 U	0 74 U
SW8270	Benzo(a)anthracene	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	Benzo(a)pyrene	0 4 U	0.38 U	0.39 U	0.37 U
SW8270	Benzo(b)fluoranthene	0.4 U	0.38 U	0.39 U	0.37 U
SW8270	Benzo(g,h,i)perylene	0 4 U	0 38 U	0.39 U	0 37 U
SW8270	Benzo(k)fluoranthene	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	Benzoic acid	2 U	1.9 U	2 U	0.42 F
SW8270	Benzyl alcohol	0.4 U	0.38 U	0.39 U	0.37 U
SW8270	Benzyl butyl phthalate	0.4 U	0.38 U	0.39 U	0.37 U
SW8270	bis(2-Chloroethoxy)methane	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	bis(2-Ethylhexyl)phthalate	0.4 U	0.38 U	0 39 U	0 37 U
SW8270	Chlorobenzilate	0 4 U	0 38 U	0 39 U	0 37 U
SW8270	Chrysene	0 4 U	0 38 U	0.39 U	0 37 U
SW8270	Diallate (total of cis and trans isomers)	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	Dibenz(a,h)anthracene	0.4 U	0 38 U	0.39 U	0 37 U
SW8270	Dibenzofuran	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	Diethyl phthalate	0 4 U	0.38 U	0 39 U	0 37 U
SW8270	Dimethyl phthalate	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Di-n-butyl phthalate	0.4 U	0 38 U	0.39 U	0 37 U
SW8270	Di-n-octyl phthalate	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	Dinoseb	0.8 U	0 75 U	0 78 U	0 74 U
SW8270	Diphenylamine	0.4 U	0 38 U	0 39 U	0 37 U
SW8270	Ethyl methanesulfonate	0.8 U	0 75 U	0.78 U	0 74 U
SW8270	Fluoranthene	0.4 U	0.38 U	0 39 U	0 37 U
SW8270	Fluorene	0.4 U	0 38 U	0 39 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
SW8270	Hexachlorobenzene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Hexachlorobutadiene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Hexachlorocyclopentadiene	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Hexachloroethane	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Hexachlorophene	6 U	5.6 U	5.9 U	5.5 U
SW8270	Hexachloropropene	2 U	1.9 U	2 U	1.8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	Isophorone	0 4 U	0.38 U	0 39 U	0 37 U
SW8270	Isosafrole	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	m- & p-Cresol (sum of isomers)	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	Methapyrilene	1 U	0 94 U	0 98 U	0.92 U
SW8270	Methyl methanesulfonate	0.4 U	0.38 U	0 39 U	0.37 U
SW8270	Naphthalene	0 4 U	0.38 U	0 39 U	0 37 U
SW8270	Nitrobenzene	0.4 U	0 38 U	0 39 U	0 37 U
SW8270	Nitrosomethylethylamine	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	N-Nitrosodiethylamine	0.8 U	0.75 U	0 78 U	0 74 U
SW8270	N-Nitrosodimethylamine	0.8 U	0 75 U	0 78 U	0.74 U
SW8270	N-Nitrosodi-n-butylamine	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	N-Nitrosodi-n-propylamine	0 4 U	0 38 U	0 39 U	0.37 U
SW8270	N-Nitrosodiphenylamine	0 4 U	0.38 U	0 39 U	0.37 U
SW8270	N-Nitrosomorpholine	0 8 U	0 75 U	0 78 U	0.74 U
SW8270	N-Nitrosopiperidine	0 4 U	0.38 U	0.39 U	0.37 U
SW8270	N-Nitrosopyrrolidine	0.8 U	0 75 U	0 78 U	0.74 U
SW8270	o-Cresol (2-methylphenol)	0 4 U	0 38 U	0.39 U	0 37 U
SW8270	o-Toluidine	0 8 U	0.75 U	0 78 U	0 74 U
SW8270	p-Dimethylaminoazobenzene	0.8 U	0 75 U	0 78 U	0 74 U
SW8270	Pentachlorobenzene	0 4 U	0 38 U	0.39 U	0.37 U
SW8270	Pentachloronitrobenzene	0.4 U	0 38 U	0 39 U	0.37 U
SW8270	Pentachlorophenol	2 U	1 9 U	2 U	1 8 U
SW8270	Phenacetin	0 4 U	0.38 U	0.39 U	0.37 U
SW8270	Phenanthrene	0 4 U	0.38 U	0 39 U	0.37 U
SW8270	Phenol	0 4 U	0 38 U	0 39 U	0 37 U
SW8270	p-Phenylenediamine	1.6 U	1 5 U	1 6 U	1 5 U
SW8270	Pronamide	0 4 U	0 38 U	0.39 U	0 37 U
SW8270	Pyrene	0 4 U	0.38 U	0 39 U	0.37 U
SW8270	Pyridine	0 8 U	0.75 U	0.78 U	0 74 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42001-00'	BHGLSWMU42001-05'	BHGLSWMU42001-10'	BHGLSWMU42001-15'
SW8270	Safrole	0.4 U	0 38 U	0.39 U	0 37 U
TX1005	Petroleum Hydrocarbons	33 F	33 F	29 F	25 F
TX1005	Petroleum Hydrocarbons- Diesel	29 F	29 F	25 F	21 F
TX1005	Petroleum Hydrocarbons- Gasoline	4.2 F	4.2 F	3.7 F	4 1 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
M5500	Ethylene Glycol	6 U	6 U	6 U	6 U
SW6010	Antimony	0 37 F	0.32 F	0.69 F	0.58 F
SW6010	Arsenic	2 8 F	3 F	6.1	4 1 J
SW6010	Barium	65.9 J	26 7 F	27.1 F	27.1 F
SW6010	Beryllium	0.82	1 1	0.43 J	0.34 J
SW6010	Cadmium	0 36 U	0 37 U	0.05 F	0.04 F
SW6010	Chromium (total)	14.3	12 8	8 3	8.3
SW6010	Cobalt	4 7	4 8	4 6	4 6
SW6010	Copper	9 4	7 F	8 5	6.1 F
SW6010	Lead	13.5	8.5	6.2	5.4
SW6010	Nickel	8 8	13 6	11 3	10 4
SW6010	Tin	28 8 U	29.7 U	27 6 U	27 6 U
SW6010	Vanadium	23.2	19 6 F	25.2	19 1 F
SW6010	Zinc	19.6 F	22.7	17.5 F	16 3 F
SW7471	Mercury	0 04 U	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0 22 UJ	0 23 UJ	1.3 UJ	1.3 UJ
SW7761	Silver	0.15 U	0 15 U	0.17 U	0 17 U
SW7841	Thallium	0 24 F	0 27 F	0 85 UJ	0 85 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0.003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0.004 U
SW8260	1,1,2,2-Tetrachloroethane	0.002 UJ	0.002 UJ	0.002 UJ	0 002 UJ
SW8260	1,1,2-Trichloroethane	0 005 UJ	0.006 UJ	0.005 UJ	0 004 UJ
SW8260	1,1-Dichloroethane	0.002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0.006 U	0.005 U	0.004 U
SW8260	1,2,3-Trichloropropane	0 005 UJ	0.006 UJ	0.005 U	0.004 U
SW8260	1,2-Dibromo-3-chloropropane	0.005 UJ	0 006 UJ	0 005 U	0.004 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 UJ	0 003 UJ	0.003 UJ	0 003 UJ
SW8260	1,2-Dichloroethane	0 003 U	0.003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0.005 U	0 006 U	0 005 U	0.004 U
SW8260	1,2-Dichloroethene, trans-	0.003 U	0 003 U	0.003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0.005 U	0 006 U	0 005 U	0 004 U
SW8260	2-Hexanone	0 005 U	0 006 U	0.005 U	0.004 U
SW8260	Acetone	0 015	0.006 U	0.005 U	0 004 U
SW8260	Acetonitrile	0.042 U	0 044 U	0.043 U	0 035 U
SW8260	Acrolein	0.1 U	0 11 U	0 11 U	0 088 U
SW8260	Acrylonitrile	0 042 U	0.044 U	0.043 U	0 035 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0 011 U	0.011 U	0 009 U
SW8260	Benzene	0.002 U	0 002 U	0.002 U	0 002 U
SW8260	Bromodichloromethane	0.004 U	0.004 U	0.004 U	0 004 U
SW8260	Bromoform	0 005 UJ	0.006 UJ	0 005 UJ	0.004 UJ
SW8260	Bromomethane	0 005 U	0.006 U	0 005 U	0 004 U
SW8260	Carbon disulfide	0 005 U	0 006 U	0 005 U	0.004 U
SW8260	Carbon tetrachloride	0 005 U	0.006 U	0.005 U	0.004 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0.002 U
SW8260	Chloroethane	0 005 U	0 006 U	0 005 U	0.004 U
SW8260	Chloroform	0 002 U	0 002 U	0 002 U	0.002 U
SW8260	Chloromethane	0 005 U	0.006 U	0 005 U	0.004 U
SW8260	cis-1,3-Dichloropropene	0.005 U	0 006 U	0.005 U	0.004 U
SW8260	Dibromochloromethane	0 003 U	0 003 U	0 003 U	0.003 U
SW8260	Dibromomethane	0 005 U	0 006 U	0 005 U	0.004 U
SW8260	Dichlorodifluoromethane	0.005 U	0 006 U	0.005 U	0.004 U
SW8260	Ethyl methacrylate	0 005 U	0 006 U	0 005 U	0.004 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0.005 U	0 006 U	0 005 U	0.004 U
SW8260	Isobutanol	0.21 U	0 22 U	0 21 U	0 18 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0.006 U	0 005 U	0 004 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 006 U	0.005 U	0 004 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.005 U	0.006 U	0 005 U	0.004 U
SW8260	Methyl methacrylate	0.005 U	0 006 U	0 005 U	0.004 U
SW8260	Methylacrylonitrile	0 005 U	0 006 U	0.005 U	0.004 U
SW8260	Methylene chloride	0.002 U	0.002 U	0.002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.005 U	0.006 U	0 005 U	0 004 U
SW8260	Pentachloroethane	0.005 U	0 006 U	0.005 U	0 004 U
SW8260	Propane nitrile (propionitrile)	0.021 U	0 022 U	0.021 U	0 018 U
SW8260	Styrene	0.002 U	0 002 U	0.002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0.005 U	0.006 U	0.005 U	0 004 U
SW8260	Toluene	0.005 U	0 006 U	0.005 U	0 004 U
SW8260	trans-1,3-Dichloropropene	0.005 U	0.006 U	0.005 U	0.004 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 006 U	0.005 U	0 004 U
SW8260	Trichloroethene (TCE)	0 005 U	0.006 U	0.005 U	0 004 U
SW8260	Vinyl acetate	0 005 U	0 006 U	0 005 U	0.004 U
SW8260	Vinyl chloride	0.005 U	0 006 U	0 005 U	0 004 U
SW8270	1,2,4,5-Tetrachlorobenzene	0.4 U	0.4 U	0.37 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
SW8270	1,2,4-Trichlorobenzene	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	1,2-Dichlorobenzene	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.6 U	1 6 U	1.5 U	1.5 U
SW8270	1,3-Dichlorobenzene	0.4 U	0 4 U	0.37 U	0.37 U
SW8270	1,3-Dinitrobenzene	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	1,4-Dichlorobenzene	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	1,4-Dioxane (p-dioxane)	1.6 U	1.6 U	1.5 U	1.5 U
SW8270	1,4-Naphthoquinone	2 U	2 U	1.8 U	1.8 U
SW8270	1-Naphthylamine	0 81 U	0 8 U	0 74 U	0 74 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	2,4,5-Trichlorophenol	2 U	2 U	1.8 U	1.8 U
SW8270	2,4,6-Trichlorophenol	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	2,4-Dichlorophenol	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	2,4-Dimethylphenol	0.4 U	0.4 U	0 37 U	0 37 U
SW8270	2,4-Dinitrophenol	2 U	2 U	1 8 U	1.8 U
SW8270	2,4-Dinitrotoluene	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	2,6-Dichlorophenol	0 81 U	0 8 U	0 74 U	0 74 U
SW8270	2,6-Dinitrotoluene	0 4 U	0 4 U	0.37 U	0 37 U
SW8270	2-Acetylaminofluorene	0 81 U	0 8 U	0.74 U	0.74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 81 U	0.8 U	0 74 U	0 74 U
SW8270	2-Chloronaphthalene	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	2-Chlorophenol	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	2-Methylnaphthalene	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	2-Nitroaniline	2 U	2 U	1.8 U	1 8 U
SW8270	2-Nitrophenol	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	2-Picoline (alpha-picoline)	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	3,3'-Dichlorobenzidine	0 81 U	0 8 U	0.74 U	0 74 U
SW8270	3,3'-Dimethylbenzidine	2 U	2 U	1 8 U	1 8 U
SW8270	3-Methylcholanthrene	0.4 U	0.4 U	0 37 U	0 37 U
SW8270	3-Nitroaniline	2 U	2 U	1 8 U	1 8 U
SW8270	4,6-Dinitro-2-methylphenol	2 U	2 U	1 8 U	1.8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 81 U	0 8 U	0.74 U	0 74 U
SW8270	4-Bromophenyl phenyl ether	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	4-Chloro-3-methylphenol	0 81 U	0.8 U	0.74 U	0 74 U
SW8270	4-Chloroaniline	0 81 U	0 8 U	0.74 U	0 74 U
SW8270	4-Chlorophenyl phenyl ether	0 4 U	0 4 U	0 37 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
SW8270	4-Nitroaniline	2 U	2 U	1.8 U	1.8 U
SW8270	4-Nitrophenol	2 U	2 U	1.8 U	1 8 U
SW8270	4-Nitroquinoline-N-oxide	2 U	2 U	1.8 U	1.8 U
SW8270	5-Nitro-o-toluidine	0.81 U	0.8 U	0.74 U	0 74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.81 U	0 8 U	0.74 U	0 74 U
SW8270	Acenaphthene	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	Acenaphthylene	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	Acetophenone	0 81 U	0 8 U	0.74 U	0 74 U
SW8270	alpha, alpha-Dimethylphenethylamine	2 U	2 U	1.8 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Anthracene	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	Aramite (total)	0.81 U	0 8 U	0 74 U	0.74 U
SW8270	Benzo(a)anthracene	0.4 U	0.4 U	0.37 U	0 37 U
SW8270	Benzo(a)pyrene	0 4 U	0.4 U	0.37 U	0.37 U
SW8270	Benzo(b)fluoranthene	0 4 U	0 4 U	0.37 U	0.37 U
SW8270	Benzo(g,h,i)perylene	0.4 U	0 4 U	0.37 U	0 37 U
SW8270	Benzo(k)fluoranthene	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	Benzoic acid	0 47 F	2 U	0 42 F	0 41 F
SW8270	Benzyl alcohol	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Benzyl butyl phthalate	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	bis(2-Chloroethoxy)methane	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	bis(2-Ethylhexyl)phthalate	0 045 F	0 4 U	0.37 U	0 37 U
SW8270	Chlorobenzilate	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	Chrysene	0.4 U	0 4 U	0 37 U	0 37 U
SW8270	Diallate (total of cis and trans isomers)	0 4 U	0 4 U	0.37 U	0 37 U
SW8270	Dibenz(a,h)anthracene	0 4 U	0.4 U	0.37 U	0.37 U
SW8270	Dibenzofuran	0 4 U	0 4 U	0.37 U	0.37 U
SW8270	Diethyl phthalate	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	Dimethyl phthalate	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Di-n-butyl phthalate	0.4 U	0.4 U	0 37 U	0 37 U
SW8270	Di-n-octyl phthalate	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Dinoseb	0.81 U	0 8 U	0 74 U	0 74 U
SW8270	Diphenylamine	0.4 U	0 4 U	0.37 U	0 37 U
SW8270	Ethyl methanesulfonate	0.81 U	0 8 U	0 74 U	0 74 U
SW8270	Fluoranthene	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	Fluorene	0.4 U	0.4 U	0 37 U	0.37 U

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Tab[illegible]
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
SW8270	Hexachlorobenzene	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Hexachlorobutadiene	0.4 U	0 4 U	0.37 U	0 37 U
SW8270	Hexachlorocyclopentadiene	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	Hexachloroethane	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	Hexachlorophene	6.1 U	6 U	5.6 U	5 5 U
SW8270	Hexachloropropene	2 U	2 U	1.8 U	1.8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	Isophorone	0.4 U	0 4 U	0 37 U	0 37 U
SW8270	Isosafrole	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	m- & p-Cresol (sum of isomers)	0 4 U	0 4 U	0.37 U	0 37 U
SW8270	Methapyrilene	1 U	1 U	0 93 U	0 92 U
SW8270	Methyl methanesulfonate	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	Naphthalene	0 4 U	0 4 U	0 37 U	0 37 U
SW8270	Nitrobenzene	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	Nitrosomethylethylamine	0.4 U	0 4 U	0.37 U	0 37 U
SW8270	N-Nitrosodiethylamine	0.81 U	0 8 U	0 74 U	0.74 U
SW8270	N-Nitrosodimethylamine	0 81 U	0 8 U	0 74 U	0.74 U
SW8270	N-Nitrosodi-n-butylamine	0 4 U	0 4 U	0.37 U	0 37 U
SW8270	N-Nitrosodi-n-propylamine	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	N-Nitrosodiphenylamine	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	N-Nitrosomorpholine	0.81 U	0 8 U	0 74 U	0.74 U
SW8270	N-Nitrosopiperidine	0 4 U	0 4 U	0 37 U	0.37 U
SW8270	N-Nitrosopyrrolidine	0 81 U	0.8 U	0.74 U	0 74 U
SW8270	o-Cresol (2-methylphenol)	0 4 U	0.4 U	0 37 U	0.37 U
SW8270	o-Toluidine	0 81 U	0 8 U	0 74 U	0 74 U
SW8270	p-Dimethylaminoazobenzene	0 81 U	0 8 U	0.74 U	0 74 U
SW8270	Pentachlorobenzene	0.4 U	0 4 U	0.37 U	0 37 U
SW8270	Pentachloronitrobenzene	0 4 U	0.4 U	0.37 U	0 37 U
SW8270	Pentachlorophenol	2 U	2 U	1 8 U	1 8 U
SW8270	Phenacetin	0 4 U	0 4 U	0.37 U	0.37 U
SW8270	Phenanthrene	0 4 U	0 4 U	0.37 U	0.37 U
SW8270	Phenol	0.4 U	0 4 U	0 37 U	0.37 U
SW8270	p-Phenylenediamine	1 6 U	1.6 U	1.5 U	1 5 U
SW8270	Pronamide	0 4 U	0.4 U	0.37 U	0.37 U
SW8270	Pyrene	0 4 U	0.4 U	0 37 U	0 37 U
SW8270	Pyridine	0.81 U	0 8 U	0.74 U	0.74 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-00'	BHGLSWMU42002-05'	BHGLSWMU42002-10'	BHGLSWMU42002-10' Duplicate
SW8270	Safrole	0.4 U	0 4 U	0 37 U	0.37 U
TX1005	Petroleum Hydrocarbons	23 F	21 F	7.5 F	7 5 F
TX1005	Petroleum Hydrocarbons- Diesel	19 F	21 F	6.7 F	3.6 F
TX1005	Petroleum Hydrocarbons- Gasoline	3.7 F	59 UJ	4.2 F	4 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
M5500	Ethylene Glycol	6 U	6 U	6 U	6 U
SW6010	Antimony	3 1 UJ	0.31 F	0 51 F	0.33 F
SW6010	Arsenic	2.7 F	3.8 J	3 8 J	3 2 F
SW6010	Barium	6.6 F	56 7 J	46.4 J	40 5 J
SW6010	Beryllium	0 14 F	0 83	1.1	0 58
SW6010	Cadmium	0 31 U	0 35 U	0.38 U	0.04 F
SW6010	Chromium (total)	3 8 F	15.1	13 4	12.2
SW6010	Cobalt	2 1 F	5 1	5.7	3.8 F
SW6010	Copper	3 6 F	8 9	8.5	6 4 F
SW6010	Lead	3 1	9 6	11 1	7 5
SW6010	Nickel	4.4 F	9 5	13 9	9 6
SW6010	Tin	25 U	28 3 U	30 U	26 3 U
SW6010	Vanadium	10.3 F	27.3	26 7	23.3
SW6010	Zinc	7 8 F	20 9 F	21.6 F	22 8
SW7471	Mercury	0 04 U	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0 22 UJ	0.2 UJ	0 29 UJ	0 2 UJ
SW7761	Silver	0.14 U	0.13 U	0 19 U	0 13 U
SW7841	Thallium	0 72 UJ	0.23 F	0 23 F	0 67 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0.002 UJ	0 002 UJ	0.002 UJ	0 002 UJ
SW8260	1,1,2-Trichloroethane	0 005 UJ	0.005 UJ	0.005 UJ	0 005 UJ
SW8260	1,1-Dichloroethane	0.002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0.005 U	0 005 U	0 005 UJ
SW8260	1,2-Dibromo-3-chloropropane	0.005 U	0 005 U	0.005 U	0.005 UJ
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 UJ	0 003 UJ	0.003 UJ	0 003 UJ
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0.003 U	0 003 U	0 003 U	0.003 U
SW8260	1,2-Dichloropropane	0.002 U	0.002 U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0.005 U	0.005 U	0.005 U
SW8260	2-Hexanone	0.005 U	0 005 U	0.005 U	0.005 U
SW8260	Acetone	0.005 U	0 005 U	0 005 U	0.005 U
SW8260	Acetonitrile	0.04 U	0 042 U	0 042 U	0 039 U
SW8260	Acrolein	0 1 U	0 1 U	0 1 U	0.097 U
SW8260	Acrylonitrile	0 04 U	0 042 U	0.042 U	0 039 U

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Table C.5
Analytical Data-Soil
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NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0 01 U	0 01 U	0 01 U
SW8260	Benzene	0.002 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0.004 U	0.004 U	0 004 U	0 004 U
SW8260	Bromoform	0.005 UJ	0 005 UJ	0 005 UJ	0 005 UJ
SW8260	Bromomethane	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	Carbon disulfide	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloroethane	0.005 U	0 005 U	0.005 U	0 005 U
SW8260	Chloroform	0.002 U	0.002 U	0 002 U	0.002 U
SW8260	Chloromethane	0 005 U	0.005 U	0 005 U	0.005 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Dibromochloromethane	0.003 U	0.003 U	0.003 U	0 003 U
SW8260	Dibromomethane	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	Dichlorodifluoromethane	0 005 U	0 005 U	0.005 U	0.005 U
SW8260	Ethyl methacrylate	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0.003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Isobutanol	0 2 U	0.21 U	0.21 U	0 19 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl methacrylate	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	Methylacrylonitrile	0 005 U	0.005 U	0.005 U	0.005 U
SW8260	Methylene chloride	0.002 U	0.002 U	0.002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Pentachloroethane	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 02 U	0 021 U	0 021 U	0 019 U
SW8260	Styrene	0.002 U	0 002 U	0.002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0 005 U	0.005 U	0.005 U
SW8260	Toluene	0 005 U	0 005 U	0 005 U	0.005 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Trichloroethene (TCE)	0.005 U	0.005 U	0 005 U	0 005 U
SW8260	Vinyl acetate	0 005 U	0.005 U	0.005 U	0 005 U
SW8260	Vinyl chloride	0 005 U	0 005 U	0 005 U	0.005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 35 U	0.41 U	0.41 U	0 39 U

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Table C.5
Analytical Data-Soil
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Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
SW8270	1,2,4-Trichlorobenzene	0 35 U	0.41 U	0 41 U	0.39 U
SW8270	1,2-Dichlorobenzene	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 4 U	1 6 U	1.6 U	1 6 U
SW8270	1,3-Dichlorobenzene	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	1,3-Dinitrobenzene	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	1,4-Dichlorobenzene	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	1,4-Dioxane (p-dioxane)	1.4 U	1 6 U	1 6 U	1 6 U
SW8270	1,4-Naphthoquinone	1.8 U	2.1 U	2 U	1 9 U
SW8270	1-Naphthylamine	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 35 U	0.41 U	0 41 U	0 39 U
SW8270	2,3,4,6-Tetrachlorophenol	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	2,4,5-Trichlorophenol	1 8 U	2.1 U	2 U	1.9 U
SW8270	2,4,6-Trichlorophenol	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	2,4-Dichlorophenol	0 35 U	0.41 U	0.41 U	0 39 U
SW8270	2,4-Dimethylphenol	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	2,4-Dinitrophenol	1.8 U	2.1 U	2 U	1.9 U
SW8270	2,4-Dinitrotoluene	0.35 U	0.41 U	0.41 U	0.39 U
SW8270	2,6-Dichlorophenol	0 71 U	0 82 U	0 82 U	0.78 U
SW8270	2,6-Dinitrotoluene	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	2-Acetylaminofluorene	0 71 U	0 82 U	0 82 U	0.78 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 71 U	0 82 U	0.82 U	0.78 U
SW8270	2-Chloronaphthalene	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	2-Chlorophenol	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	2-Methylnaphthalene	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	2-Nitroaniline	1.8 U	2 1 U	2 U	1 9 U
SW8270	2-Nitrophenol	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	2-Picoline (alpha-picoline)	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	3,3'-Dichlorobenzidine	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	3,3'-Dimethylbenzidine	1 8 U	2.1 U	2 U	1.9 U
SW8270	3-Methylcholanthrene	0 35 U	0 41 U	0.41 U	0.39 U
SW8270	3-Nitroaniline	1 8 U	2 1 U	2 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	1.8 U	2.1 U	2 U	1 9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	4-Bromophenyl phenyl ether	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	4-Chloro-3-methylphenol	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	4-Chloroaniline	0 71 U	0 82 U	0 82 U	0.78 U
SW8270	4-Chlorophenyl phenyl ether	0 35 U	0 41 U	0 41 U	0 39 U

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Table C.5
Analytical Data-Soil
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NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
SW8270	4-Nitroaniline	1.8 U	2 1 U	2 U	1.9 U
SW8270	4-Nitrophenol	1.8 U	2.1 U	2 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	1 8 U	2.1 U	2 U	1.9 U
SW8270	5-Nitro-o-toluidine	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.71 U	0 82 U	0 82 U	0.78 U
SW8270	Acenaphthene	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Acenaphthylene	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Acetophenone	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	alpha, alpha-Dimethylphenethylamine	1 8 U	2 1 U	2 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 35 U	0.41 U	0.41 U	0 39 U
SW8270	Anthracene	0 35 U	0.41 U	0 41 U	0.39 U
SW8270	Aramite (total)	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	Benzo(a)anthracene	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	Benzo(a)pyrene	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	Benzo(b)fluoranthene	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Benzo(g,h,i)perylene	0 35 U	0.41 U	0.41 U	0 39 U
SW8270	Benzo(k)fluoranthene	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	Benzoic acid	0 39 F	2 1 U	2 U	1.9 U
SW8270	Benzyl alcohol	0.35 U	0 41 U	0 41 U	0.39 U
SW8270	Benzyl butyl phthalate	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	bis(2-Chloroethoxy)methane	0.35 U	0.41 U	0 41 U	0 39 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	bis(2-Ethylhexyl)phthalate	0.35 U	0.057 F	0 41 U	0.05 F
SW8270	Chlorobenzilate	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	Chrysene	0 35 U	0.41 U	0.41 U	0.39 U
SW8270	Diallate (total of cis and trans isomers)	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	Dibenz(a,h)anthracene	0.35 U	0.41 U	0.41 U	0.39 U
SW8270	Dibenzofuran	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Diethyl phthalate	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	Dimethyl phthalate	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	Di-n-butyl phthalate	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	Di-n-octyl phthalate	0 35 U	0.41 U	0 41 U	0 39 U
SW8270	Dinoseb	0 71 U	0 82 U	0.82 U	0 78 U
SW8270	Diphenylamine	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Ethyl methanesulfonate	0 71 U	0 82 U	0 82 U	0 78 U
SW8270	Fluoranthene	0.35 U	0.41 U	0.41 U	0 39 U
SW8270	Fluorene	0 35 U	0.41 U	0 41 U	0.39 U

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Table C.5
Analytical Data-Soil
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Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
SW8270	Hexachlorobenzene	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	Hexachlorobutadiene	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	Hexachlorocyclopentadiene	0.35 U	0.41 U	0.41 U	0 39 U
SW8270	Hexachloroethane	0.35 U	0.41 U	0 41 U	0 39 U
SW8270	Hexachlorophene	5.3 U	6.2 U	6 1 U	5 8 U
SW8270	Hexachloropropene	1 8 U	2.1 U	2 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0.35 U	0 41 U	0.41 U	0.39 U
SW8270	Isophorone	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	Isosafrole	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	m- & p-Cresol (sum of isomers)	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Methapyrilene	0.88 U	1 U	1 U	0 97 U
SW8270	Methyl methanesulfonate	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Naphthalene	0 35 U	0 41 U	0 41 U	0 39 U
SW8270	Nitrobenzene	0.35 U	0 41 U	0.41 U	0.39 U
SW8270	Nitrosomethylethylamine	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	N-Nitrosodiethylamine	0.71 U	0.82 U	0 82 U	0 78 U
SW8270	N-Nitrosodimethylamine	0 71 U	0 82 U	0.82 U	0 78 U
SW8270	N-Nitrosodi-n-butylamine	0 35 U	0.41 U	0.41 U	0 39 U
SW8270	N-Nitrosodi-n-propylamine	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	N-Nitrosodiphenylamine	0.35 U	0 41 U	0.41 U	0 39 U
SW8270	N-Nitrosomorpholine	0.71 U	0 82 U	0.82 U	0 78 U
SW8270	N-Nitrosopiperidine	0 35 U	0.41 U	0 41 U	0 39 U
SW8270	N-Nitrosopyrrolidine	0 71 U	0 82 U	0 82 U	0.78 U
SW8270	o-Cresol (2-methylphenol)	0.35 U	0 41 U	0 41 U	0 39 U
SW8270	o-Toluidine	0.71 U	0 82 U	0 82 U	0 78 U
SW8270	p-Dimethylaminoazobenzene	0 71 U	0 82 U	0.82 U	0.78 U
SW8270	Pentachlorobenzene	0 35 U	0.41 U	0 41 U	0.39 U
SW8270	Pentachloronitrobenzene	0.35 U	0 41 U	0 41 U	0.39 U
SW8270	Pentachlorophenol	1.8 U	2.1 U	2 U	1 9 U
SW8270	Phenacetin	0 35 U	0 41 U	0 41 U	0.39 U
SW8270	Phenanthrene	0 35 U	0 41 U	0.41 U	0.39 U
SW8270	Phenol	0.35 U	0.41 U	0 41 U	0 39 U
SW8270	p-Phenylenediamine	1.4 U	1.6 U	1 6 U	1.6 U
SW8270	Pronamide	0 35 U	0 41 U	0.41 U	0 39 U
SW8270	Pyrene	0.35 U	0 41 U	0 41 U	0.39 U
SW8270	Pyridine	0 71 U	0 82 U	0 82 U	0 78 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42002-15'	BHGLSWMU42003-00'	BHGLSWMU42003-05'	BHGLSWMU42003-10'
SW8270	Safrole	0 35 U	0 41 U	0 41 U	0.39 U
TX1005	Petroleum Hydrocarbons	7.1 F	15 F	7.7 F	9 1 F
TX1005	Petroleum Hydrocarbons- Diesel	4 1 F	11 F	3 3 F	5.2 F
TX1005	Petroleum Hydrocarbons- Gasoline	3 F	3.8 F	4 4 F	3 9 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data.

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
M5500	Ethylene Glycol	6 U	6 U	6 U	6 U
SW6010	Antimony	3.6 UJ	3 6 UJ	0 39 F	0 71 F
SW6010	Arsenic	3 3 F	2 7 F	3 1 F	2 2 F
SW6010	Barium	15 4 F	15.4 F	107 J	74.9 J
SW6010	Beryllium	0.2 F	0.2 F	1.1	1
SW6010	Cadmium	0.36 U	0.36 U	0 36 U	0 36 U
SW6010	Chromium (total)	4 7 F	4.7 F	13 4	12 2
SW6010	Cobalt	2 4 F	1 9 F	6 8	5 1
SW6010	Copper	5 F	4 3 F	7.7	7 1 F
SW6010	Lead	4	4	11.3	8.2
SW6010	Nickel	4.8 F	4 8 F	10 1	13 8
SW6010	Tin	28 4 U	28 4 U	28 5 U	29 2 U
SW6010	Vanadium	11.8 F	11 5 F	22.9	18 6 F
SW6010	Zinc	9.9 F	10.4 F	17.6 F	19 3 F
SW7471	Mercury	0 04 U	0.04 U	0 04 U	0 04 U
SW7740	Selenium	0 24 UJ	0.24 UJ	0.22 UJ	0 26 UJ
SW7761	Silver	0 16 U	0 16 U	0.14 U	0 17 U
SW7841	Thallium	0 8 UJ	0 8 UJ	0 24 F	0 18 F
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0.003 U	0.003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 UJ	0 002 UJ	0 002 UJ	0 002 UJ
SW8260	1,1,2-Trichloroethane	0 005 UJ	0 005 UJ	0.005 UJ	0 006 UJ
SW8260	1,1-Dichloroethane	0 002 U	0 002 U	0 002 U	0.002 U
SW8260	1,1-Dichloroethene	0 005 U	0.005 U	0 005 U	0 006 U
SW8260	1,2,3-Trichloropropane	0 005 U	0.005 U	0 005 U	0 006 UJ
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 U	0.005 U	0 006 UJ
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 UJ	0 003 UJ	0.003 UJ	0 003 UJ
SW8260	1,2-Dichloroethane	0 003 U	0.003 U	0.003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0.005 U	0.005 U	0 005 U	0 006 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0.002 U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U	0.005 U	0 006 U
SW8260	2-Hexanone	0.005 U	0 005 U	0.005 U	0 006 U
SW8260	Acetone	0.005 U	0.005 U	0 005 U	0 006 U
SW8260	Acetonitrile	0 041 U	0.041 U	0.041 U	0 045 U
SW8260	Acrolein	0.1 U	0.1 U	0.1 U	0 11 U
SW8260	Acrylonitrile	0 041 U	0.041 U	0 041 U	0 045 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0 01 U	0 01 U	0 011 U
SW8260	Benzene	0.002 U	0 002 U	0.002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0.004 U	0 004 U	0 004 U
SW8260	Bromoform	0 005 UJ	0.005 UJ	0 005 UJ	0 006 UJ
SW8260	Bromomethane	0.005 U	0 005 U	0 005 U	0 006 U
SW8260	Carbon disulfide	0 005 U	0.005 U	0 005 U	0.006 U
SW8260	Carbon tetrachloride	0 005 U	0 005 U	0.005 U	0 006 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0.002 U	0.002 U
SW8260	Chloroethane	0 005 U	0.005 U	0.005 U	0 006 U
SW8260	Chloroform	0.002 U	0.002 U	0 002 U	0.002 U
SW8260	Chloromethane	0.005 U	0.005 U	0 005 U	0.006 U
SW8260	cis-1,3-Dichloropropene	0.005 U	0 005 U	0.005 U	0 006 U
SW8260	Dibromochloromethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0.005 U	0 005 U	0 005 U	0 006 U
SW8260	Dichlorodifluoromethane	0 005 U	0.005 U	0.005 U	0 006 U
SW8260	Ethyl methacrylate	0 005 U	0 005 U	0 005 U	0 006 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0.003 U
SW8260	Iodomethane (methyl iodide)	0.005 U	0 005 U	0.005 U	0.006 U
SW8260	Isobutanol	0 2 U	0 2 U	0 2 U	0 22 U
SW8260	m- & p-Xylene (sum of isomers)	0.005 U	0.005 U	0.005 U	0 006 U
SW8260	Methyl ethyl ketone (2-butanone)	0.005 U	0.005 U	0 005 U	0 006 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.005 U	0 005 U	0.005 U	0 006 U
SW8260	Methyl methacrylate	0 005 U	0 005 U	0.005 U	0 006 U
SW8260	Methylacrylonitrile	0.005 U	0.005 U	0 005 U	0.006 U
SW8260	Methylene chloride	0.002 U	0.002 U	0 002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.005 U	0 005 U	0 005 U	0 006 U
SW8260	Pentachloroethane	0 005 U	0 005 U	0.005 U	0 006 U
SW8260	Propane nitrile (propionitrile)	0.02 U	0 02 U	0 02 U	0 022 U
SW8260	Styrene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0 005 U	0 005 U	0.006 U
SW8260	Toluene	0.005 U	0 005 U	0 005 U	0 006 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U	0 005 U	0 006 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 005 U	0 005 U	0 006 U
SW8260	Trichloroethene (TCE)	0 005 U	0.005 U	0.005 U	0 006 U
SW8260	Vinyl acetate	0.005 U	0.005 U	0 005 U	0 006 U
SW8260	Vinyl chloride	0.005 U	0 005 U	0.005 U	0 006 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U

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Table [illegible]
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
SW8270	1,2,4-Trichlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,2-Dichlorobenzene	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.5 U	1 5 U	1 6 U	1.5 U
SW8270	1,3-Dichlorobenzene	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	1,3-Dinitrobenzene	0.37 U	0 37 U	0 4 U	0.38 U
SW8270	1,4-Dichlorobenzene	0.37 U	0 37 U	0.4 U	0.38 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1 5 U	1.6 U	1 5 U
SW8270	1,4-Naphthoquinone	1 8 U	1 8 U	2 U	1.9 U
SW8270	1-Naphthylamine	0 74 U	0 74 U	0 79 U	0 76 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 37 U	0.37 U	0.4 U	0.38 U
SW8270	2,4,5-Trichlorophenol	1 8 U	1 8 U	2 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	2,4-Dichlorophenol	0.37 U	0 37 U	0.4 U	0 38 U
SW8270	2,4-Dimethylphenol	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	2,4-Dinitrophenol	1 8 U	1.8 U	2 U	1 9 U
SW8270	2,4-Dinitrotoluene	0.37 U	0 37 U	0.4 U	0.38 U
SW8270	2,6-Dichlorophenol	0 74 U	0 74 U	0 79 U	0.76 U
SW8270	2,6-Dinitrotoluene	0 37 U	0 37 U	0.4 U	0.38 U
SW8270	2-Acetylaminofluorene	0 74 U	0 74 U	0 79 U	0.76 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 74 U	0.74 U	0 79 U	0 76 U
SW8270	2-Chloronaphthalene	0 37 U	0 37 U	0.4 U	0.38 U
SW8270	2-Chlorophenol	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	2-Methylnaphthalene	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	2-Nitroaniline	1.8 U	1 8 U	2 U	1 9 U
SW8270	2-Nitrophenol	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	2-Picoline (alpha-picoline)	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0 74 U	0 74 U	0.79 U	0 76 U
SW8270	3,3'-Dimethylbenzidine	1.8 U	1.8 U	2 U	1.9 U
SW8270	3-Methylcholanthrene	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	3-Nitroaniline	1.8 U	1 8 U	2 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	1 8 U	1 8 U	2 U	1.9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 74 U	0 74 U	0 79 U	0 76 U
SW8270	4-Bromophenyl phenyl ether	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	4-Chloro-3-methylphenol	0.74 U	0 74 U	0.79 U	0 76 U
SW8270	4-Chloroaniline	0.74 U	0 74 U	0 79 U	0 76 U
SW8270	4-Chlorophenyl phenyl ether	0.37 U	0 37 U	0.4 U	0 38 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
SW8270	4-Nitroaniline	1 8 U	1 8 U	2 U	1.9 U
SW8270	4-Nitrophenol	1.8 U	1 8 U	2 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	1 8 U	1 8 U	2 U	1.9 U
SW8270	5-Nitro-o-toluidine	0 74 U	0.74 U	0 79 U	0.76 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 74 U	0.74 U	0.79 U	0 76 U
SW8270	Acenaphthene	0.37 U	0.37 U	0 4 U	0.38 U
SW8270	Acenaphthylene	0.37 U	0 37 U	0 4 U	0.38 U
SW8270	Acetophenone	0.74 U	0.74 U	0 79 U	0 76 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.8 U	1 8 U	2 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	Anthracene	0.37 U	0 37 U	0 4 U	0.38 U
SW8270	Aramite (total)	0.74 U	0 74 U	0 79 U	0 76 U
SW8270	Benzo(a)anthracene	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(a)pyrene	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	Benzo(b)fluoranthene	0.37 U	0 37 U	0.4 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(k)fluoranthene	0.37 U	0.37 U	0 4 U	0.38 U
SW8270	Benzoic acid	1.8 U	1 8 U	2 U	1 9 U
SW8270	Benzyl alcohol	0.37 U	0 37 U	0.4 U	0 38 U
SW8270	Benzyl butyl phthalate	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	bis(2-Chloroethoxy)methane	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 37 U	0.37 U	0.4 U	0.38 U
SW8270	bis(2-Ethylhexyl)phthalate	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	Chlorobenzilate	0.37 U	0 37 U	0 4 U	0.38 U
SW8270	Chrysene	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0.37 U	0.37 U	0 4 U	0.38 U
SW8270	Dibenz(a,h)anthracene	0.37 U	0 37 U	0.4 U	0.38 U
SW8270	Dibenzofuran	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	Diethyl phthalate	0.37 U	0.37 U	0 4 U	0 38 U
SW8270	Dimethyl phthalate	0.37 U	0 37 U	0 4 U	0.38 U
SW8270	Di-n-butyl phthalate	0.37 U	0 37 U	0.4 U	0 38 U
SW8270	Di-n-octyl phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Dinoseb	0 74 U	0 74 U	0 79 U	0 76 U
SW8270	Diphenylamine	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	Ethyl methanesulfonate	0.74 U	0.74 U	0.79 U	0 76 U
SW8270	Fluoranthene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Fluorene	0 37 U	0 37 U	0.4 U	0 38 U

Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
SW8270	Hexachlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachlorobutadiene	0 37 U	0 37 U	0.4 U	0.38 U
SW8270	Hexachlorocyclopentadiene	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	Hexachloroethane	0 37 U	0.37 U	0 4 U	0.38 U
SW8270	Hexachlorophene	5 5 U	5.5 U	5.9 U	5 7 U
SW8270	Hexachloropropene	1 8 U	1 8 U	2 U	1.9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	Isophorone	0.37 U	0.37 U	0 4 U	0.38 U
SW8270	Isosafrole	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0 37 U	0 37 U	0.4 U	0.38 U
SW8270	Methapyrilene	0 92 U	0 92 U	0 99 U	0 95 U
SW8270	Methyl methanesulfonate	0 37 U	0 37 U	0.4 U	0.38 U
SW8270	Naphthalene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Nitrobenzene	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	Nitrosomethylethylamine	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	N-Nitrosodiethylamine	0 74 U	0 74 U	0 79 U	0.76 U
SW8270	N-Nitrosodimethylamine	0.74 U	0.74 U	0 79 U	0 76 U
SW8270	N-Nitrosodi-n-butylamine	0.37 U	0.37 U	0.4 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0 37 U	0.37 U	0 4 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	N-Nitrosomorpholine	0.74 U	0 74 U	0 79 U	0 76 U
SW8270	N-Nitrosopiperidine	0 37 U	0.37 U	0 4 U	0 38 U
SW8270	N-Nitrosopyrrolidine	0 74 U	0 74 U	0.79 U	0 76 U
SW8270	o-Cresol (2-methylphenol)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	o-Toluidine	0 74 U	0 74 U	0 79 U	0 76 U
SW8270	p-Dimethylaminoazobenzene	0 74 U	0 74 U	0 79 U	0.76 U
SW8270	Pentachlorobenzene	0 37 U	0.37 U	0.4 U	0 38 U
SW8270	Pentachloronitrobenzene	0.37 U	0.37 U	0 4 U	0.38 U
SW8270	Pentachlorophenol	1 8 U	1.8 U	2 U	1.9 U
SW8270	Phenacetin	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Phenanthrene	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	Phenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	p-Phenylenediamine	1 5 U	1 5 U	1.6 U	1 5 U
SW8270	Pronamide	0 37 U	0.37 U	0 4 U	0 38 U
SW8270	Pyrene	0 37 U	0.37 U	0 4 U	0 38 U
SW8270	Pyridine	0.74 U	0.74 U	0 79 U	0.76 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42003-15'	BHGLSWMU42003-15' Duplicate	BHGLSWMU42004-00'	BHGLSWMU42004-05'
SW8270	Safrole	0 37 U	0.37 U	0 4 U	0 38 U
TX1005	Petroleum Hydrocarbons	3.9 F	3 9 F	6.5 F	60 UJ
TX1005	Petroleum Hydrocarbons- Diesel	56 UJ	56 UJ	3 2 F	60 UJ
TX1005	Petroleum Hydrocarbons- Gasoline	3.9 F	3 9 F	3.2 F	60 UJ

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data.

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
M5500	Ethylene Glycol	6.4	6 U
SW6010	Antimony	0 57 F	0 53 F
SW6010	Arsenic	4.1 J	4.1 J
SW6010	Barium	38 J	38 8 J
SW6010	Beryllium	0 53	0 46 J
SW6010	Cadmium	0 07 F	0 34 U
SW6010	Chromium (total)	10.7	8.8
SW6010	Cobalt	3 6 F	6 7
SW6010	Copper	7.4	8 9
SW6010	Lead	5.9	6 6
SW6010	Nickel	9.4	11.2
SW6010	Tin	27.8 U	26.9 U
SW6010	Vanadium	22 8	19.7 F
SW6010	Zinc	18.9 F	22.5
SW7471	Mercury	0 04 U	0 04 U
SW7740	Selenium	0 24 UJ	0 23 UJ
SW7761	Silver	0.16 U	0 15 U
SW7841	Thallium	0.81 UJ	0 77 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0.004 U	0.004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 UJ	0.002 UJ
SW8260	1,1,2-Trichloroethane	0 005 UJ	0 005 UJ
SW8260	1,1-Dichloroethane	0.002 U	0 002 U
SW8260	1,1-Dichloroethene	0.005 U	0.005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 UJ	0.003 UJ
SW8260	1,2-Dichloroethane	0 003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0.005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U
SW8260	2-Hexanone	0 005 U	0.005 U
SW8260	Acetone	0 005 U	0 005 U
SW8260	Acetonitrile	0 041 U	0 037 U
SW8260	Acrolein	0 1 U	0.094 U
SW8260	Acrylonitrile	0 041 U	0.037 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0.009 U
SW8260	Benzene	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0 004 U
SW8260	Bromoform	0 005 UJ	0.005 UJ
SW8260	Bromomethane	0 005 U	0.005 U
SW8260	Carbon disulfide	0 005 U	0.005 U
SW8260	Carbon tetrachloride	0.005 U	0 005 U
SW8260	Chlorobenzene	0.002 U	0 002 U
SW8260	Chloroethane	0 005 U	0.005 U
SW8260	Chloroform	0 002 U	0.002 U
SW8260	Chloromethane	0 005 U	0.005 U
SW8260	cis-1,3-Dichloropropene	0.005 U	0 005 U
SW8260	Dibromochloromethane	0.003 U	0 003 U
SW8260	Dibromomethane	0.005 U	0.005 U
SW8260	Dichlorodifluoromethane	0 005 U	0.005 U
SW8260	Ethyl methacrylate	0.005 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U
SW8260	Isobutanol	0.2 U	0 19 U
SW8260	m- & p-Xylene (sum of isomers)	0.005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0.005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 005 U	0.005 U
SW8260	Methyl methacrylate	0.005 U	0 005 U
SW8260	Methylacrylonitrile	0 005 U	0 005 U
SW8260	Methylene chloride	0.002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U
SW8260	Pentachloroethane	0 005 U	0.005 U
SW8260	Propane nitrile (propionitrile)	0 02 U	0 019 U
SW8260	Styrene	0 002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0 005 U
SW8260	Toluene	0 005 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0.005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 005 U	0 005 U
SW8260	Vinyl acetate	0.005 U	0.005 U
SW8260	Vinyl chloride	0 005 U	0.005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0.38 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
SW8270	1,2,4-Trichlorobenzene	0.38 U	0 37 U
SW8270	1,2-Dichlorobenzene	0.38 U	0.37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.5 U	1.5 U
SW8270	1,3-Dichlorobenzene	0 38 U	0.37 U
SW8270	1,3-Dinitrobenzene	0 38 U	0.37 U
SW8270	1,4-Dichlorobenzene	0 38 U	0.37 U
SW8270	1,4-Dioxane (p-dioxane)	1.5 U	1.5 U
SW8270	1,4-Naphthoquinone	1 9 U	1.8 U
SW8270	1-Naphthylamine	0.75 U	0 74 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 38 U	0 37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.38 U	0 37 U
SW8270	2,4,5-Trichlorophenol	1 9 U	1 8 U
SW8270	2,4,6-Trichlorophenol	0 38 U	0.37 U
SW8270	2,4-Dichlorophenol	0 38 U	0.37 U
SW8270	2,4-Dimethylphenol	0 38 U	0 37 U
SW8270	2,4-Dinitrophenol	1.9 U	1.8 U
SW8270	2,4-Dinitrotoluene	0.38 U	0 37 U
SW8270	2,6-Dichlorophenol	0.75 U	0 74 U
SW8270	2,6-Dinitrotoluene	0 38 U	0 37 U
SW8270	2-Acetylaminofluorene	0.75 U	0.74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 75 U	0.74 U
SW8270	2-Chloronaphthalene	0 38 U	0.37 U
SW8270	2-Chlorophenol	0.38 U	0 37 U
SW8270	2-Methylnaphthalene	0.38 U	0 37 U
SW8270	2-Nitroaniline	1 9 U	1 8 U
SW8270	2-Nitrophenol	0 38 U	0 37 U
SW8270	2-Picoline (alpha-picoline)	0 38 U	0.37 U
SW8270	3,3'-Dichlorobenzidine	0 75 U	0.74 U
SW8270	3,3'-Dimethylbenzidine	1.9 U	1 8 U
SW8270	3-Methylcholanthrene	0.38 U	0 37 U
SW8270	3-Nitroaniline	1 9 U	1.8 U
SW8270	4,6-Dinitro-2-methylphenol	1 9 U	1 8 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.75 U	0.74 U
SW8270	4-Bromophenyl phenyl ether	0 38 U	0 37 U
SW8270	4-Chloro-3-methylphenol	0.75 U	0 74 U
SW8270	4-Chloroaniline	0.75 U	0.74 U
SW8270	4-Chlorophenyl phenyl ether	0 38 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
SW8270	4-Nitroaniline	1 9 U	1.8 U
SW8270	4-Nitrophenol	1 9 U	1.8 U
SW8270	4-Nitroquinoline-N-oxide	1 9 U	1.8 U
SW8270	5-Nitro-o-toluidine	0.75 U	0.74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 75 U	0.74 U
SW8270	Acenaphthene	0 38 U	0.37 U
SW8270	Acenaphthylene	0.38 U	0 37 U
SW8270	Acetophenone	0.75 U	0 74 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.9 U	1 8 U
SW8270	Aniline (phenylamine, aminobenzene)	0.38 U	0.37 U
SW8270	Anthracene	0 38 U	0 37 U
SW8270	Aramite (total)	0 75 U	0 74 U
SW8270	Benzo(a)anthracene	0 38 U	0.37 U
SW8270	Benzo(a)pyrene	0 38 U	0.37 U
SW8270	Benzo(b)fluoranthene	0.38 U	0.37 U
SW8270	Benzo(g,h,i)perylene	0.38 U	0.37 U
SW8270	Benzo(k)fluoranthene	0 38 U	0.37 U
SW8270	Benzoic acid	1 9 U	1 8 U
SW8270	Benzyl alcohol	0 38 U	0.37 U
SW8270	Benzyl butyl phthalate	0 38 U	0 37 U
SW8270	bis(2-Chloroethoxy)methane	0 38 U	0.37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.38 U	0.37 U
SW8270	bis(2-Ethylhexyl)phthalate	0 38 U	0.37 U
SW8270	Chlorobenzilate	0 38 U	0.37 U
SW8270	Chrysene	0 38 U	0 37 U
SW8270	Diallate (total of cis and trans isomers)	0 38 U	0 37 U
SW8270	Dibenz(a,h)anthracene	0.38 U	0.37 U
SW8270	Dibenzofuran	0 38 U	0.37 U
SW8270	Diethyl phthalate	0.38 U	0.37 U
SW8270	Dimethyl phthalate	0 38 U	0 37 U
SW8270	Di-n-butyl phthalate	0 38 U	0 37 U
SW8270	Di-n-octyl phthalate	0 38 U	0 37 U
SW8270	Dinoseb	0 75 U	0.74 U
SW8270	Diphenylamine	0.38 U	0.37 U
SW8270	Ethyl methanesulfonate	0 75 U	0.74 U
SW8270	Fluoranthene	0 38 U	0.37 U
SW8270	Fluorene	0 38 U	0 37 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
SW8270	Hexachlorobenzene	0 38 U	0.37 U
SW8270	Hexachlorobutadiene	0 38 U	0 37 U
SW8270	Hexachlorocyclopentadiene	0 38 U	0 37 U
SW8270	Hexachloroethane	0.38 U	0 37 U
SW8270	Hexachlorophene	5 6 U	5 5 U
SW8270	Hexachloropropene	1.9 U	1 8 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 38 U	0.37 U
SW8270	Isophorone	0 38 U	0 37 U
SW8270	Isosafrole	0 38 U	0 37 U
SW8270	m- & p-Cresol (sum of isomers)	0 38 U	0 37 U
SW8270	Methapyrilene	0 94 U	0 92 U
SW8270	Methyl methanesulfonate	0 38 U	0 37 U
SW8270	Naphthalene	0 38 U	0.37 U
SW8270	Nitrobenzene	0 38 U	0 37 U
SW8270	Nitrosomethylethylamine	0 38 U	0 37 U
SW8270	N-Nitrosodiethylamine	0.75 U	0.74 U
SW8270	N-Nitrosodimethylamine	0 75 U	0 74 U
SW8270	N-Nitrosodi-n-butylamine	0.38 U	0 37 U
SW8270	N-Nitrosodi-n-propylamine	0 38 U	0.37 U
SW8270	N-Nitrosodiphenylamine	0.38 U	0 37 U
SW8270	N-Nitrosomorpholine	0 75 U	0 74 U
SW8270	N-Nitrosopiperidine	0 38 U	0.37 U
SW8270	N-Nitrosopyrrolidine	0 75 U	0 74 U
SW8270	o-Cresol (2-methylphenol)	0.38 U	0 37 U
SW8270	o-Toluidine	0 75 U	0.74 U
SW8270	p-Dimethylaminoazobenzene	0 75 U	0.74 U
SW8270	Pentachlorobenzene	0 38 U	0 37 U
SW8270	Pentachloronitrobenzene	0.38 U	0.37 U
SW8270	Pentachlorophenol	1 9 U	1.8 U
SW8270	Phenacetin	0 38 U	0.37 U
SW8270	Phenanthrene	0 38 U	0 37 U
SW8270	Phenol	0 38 U	0 37 U
SW8270	p-Phenylenediamine	1 5 U	1 5 U
SW8270	Pronamide	0 38 U	0 37 U
SW8270	Pyrene	0 38 U	0.37 U
SW8270	Pyridine	0 75 U	0 74 U

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Table C.5
Analytical Data-Soil
SWMU 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLSWMU42004-10'	BHGLSWMU42004-15'
SW8270	Safrole	0 38 U	0 37 U
TX1005	Petroleum Hydrocarbons	59 UJ	56 UJ
TX1005	Petroleum Hydrocarbons- Diesel	59 UJ	56 UJ
TX1005	Petroleum Hydrocarbons- Gasoline	59 UJ	56 UJ

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006001-00'	BHGLAOC006001-05' Duplicate	BHGLAOC006001-05'	BHGLAOC006002-00'	BHGLAOC006002-05'
M5500	Ethylene Glycol	6 U	5 U	5 U	6 U	6 U
SW6010	Antimony	4 2 UJ	4 1 UJ	4.1 UJ	4 UJ	3 9 UJ
SW6010	Arsenic	2 4 F	3 8 F	3 8 F	2 7 F	1 2 F
SW6010	Barium	76 1	139	139	77.7	110
SW6010	Beryllium	0 82	0 5	0 5	0 85	0 33
SW6010	Cadmium	0 16 F	0 36 F	0 36 F	0.16 F	0 16 F
SW6010	Chromium (total)	13 7	11 2	11 2	15 8	6 1 F
SW6010	Cobalt	4 6 F	3 2 F	3 2 F	5	1 6 F
SW6010	Copper	9 7	6 1 F	6 1 F	9 8	3 1 F
SW6010	Lead	8 3 J	5 4 J	5 4 J	8 8 J	4 1 J
SW6010	Nickel	9 1	7 F	7 F	9 5	3 9 F
SW6010	Tin	33 5 U	32 8 U	32 8 U	32 2 U	31 2 U
SW6010	Vanadium	22 7 F	23 2 F	23 2 F	25 8	9 9 F
SW6010	Zinc	26 8	24 3 F	24 8	30 7	11 3 F
SW7471	Mercury	0 04 U	0 04 U	0 04 U	0 04 U	0 04 U
SW7740	Selenium	0 18 F	1 2 UJ	1 2 UJ	0 24 UJ	0 23 UJ
SW7761	Silver	0.17 UJ	0 16 UJ	0 16 UJ	0.16 UJ	0 15 UJ
SW7841	Thallium	0 85 UJ	0 82 UJ	0 82 UJ	0 8 UJ	0 76 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	2-Hexanone	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Acetone	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Acetonitrile	0 04 U	0 043 U	0 043 U	0 042 U	0 041 U
SW8260	Acrolein	0 1 U	0 11 U	0 11 U	0 1 U	0 1 U
SW8260	Acrylonitrile	0 04 U	0 043 U	0 043 U	0 042 U	0 041 U
SW8260	Allyl chloride (3-chloropropene)	0 01 U	0.011 U	0 011 U	0 01 U	0 01 U
SW8260	Benzene	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	Bromoform	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006001-00'	BHGLAOC006001-05' Duplicate	BHGLAOC006001-05'	BHGLAOC006002-00'	BHGLAOC006002-05'
SW8260	Bromomethane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon disulfide	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0.005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloroethane	0 005 U	0 005 U	0 005 U	0.005 U	0 005 U
SW8260	Chloroform	0.002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 005 U	0 005 U	0.005 U	0 005 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0.003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0.005 R	0 005 R	0 005 R	0 005 R	0 005 R
SW8260	Ethyl methacrylate	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Isobutanol	0 2 U	0 21 U	0 21 U	0 21 U	0 2 U
SW8260	m- & p-Xylene (sum of isomers)	0.005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl methacrylate	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methylacrylonitrile	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methylene chloride	0.002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Pentachloroethane	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 02 U	0 021 U	0 021 U	0 021 U	0 02 U
SW8260	Styrene	0 002 U	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	Toluene	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl acetate	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl chloride	0 005 U	0 005 U	0 005 U	0 005 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 39 U	0 39 U	0.39 U	0.39 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	1,2-Dichlorobenzene	0.39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 6 U	1 6 U	1 6 U	1 6 U	1 5 U
SW8270	1,3-Dichlorobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	1,3-Dinitrobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	1,4-Dichlorobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	1,4-Dioxane (p-dioxane)	1 6 U	1 6 U	1 6 U	1 6 U	1 5 U
SW8270	1,4-Naphthoquinone	2 U	1 9 U	2 U	2 U	1 9 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006001-00'	BHGLAOC006001-05' Duplicate	BHGLAOC006001-05'	BHGLAOC006002-00'	BHGLAOC006002-05'
SW8270	1-Naphthylamine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 39 R	0 39 U	0 39 U	0 39 R	0 38 U
SW8270	2,3,4,6-Tetrachlorophenol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2,4,5-Trichlorophenol	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2,4-Dichlorophenol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2,4-Dimethylphenol	0 39 U	0 39 U	0 39 U	0 39 U	0.38 U
SW8270	2,4-Dinitrophenol	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	2,4-Dinitrotoluene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2,6-Dichlorophenol	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	2,6-Dinitrotoluene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2-Acetylaminofluorene	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	2-Chloronaphthalene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2-Chlorophenol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2-Methylnaphthalene	0.39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	2-Nitroaniline	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	2-Nitrophenol	0.39 U	0 39 U	0 39 U	0 39 U	0.38 U
SW8270	2-Picoline (alpha-picoline)	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	3,3'-Dimethylbenzidine	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	3-Methylcholanthrene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	3-Nitroaniline	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	2 R	1 9 U	2 R	2 R	1 9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	4-Bromophenyl phenyl ether	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	4-Chloro-3-methylphenol	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	4-Chloroaniline	0 78 U	0 78 U	0 78 U	0 79 U	0.76 U
SW8270	4-Chlorophenyl phenyl ether	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	4-Nitroaniline	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	4-Nitrophenol	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	4-Nitroquinoline-N-oxide	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	5-Nitro-o-toluidine	0 78 U	0 78 U	0.78 U	0 79 U	0 76 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 78 U	0 78 U	0 78 U	0.79 U	0 76 U
SW8270	Acenaphthene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Acenaphthylene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Acetophenone	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	alpha, alpha-Dimethylphenethylamine	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Anthracene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Aramite (total)	0 78 U	0 78 U	0.78 U	0 79 U	0 76 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006001-00'	BHGLAOC006001-05' Duplicate	BHGLAOC006001-05'	BHGLAOC006002-00'	BHGLAOC006002-05'
SW8270	Benzo(a)anthracene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Benzo(a)pyrene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Benzo(b)fluoranthene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 39 U	0 39 U	0 39 U	0.39 U	0 38 U
SW8270	Benzoic acid	2 R	1 9 R	2 R	2 R	1 9 R
SW8270	Benzyl alcohol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Benzyl butyl phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0.38 U
SW8270	bis(2-Chloroethoxy)methane	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	bis(2-Ethylhexyl)phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Chlorobenzilate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Chrysene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Dibenz(a,h)anthracene	0.39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Dibenzofuran	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Diethyl phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Dimethyl phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Di-n-butyl phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Di-n-octyl phthalate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Dinoseb	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	Diphenylamine	0 39 U	0 39 U	0 39 U	0.39 U	0 38 U
SW8270	Ethyl methanesulfonate	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	Fluoranthene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Fluorene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Hexachlorobenzene	0 39 U	0 39 U	0.39 U	0 39 U	0 38 U
SW8270	Hexachlorobutadiene	0 39 U	0 39 U	0 39 U	0.39 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Hexachloroethane	0 39 U	0 39 U	0.39 U	0 39 U	0.38 U
SW8270	Hexachlorophene	5 9 U	5 8 U	5 9 U	5 9 U	5 7 U
SW8270	Hexachloropropene	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Isophorone	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Isosafrole	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Methapyrilene	0 98 U	0 97 U	0 98 U	0 98 U	0 95 U
SW8270	Methyl methanesulfonate	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Naphthalene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Nitrobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Nitrosomethylethylamine	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	N-Nitrosodiethylamine	0.78 U	0 78 U	0 78 U	0 79 U	0 76 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006001-00'	BHGLAOC006001-05' Duplicate	BHGLAOC006001-05'	BHGLAOC006002-00'	BHGLAOC006002-05'
SW8270	N-Nitrosodimethylamine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	N-Nitrosodi-n-butylamine	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	N-Nitrosomorpholine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	N-Nitrosopiperidine	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	N-Nitrosopyrrolidine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	o-Cresol (2-methylphenol)	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	o-Toluidine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	p-Dimethylaminoazobenzene	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	Pentachlorobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Pentachloronitrobenzene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Pentachlorophenol	2 U	1 9 U	2 U	2 U	1 9 U
SW8270	Phenacetin	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Phenanthrene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Phenol	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	p-Phenylenediamine	1 6 U	1 6 U	1 6 U	1 6 U	1 5 U
SW8270	Pronamide	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Pyrene	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
SW8270	Pyridine	0 78 U	0 78 U	0 78 U	0 79 U	0 76 U
SW8270	Safrole	0 39 U	0 39 U	0 39 U	0 39 U	0 38 U
TX1005	Petroleum Hydrocarbons	57 F	31 F	44 F	44 F	17 F
TX1005	Petroleum Hydrocarbons- Diesel	54 F	28 F	41 F	42 F	14 F
TX1005	Petroleum Hydrocarbons- Gasoline	3.1 F	2 9 F	3 2 F	2 9 F	3 1 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006003-00'	BHGLAOC006003-05'	BHGLAOC006004-00'	BHGLAOC006004-05'
M5500	Ethylene Glycol	6 U	5 U	6 U	6 U
SW6010	Antimony	3 9 UJ	4 1 UJ	4.2 UJ	3 9 UJ
SW6010	Arsenic	1 7 F	3 3 F	2 7 F	3 1 F
SW6010	Barium	44 4	86 4	62 3	75 3
SW6010	Beryllium	0 56	0 34	0 41	0 48
SW6010	Cadmium	0 15 F	0 2 F	0 13 F	0 17 F
SW6010	Chromium (total)	9.3	8 6	7 3 F	10 8
SW6010	Cobalt	3 5 F	3 6 F	2 5 F	3 1 F
SW6010	Copper	7 6 F	3.9 F	4 7 F	5 6 F
SW6010	Lead	6 9 J	4 3 J	6 4 J	8 5 J
SW6010	Nickel	6 3 F	6 8 F	5 3 F	6 9 F
SW6010	Tin	31 2 U	32 5 U	33 5 U	31 U
SW6010	Vanadium	14 4 F	18 5 F	15.4 F	21 3 F
SW6010	Zinc	20 4 F	14 5 F	16 4 F	21 3 F
SW7471	Mercury	0 04 U	0 04 U	0 04 U	0 04 U
SW7740	Selenium	0 12 F	0 23 UJ	0 16 F	0 23 UJ
SW7761	Silver	0 15 UJ	0 15 UJ	0.17 UJ	0 15 UJ
SW7841	Thallium	0 73 UJ	0 76 UJ	0 87 UJ	0 77 UJ
SW8260	1,1,1,2-Tetrachloroethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	1,1,2,2-Tetrachloroethane	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1,2-Trichloroethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,1-Dichloroethane	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	1,1-Dichloroethene	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2,3-Trichloropropane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromo-3-chloropropane	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloroethene, cis-	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	1,2-Dichloroethene, trans-	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	1,2-Dichloropropane	0 002 U	0 002 U	0 002 U	0.002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	2-Hexanone	0 005 U	0 005 U	0 005 U	0 024
SW8260	Acetone	0 005 U	0 005 U	0 005 U	0 006 U
SW8260	Acetonitrile	0 039 U	0 041 U	0 039 U	0 039 U
SW8260	Acrolein	0 097 U	0 1 U	0 098 U	0 097 U
SW8260	Acrylonitrile	0 039 U	0 041 U	0 039 U	0 039 U
SW8260	Allyl chloride (3-chloropropene)	0 01 U	0 01 U	0 01 U	0 01 U
SW8260	Benzene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0 004 U	0 004 U	0 004 U	0 004 U
SW8260	Bromoform	0 005 U	0 005 U	0 005 U	0 005 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006003-00'	BHGLAOC006003-05'	BHGLAOC006004-00'	BHGLAOC006004-05'
SW8260	Bromomethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon disulfide	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Carbon tetrachloride	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Chlorobenzene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloroethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Chloroform	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Chloromethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	cis-1,3-Dichloropropene	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dibromochloromethane	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Dibromomethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Dichlorodifluoromethane	0.005 R	0 005 R	0 005 R	0 005 R
SW8260	Ethyl methacrylate	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Ethylbenzene	0 003 U	0 003 U	0 003 U	0 003 U
SW8260	Iodomethane (methyl iodide)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Isobutanol	0 19 U	0 2 U	0 2 U	0 19 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl ethyl ketone (2-butanone)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methyl methacrylate	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methylacrylonitrile	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Methylene chloride	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Pentachloroethane	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Propane nitrile (propionitrile)	0 019 U	0 02 U	0 02 U	0 019 U
SW8260	Styrene	0 002 U	0 002 U	0 002 U	0 002 U
SW8260	Tetrachloroethene (PCE)	0 002 F	0 005 U	0 005 U	0 005 U
SW8260	Toluene	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,3-Dichloropropene	0.005 U	0 005 U	0 005 U	0 005 U
SW8260	trans-1,4-Dichloro-2-butene	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Trichloroethene (TCE)	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl acetate	0 005 U	0 005 U	0 005 U	0 005 U
SW8260	Vinyl chloride	0 005 U	0 005 U	0 005 U	0 005 U
SW8270	1,2,4,5-Tetrachlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,2,4-Trichlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,2-Dichlorobenzene	0 37 U	0.37 U	0 4 U	0 38 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1 5 U	1 5 U	1 6 U	1 5 U
SW8270	1,3-Dichlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,3-Dinitrobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,4-Dichlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	1,4-Dioxane (p-dioxane)	1 5 U	1 5 U	1 6 U	1 5 U
SW8270	1,4-Naphthoquinone	1 9 U	1 8 U	2 U	1 9 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

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Method	Analyte (mg/kg)	BHGLAOC006003-00'	BHGLAOC006003-05'	BHGLAOC006004-00'	BHGLAOC006004-05'
SW8270	1-Naphthylamine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	2,2'-Oxybis(1-chloro)propane	0 37 R	0 37 R	0 4 U	0 38 R
SW8270	2,3,4,6-Tetrachlorophenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2,4,5-Trichlorophenol	1 9 U	1 8 U	2 U	1 9 U
SW8270	2,4,6-Trichlorophenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2,4-Dichlorophenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2,4-Dimethylphenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2,4-Dinitrophenol	1 9 U	1 8 U	2 U	1 9 U
SW8270	2,4-Dinitrotoluene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2,6-Dichlorophenol	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	2,6-Dinitrotoluene	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	2-Acetylaminofluorene	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.74 U	0 74 U	0 8 U	0 76 U
SW8270	2-Chloronaphthalene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2-Chlorophenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2-Methylnaphthalene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2-Nitroaniline	1 9 U	1 8 U	2 U	1 9 U
SW8270	2-Nitrophenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	2-Picoline (alpha-picoline)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	3,3'-Dichlorobenzidine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	3,3'-Dimethylbenzidine	1 9 U	1 8 U	2 U	1 9 U
SW8270	3-Methylcholanthrene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	3-Nitroaniline	1 9 U	1 8 U	2 U	1 9 U
SW8270	4,6-Dinitro-2-methylphenol	1 9 R	1 8 R	2 U	1 9 R
SW8270	4-Aminobiphenyl (4-biphenylamine)	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	4-Bromophenyl phenyl ether	0.37 U	0 37 U	0 4 U	0 38 U
SW8270	4-Chloro-3-methylphenol	0 74 U	0.74 U	0 8 U	0 76 U
SW8270	4-Chloroaniline	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	4-Chlorophenyl phenyl ether	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	4-Nitroaniline	1 9 U	1 8 U	2 U	1 9 U
SW8270	4-Nitrophenol	1.9 U	1 8 U	2 U	1 9 U
SW8270	4-Nitroquinoline-N-oxide	1 9 U	1 8 U	2 U	1 9 U
SW8270	5-Nitro-o-toluidine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	Acenaphthene	0 37 U	0 37 U	0 4 U	0.38 U
SW8270	Acenaphthylene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Acetophenone	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	alpha, alpha-Dimethylphenethylamine	1 9 U	1 8 U	2 U	1 9 U
SW8270	Aniline (phenylamine, aminobenzene)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Anthracene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Aramite (total)	0 74 U	0 74 U	0 8 U	0 76 U

Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006003-00'	BHGLAOC006003-05'	BHGLAOC006004-00'	BHGLAOC006004-05'
SW8270	Benzo(a)anthracene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(a)pyrene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(b)fluoranthene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(g,h,i)perylene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzo(k)fluoranthene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzoic acid	1 9 R	1 8 R	2 R	1 9 R
SW8270	Benzyl alcohol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Benzyl butyl phthalate	0 37 U	0 37 U	0 31 F	0 38 U
SW8270	bis(2-Chloroethoxy)methane	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	bis(2-Ethylhexyl)phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Chlorobenzilate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Chrysene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Diallate (total of cis and trans isomers)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Dibenz(a,h)anthracene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Dibenzofuran	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	Diethyl phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Dimethyl phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Di-n-butyl phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Di-n-octyl phthalate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Dinoseb	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	Diphenylamine	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Ethyl methanesulfonate	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	Fluoranthene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Fluorene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachlorobutadiene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachlorocyclopentadiene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachloroethane	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Hexachlorophene	5 6 U	5 5 U	6 U	5 7 U
SW8270	Hexachloropropene	1 9 U	1 8 U	2 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Isophorone	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Isosafrole	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	m- & p-Cresol (sum of isomers)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Methapyrilene	0 93 U	0 92 U	1 U	0 95 U
SW8270	Methyl methanesulfonate	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Naphthalene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Nitrobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Nitrosomethylethylamine	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	N-Nitrosodiethylamine	0 74 U	0 74 U	0 8 U	0 76 U

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Table C.6
Analytical Data-Soil
AOC 6
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC006003-00'	BHGLAOC006003-05'	BHGLAOC006004-00'	BHGLAOC006004-05'
SW8270	N-Nitrosodimethylamine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	N-Nitrosodi-n-butylamine	0 37 U	0 37 U	0.4 U	0 38 U
SW8270	N-Nitrosodi-n-propylamine	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	N-Nitrosodiphenylamine	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	N-Nitrosomorpholine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	N-Nitrosopiperidine	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	N-Nitrosopyrrolidine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	o-Cresol (2-methylphenol)	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	o-Toluidine	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	p-Dimethylaminoazobenzene	0 74 U	0 74 U	0 8 U	0 76 U
SW8270	Pentachlorobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Pentachloronitrobenzene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Pentachlorophenol	1.9 U	1 8 U	2 U	1.9 U
SW8270	Phenacetin	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Phenanthrene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Phenol	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	p-Phenylenediamine	1 5 U	1 5 U	1 6 U	1 5 U
SW8270	Pronamide	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Pyrene	0 37 U	0 37 U	0 4 U	0 38 U
SW8270	Pyridine	0 74 U	0 74 U	0 8 U	0.76 U
SW8270	Safrole	0 37 U	0 37 U	0 4 U	0 38 U
TX1005	Petroleum Hydrocarbons	3 F	2 8 F	19 F	6 7 F
TX1005	Petroleum Hydrocarbons- Diesel	55 U	55 U	5 F	3 8 F
TX1005	Petroleum Hydrocarbons- Gasoline	3 F	2 8 F	14 F	3 F

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL

F = The analyte was positively identified, but the associated numerical value is below the MQL

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria

S = Screeening data

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW6010	Antimony	4.7 UJ	5.1 UJ	4 5 UJ	5 UJ	4.6 UJ
SW6010	Arsenic	4 2 F	4.6 F	2.7 F	3.1 F	2.6 F
SW6010	Barium	126	79.6	52.2	45.3	56.3
SW6010	Beryllium	0.98	0 56	0.39	0.3 J	0.16 F
SW6010	Cadmium	0.47 UJ	0.13 UJ	0.08 UJ	0.09 UJ	0.07 UJ
SW6010	Chromium (total)	14.4	11.1	11	8.1 F	5 3 F
SW6010	Cobalt	6.8	4.5 F	2.8 F	3 1 F	2.8 F
SW6010	Copper	7.4 F	6.8 F	5.5 F	3.1 F	2.4 F
SW6010	Lead	11	10.3	8.3	4.8	4.1
SW6010	Nickel	15	8.9 F	6.3 F	6.4 F	4.6 F
SW6010	Tin	1.8 F	1.5 F	1 5 F	39.8 UJ	1.2 F
SW6010	Vanadium	29 7	27.2 F	17.8 F	15.1 F	11.2 F
SW6010	Zinc	21.7 F	20.5 F	16 F	13 6 F	9.8 F
SW7471	Mercury	0.04 U	0 04 U	0 04 U	0.04 U	0 04 U
SW7740	Selenium	0.3 UJ	0.3 UJ	0.31 UJ	0.3 UJ	0.28 UJ
SW7761	Silver	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.19 UJ
SW7841	Thallium	1 U	1 UJ	1 U	0.99 UJ	0 93 UJ
SW8080	Aldrin	0.34 U	0.0034 U	0.0034 U	0.0034 U	0.0033 U
SW8080	alpha-BHC (alpha-hexachlorocyclohexane)	0.23 U	0.0022 U	0.0022 U	0.0023 U	0.0022 U
SW8080	alpha-Chlordane	1.7 U	0 017 U	0.017 U	0.017 U	0.016 U
SW8080	alpha-Endosulfan (Endosulfan I)	1 U	0.01 U	0 01 U	0 01 U	0.0098 U
SW8080	beta-BHC (beta-hexachlorocyclohexane)	0.46 U	0.0045 U	0.0045 U	0.0046 U	0 0044 U
SW8080	beta-Endosulfan (Endosulfan II)	0.34 U	0.0034 U	0 0034 U	0.0034 U	0.0033 U
SW8080	Chlordane	1 U	0.01 U	0.01 U	0.01 U	0 0098 U
SW8080	delta-BHC (delta-hexachlorocyclohexane)	0.69 U	0.0068 U	0.0068 U	0.0069 U	0.0066 U
SW8080	Dieldrin	1.2 U	0.011 U	0.011 U	0 011 U	0.011 U
SW8080	Endosulfan sulfate	4 6 U	0.045 U	0.045 U	0.046 U	0.044 U
SW8080	Endrin	0.46 U	0.0045 U	0.0045 U	0.0046 U	0.0044 U
SW8080	Endrin aldehyde	2.3 U	0.022 U	0.022 U	0 023 U	0.022 U
SW8080	gamma-BHC (Lindane)	0.34 U	0.0034 U	0.0034 U	0.0034 U	0 0033 U
SW8080	gamma-Chlordane	1.7 U	0.017 U	0.017 U	0 017 U	0.016 U

Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8080	Heptachlor	0.23 U	0.0022 U	0.0022 U	0 0023 U	0.0022 U
SW8080	Heptachlor epoxide	6.9 U	0.068 U	0.068 U	0.069 U	0.066 U
SW8080	Isodrin	0.46 U	0.0045 U	0.0045 U	0.0046 U	0.0044 U
SW8080	Kepone	9.6 U	0.094 U	0.094 U	0.095 U	0.091 U
SW8080	Methoxychlor	12 U	0.11 U	0.11 U	0.11 U	0.11 U
SW8080	p,p'-DDD (4,4'-DDD)	0.8 U	0.0079 U	0.0079 U	0.008 U	0.0076 U
SW8080	p,p'-DDE (4,4'-DDE)	0.34 U	0 0034 U	0.0034 U	0.0034 U	0.0033 U
SW8080	p,p'-DDT (4,4'-DDT)	0.92 U	0.009 U	0.009 U	0.0092 U	0 0088 U
SW8080	PCB-1016 (Arochlor 1016)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1221 (Arochlor 1221)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1232 (Arochlor 1232)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1242 (Arochlor 1242)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1248 (Arochlor 1248)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1254 (Arochlor 1254)	120 U	1.1 U	1.1 U	1.1 U	1.1 U
SW8080	PCB-1260 (Arochlor 1260)	120 U	1.1 U	1.1 U	1.1 U	0 015 F
SW8080	Toxaphene	23 U	0.22 U	0.22 U	0.23 U	0.22 U
SW8141	Dimethoate	0 077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	Disulfoton	0.077 U	0 076 U	0 076 U	0.076 U	0 073 UJ
SW8141	Famphur	0.077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	O,O,O-Triethyl phosphorothioate	0.077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	Parathion, ethyl	0.077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	Parathion, methyl	0.077 U	0.076 U	0.076 U	0.076 U	0 073 UJ
SW8141	Phorate	0 077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	Thiodiphosphoric acid, tetraethyl ester (Sulfotep)	0 077 U	0.076 U	0.076 U	0.076 U	0.073 UJ
SW8141	Zinophos (Thionazin)	0.077 U	0 076 U	0.076 U	0.076 U	0.021 F
SW8150	2,4,5-T (trichlorophenoxyacetic acid)	0.039 U	0.038 U	0.038 U	0.037 U	0.037 U
SW8150	2,4-D (dichlorophenoxyacetic acid)	0.39 U	0.38 U	0 38 U	0.37 U	0.37 U
SW8150	Silvex (2,4,5-TP)	0.039 U	0.038 U	0.038 U	0.037 U	0.037 U
SW8260	1,1,1,2-Tetrachloroethane	0.003 U	0.003 U	0 003 U	0.003 U	0 003 U
SW8260	1,1,1-Trichloroethane	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
SW8260	1,1,2,2-Tetrachloroethane	0.002 U	0.002 UJ	0 002 UJ	0.002 U	0 002 U

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8260	1,1,2-Trichloroethane	0.005 R	0.004 U	0.005 U	0.005 R	0.004 R
SW8260	1,1-Dichloroethane	0.002 U	0.002 U	0.002 U	0 002 U	0.002 U
SW8260	1,1-Dichloroethene	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	1,2,3-Trichloropropane	0.005 U	0.004 UJ	0.005 UJ	0.005 U	0.004 U
SW8260	1,2-Dibromo-3-chloropropane	0.005 U	0.004 UJ	0.005 UJ	0 005 U	0.004 U
SW8260	1,2-Dibromoethane (ethylene dibromide)	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
SW8260	1,2-Dichloroethane	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
SW8260	1,2-Dichloroethene, cis-	0.005 U	0.004 U	0.005 U	0.005 U	0 004 U
SW8260	1,2-Dichloroethene, trans-	0.003 U	0.003 U	0.003 U	0.003 U	0 003 U
SW8260	1,2-Dichloropropane	0.002 U	0.002 U	0.002 U	0.002 U	0 002 U
SW8260	2-Chloro-1,3-butadiene (chloroprene)	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	2-Hexanone	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Acetone	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Acetonitrile	0.042 U	0.036 U	0.038 U	0 037 U	0.037 U
SW8260	Acrolein	0 1 U	0.091 U	0 095 U	0.093 U	0 092 U
SW8260	Acrylonitrile	0.042 U	0 036 U	0.038 U	0.037 U	0 037 U
SW8260	Allyl chloride (3-chloropropene)	0.01 U	0.009 U	0.01 U	0.009 U	0.009 U
SW8260	Benzene	0.002 U	0.002 U	0 002 U	0 002 U	0 002 U
SW8260	Bromodichloromethane	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
SW8260	Bromoform	0.005 U	0.004 U	0.005 U	0.005 U	0 004 U
SW8260	Bromomethane	0.005 U	0.004 U	0 005 U	0.005 U	0.004 U
SW8260	Carbon disulfide	0.005 U	0.004 U	0 005 U	0 005 U	0.004 U
SW8260	Carbon tetrachloride	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Chlorobenzene	0.002 U	0.002 U	0 002 U	0 002 U	0.002 U
SW8260	Chloroethane	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Chloroform	0.002 U	0.002 U	0 002 U	0.002 U	0.002 U
SW8260	Chloromethane	0 005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	cis-1,3-Dichloropropene	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Dibromochloromethane	0.003 U	0.003 U	0 003 U	0 003 U	0.003 U
SW8260	Dibromomethane	0.005 U	0.004 U	0 005 U	0.005 U	0.004 U
SW8260	Dichlorodifluoromethane	0.005 R	0.004 R	0.005 R	0 005 R	0.004 R

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8260	Ethyl methacrylate	0 005 U	0.004 U	0.005 U	0.005 U	0 004 U
SW8260	Ethylbenzene	0.003 U	0.003 U	0 003 U	0.003 U	0.003 U
SW8260	Iodomethane (methyl iodide)	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Isobutanol	0.21 U	0.18 U	0.19 U	0.19 U	0.18 U
SW8260	m- & p-Xylene (sum of isomers)	0 005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Methyl ethyl ketone (2-butanone)	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Methyl isobutyl ketone (4-methyl-2-pentanone)	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Methyl methacrylate	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Methylacrylonitrile	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Methylene chloride	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SW8260	o-Xylene (1,2-dimethylbenzene)	0.005 U	0.004 U	0 005 U	0.005 U	0.004 U
SW8260	Pentachloroethane	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Propane nitrile (propionitrile)	0.021 U	0.018 U	0 019 U	0.019 U	0.018 U
SW8260	Styrene	0.002 U	0.002 U	0 002 U	0.002 U	0.002 U
SW8260	Tetrachloroethene (PCE)	0 005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Toluene	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	trans-1,3-Dichloropropene	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	trans-1,4-Dichloro-2-butene	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Trichloroethene (TCE)	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Vinyl acetate	0.005 U	0.004 U	0.005 U	0.005 U	0.004 U
SW8260	Vinyl chloride	0.005 U	0.004 U	0.005 U	0.005 U	0 004 U
SW8270	1,2,4,5-Tetrachlorobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	1,2,4-Trichlorobenzene	0.38 U	0.38 U	0 38 U	0.38 U	0.37 U
SW8270	1,2-Dichlorobenzene	0.38 U	0.38 U	0.38 U	0 38 U	0.37 U
SW8270	1,3,5-Trinitrobenzene (sym-trinitrobenzene)	1.5 U	1.5 U	1.5 U	1.5 U	1 5 U
SW8270	1,3-Dichlorobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	1,3-Dinitrobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	1,4-Dichlorobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	1,4-Dioxane (p-dioxane)	1.5 U	1.5 U	1.5 U	1.5 U	1 5 U
SW8270	1,4-Naphthoquinone	1.9 U	1.9 U	1.9 U	1 9 U	1 9 U
SW8270	1-Naphthylamine	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8270	2,2'-Oxybis(1-chloro)propane	0.38 U	0 38 U	0 38 U	0.38 U	0.37 U
SW8270	2,3,4,6-Tetrachlorophenol	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	2,4,5-Trichlorophenol	1.9 U	1.9 R	1.9 R	1.9 R	1.9 R
SW8270	2,4,6-Trichlorophenol	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	2,4-Dichlorophenol	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	2,4-Dimethylphenol	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	2,4-Dinitrophenol	1 9 U	1 9 U	1.9 U	1.9 U	1.9 U
SW8270	2,4-Dinitrotoluene	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	2,6-Dichlorophenol	0.77 U	0 76 U	0.75 U	0.77 U	0 74 U
SW8270	2,6-Dinitrotoluene	0.38 U	0 38 U	0.38 U	0.38 U	0.37 U
SW8270	2-Acetylaminofluorene	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	2-Aminonaphthalene (beta-naphthylamine)	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	2-Chloronaphthalene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	2-Chlorophenol	0.38 U	0.38 U	0 38 U	0 38 U	0 37 U
SW8270	2-Methylnaphthalene	0.38 U	0 38 U	0 38 U	0.38 U	0.37 U
SW8270	2-Nitroaniline	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	2-Nitrophenol	0.38 U	0.38 U	0 38 U	0.38 U	0 37 U
SW8270	2-Picoline (alpha-picoline)	0.38 U	0.38 U	0 38 U	0.38 U	0.37 U
SW8270	3,3'-Dichlorobenzidine	0.77 U	0.76 U	0.75 U	0.77 U	0 74 U
SW8270	3,3'-Dimethylbenzidine	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	3-Methylcholanthrene	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	3-Nitroaniline	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	4,6-Dinitro-2-methylphenol	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	4-Aminobiphenyl (4-biphenylamine)	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	4-Bromophenyl phenyl ether	0.38 U	0.38 U	0.38 U	0 38 U	0 37 U
SW8270	4-Chloro-3-methylphenol	0.77 U	0.76 U	0 75 U	0.77 U	0.74 U
SW8270	4-Chloroaniline	0.77 U	0.76 U	0.75 U	0 77 U	0 74 U
SW8270	4-Chlorophenyl phenyl ether	0.38 U	0 38 U	0 38 U	0.38 U	0.37 U
SW8270	4-Nitroaniline	1 9 U	1 9 U	1.9 U	1.9 U	1.9 U
SW8270	4-Nitrophenol	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	4-Nitroquinoline-N-oxide	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8270	5-Nitro-o-toluidine	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	7,12-Dimethylbenzo(a)anthracene	0.77 U	0 76 U	0.75 U	0.77 U	0.74 U
SW8270	Acenaphthene	0.3 F	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Acenaphthylene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Acetophenone	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	alpha, alpha-Dimethylphenethylamine	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
SW8270	Aniline (phenylamine, aminobenzene)	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Anthracene	0.57	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Aramite (total)	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	Benzo(a)anthracene	1.5	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Benzo(a)pyrene	1.3	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Benzo(b)fluoranthene	1.8	0.38 U	0 38 U	0.38 U	0 37 U
SW8270	Benzo(g,h,i)perylene	0.58	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Benzo(k)fluoranthene	0.89	0.38 U	0.38 U	0 38 U	0 37 U
SW8270	Benzoic acid	1.9 U	1.9 U	1 9 U	1.9 U	1.9 U
SW8270	Benzyl alcohol	0.38 R	0.38 R	0.38 R	0.38 R	0 37 R
SW8270	Benzyl butyl phthalate	0.38 U	0.38 U	0 38 U	0.38 U	0.37 U
SW8270	bis(2-Chloroethoxy)methane	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	bis(2-Chloroethyl)ether (2-chloroethyl ether)	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	bis(2-Ethylhexyl)phthalate	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Chlorobenzilate	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Chrysene	1.6	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Diallate (total of cis and trans isomers)	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Dibenz(a,h)anthracene	0.16 F	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Dibenzofuran	0.18 F	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Diethyl phthalate	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Dimethyl phthalate	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Di-n-butyl phthalate	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Di-n-octyl phthalate	0.38 U	0.38 U	0.38 U	0 38 U	0 37 U
SW8270	Dinoseb	0.77 U	0.76 U	0.75 U	0.77 U	0 74 U
SW8270	Diphenylamine	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8270	Ethyl methanesulfonate	0.77 U	0 76 U	0.75 U	0 77 U	0 74 U
SW8270	Fluoranthene	3.5	0.38 U	0.04 F	0 38 U	0.37 U
SW8270	Fluorene	0.31 F	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Hexachlorobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Hexachlorobutadiene	0.38 U	0.38 U	0 38 U	0.38 U	0.37 U
SW8270	Hexachlorocyclopentadiene	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.37 UJ
SW8270	Hexachloroethane	0 38 U	0.38 U	0 38 U	0.38 U	0 37 U
SW8270	Hexachlorophene	5.8 U	5 7 U	5 6 U	5.8 U	5 6 U
SW8270	Hexachloropropene	1.9 U	1.9 U	1.9 U	1.9 U	1 9 U
SW8270	Indeno(1,2,3-c,d)pyrene	0.77	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Isophorone	0.38 U	0.38 U	0 38 U	0.38 U	0 37 U
SW8270	Isosafrole	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	m- & p-Cresol (sum of isomers)	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Methapyrilene	0.96 U	0.95 U	0.94 U	0.96 U	0.93 U
SW8270	Methyl methanesulfonate	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Naphthalene	0.041 F	0 38 U	0.38 U	0.38 U	0.37 U
SW8270	Nitrobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Nitrosomethylethylamine	0 38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	N-Nitrosodiethylamine	0.77 U	0 76 U	0.75 U	0.77 U	0 74 U
SW8270	N-Nitrosodimethylamine	0.77 U	0 76 U	0.75 U	0.77 U	0.74 U
SW8270	N-Nitrosodi-n-butylamine	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	N-Nitrosodi-n-propylamine	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	N-Nitrosodiphenylamine	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	N-Nitrosomorpholine	0.77 U	0 76 U	0.75 U	0.77 U	0 74 U
SW8270	N-Nitrosopiperidine	0.38 U	0.38 U	0 38 U	0 38 U	0.37 U
SW8270	N-Nitrosopyrrolidine	0.77 U	0.76 U	0.75 U	0.77 U	0 74 U
SW8270	o-Cresol (2-methylphenol)	0.38 U	0.38 U	0 38 U	0.38 U	0 37 U
SW8270	o-Toluidine	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	p-Dimethylaminoazobenzene	0.77 U	0 76 U	0.75 U	0 77 U	0.74 U
SW8270	Pentachlorobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Pentachloronitrobenzene	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U

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Table C.7
Analytical Data-Soil
AOC 15
NAS Fort Worth JRB, Texas

Method	Analyte (mg/kg)	BHGLAOC01501-00'	BHGLAOC01501-05'	BHGLAOC01501-10'	BHGLAOC01501-15'	BHGLAOC01501-20'
SW8270	Pentachlorophenol	1.9 U	1.9 U	1.9 U	1.9 U	1 9 U
SW8270	Phenacetin	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Phenanthrene	3.2	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	Phenol	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8270	p-Phenylenediamine	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
SW8270	Pronamide	0.38 U	0 38 U	0.38 U	0.38 U	0.37 U
SW8270	Pyrene	4.4	0.38 U	0.38 U	0.38 U	0 37 U
SW8270	Pyridine	0.77 U	0.76 U	0.75 U	0.77 U	0.74 U
SW8270	Safrole	0.38 U	0.38 U	0.38 U	0.38 U	0.37 U
SW8280	2,3,7,8-Tetrachlorodibenzofuran	0 00003 U	0.00004 U	0.00003 U	0.00004 U	0.00002 U
SW8280	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00004 U	0.00004 U	0.00005 U	0 00008 U	0.00005 U
SW9010	Cyanide	10 U	10 U	10 U	10 U	10 U
SW9030	Sulfide	115	75.6	108	85.8	107

Data Qualifiers:

J = This analyte was positively identified, but the quantitation is an estimation.

U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.

F = The analyte was positively identified, but the associated numerical value is below the MQL.

R = The data are unusable due to deficiences in the ability to analyze the sample and meet QC criteria.

UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

S = Screeening data.

641 302

Table C.8
SPLP Analytical Data
SWMUs 16, 33, 39, and 42
NAS Fort Worth JRB, Texas

Method	Analyte (mg/L)	BHGLSWMU1601-00'	BHGLSWMU33001-00'	BHGLSWMU33002-00'	BHGLSWMU39001-00'	BHGLSWMU42004-00'
SW6010	Beryllium					0.004
SW7421	Lead	0.0017 F		0.01 U	0 0397	
SW7041	Antimony		0.005 UJ			
SW7191	Chromium (total)			0.0018 F		

Data Qualifiers:
U = The analyte was analyzed for, but not detected, the associated numerical value is at or below the MQL.
F = The analyte was positively identified, but the associated numerical value is below the MQL
UJ = The analyte was analyzed for but not detected, the associated value is a MQL which is estimated due to deficiencies in the QC criteria.

641 303

641 304

TAB

Appendix D

APPENDIX D

BORING LOGS

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16001

Project: NAS FW WAA Investigation

Date: 05/20/99

Client. AFCEE

Geologist: P Daruwala

Location. SWMU 16

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1 2 3		***Sand and Gravel Fill*** Sand and gravel fill, at 2' 10YR 6/3 fine sand w/some silt, hard, slight to non-plastic	-3	GP	100%	Dry	0 0	
4 5		***Silt*** 10YR 5/3 silt, med stiff, slight plasticity	-5	ML	60%	Dry	0 0	
6 7		***Clayey Silt*** 10YR 5/3 brown clayey silt, slight plasticity, med stiff, 5% gravel	-7	ML	60%	Dry	0 0	
8 9 10		***Clayey Silt*** Same as above, soft, wood piece in the bottom	-10	ML	10%	Dry	0 0	
11 12		***Landfill and Clayey Silt*** Wood and paper debris w/some clayey silt as above	-12	ML	5%	Damp	0 0	Wood and paper debris
13 14		***Clayey Silt*** 10YR 5/2 grayish brown clayey silt, slight plasticity, med stiff	-14	ML	80%	Damp	1 0	Solvent odor
15 16		***Silty Clay with Gravel and Sand*** 10YR 5/3 brown silty clay, mottled gray and brown w/10% gravel, at 16' 10YR 6/2 lt brownish gray silty clay w/fine sand (20%) and gravel (25%)		CL				

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

641 307

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: *BHGLSWMU16001*

Project: NAS FW WAA Investigation

Date: 05/20/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 16

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17			-17		100%	Damp	0 0	
18		***Silty Clay with Sand and Gravel*** 10YR 6/3 pale brown silty clay w/black staining and solvent type odor, around 18' 10YR 6/2 lt brownish gray fine silty sand, soft non-plastic		CLSM	100%	Damp	0 0	Solvent-type odor
19			-19					
20		***Sandy Silt with Sand and Gravel*** 10YR 7/1 lt gray sandy silt w/black staining and wood pieces at the top, 10-15% gravel, grading to 6" fine sand and gravel (50%), damp		MLSP	100%	Damp	0 0	
21			-21					Hit water at 21'
22		***Sand and gravel*** Sand and gravel as above, saturated, lt brown sand at the bottom		SP		Wet		
23			-23					
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16002

Project: NAS FW WAA Investigation

Date 05/20/99

Client: AFCEE

Geologist: P Daruwala

Location. SWMU 16

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sand and Gravel Fill*** Sand, silt, and gravel fill, 10YR 3/3 dk brown, stiff, non-plastic	-2	GP	100%	Dry	0 0	Sampled
3		***Clayey Silt*** 10YR 3/2 v dk grayish brown clayey silt, non-plastic med stiff, at 3' 10YR 3/1 v dk gray clayey silt, med stiff, slight plasticity	-4	ML	100%	Dry	0 0	
5		***Clayey and Sandy Silt*** Same as above, only 10YR 3/2 v dk grayish brown, around 5' 10YR 4/3 brown sandy silt, non-plastic, stiff	-6	ML	90%	Dry	0 0	
7		***Sandy Silt with Gravel*** Top 2" sand and gravel layer, 10YR 5/6 yellowish brown sandy silt w/5% gravel, v stiff, non-plastic	-8	ML	100%	Dry	0 0	
9 10		***Clayey Silt*** 10YR 5/6 yellowish brown clayey silt w/3% gravel, v stiff, slight plasticity	-11	ML	100%	Dry	0 0	Sampled
12		***Sandy Clay*** 10YR 5/4 yellowish brown sandy clay mottled w/gray and black	-13	CL	100%	Dry	0 0	
14		***Sandy Clay*** Same as above	-14 5	CL	100%	Dry	0 0	
15 16		***Sand Clay with Gravel*** 10YR 7/2 lt gray sandy clay, low plasticity, soft, 30-40% angular gravel towards 16'	-16	CL	100%	Dry	0 0	

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

Sheet 1 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16002

Project: NAS FW WAA Investigation

Date: 05/20/99

Client: AFCEE

Geologist: P Daruwala

Location. SWMU 16

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sandy Clay with Gravel*** 10YR 6/2 lt brownish gray sandy clay w/20-30% gravel, soft, non-plastic		CL	100%	Damp	0 0	
18			-18					
19		***Clayey Silt with Gravel*** 10YR 6/2 lt brownish gray clayey silt w/20-25% gravel, soft, low plasticity		ML	100%	Damp	0 0	
20			-20					Sampled
21		***Clayey Silt with Gravel*** Same as above, saturated		ML	100%	Wet	0 0	Hit water at 21'
22			-22					
23		***Sand and Gravel*** 7 5YR 5/4 brown coarse sand (40%) and gravel (60%), refusal at 23'	-23	SP				
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Project: NAS FW WAA Investigation

Client: AFCEE

Location. SWMU 16

Borehole ID. BHGLSWMU16003

Date: 05/21/99

Geologist. P Daruwala

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sand, Silt, and Clay*** Top ft fine sand, silt, and clay fill w/10-15% 10YR 4/2 dk grayish brown clayey silt, soft low plasticity	584 02	ML	100%	Dry	0 0	
2								
3		***Clayey Silt*** Same as above, 4"sand and gravel lense, 10YR 3/1 v dk gray clayey silt, low plasticity, med stiff, uniform, <5% gravel, color change only at 3' to 10YR 4/2 dk grayish brown	582 02	ML	100%	Dry	0 0	
4								
5		***Silty Sand*** Same as above at 5' 10YR 5/6 yellowish brown silty fine sand w/<5% gravel	580 02	SM	100%	Dry	0 0	
7		***No Recovery***	578 02		0%		NA	
8								
9		***Silty Sand with Gravel*** Top 4" white gravel, 10YR 5/6 yellowish brown silty sand w/<5% gravel and white powder (solution features)	576 02	SM	100%	Dry	0 0	
10								
11		***Sandy Silt*** 10YR 5/6 yellowish brown sandy silt, non-plastic, med stiff, uniform	574 02	ML	100%	Dry	0 0	
12								
13		***Sandy Silt with Sand and Gravel*** Same as above w/increasing fine sand and gravel (25%) from 13-14'	572 02	ML	100%	Dry	0 0	
14								
15		***Sandy Silt with Sand and Gravel*** Same as above, gray gravel lense at 15', then 10YR 6/2 lt grayish brown sandy silt w/15% gravel	570 02	ML	100%	Dry	0 0	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 1 of 2

641 311

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16003

Project: NAS FW WAA Investigation

Date: 05/21/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 16

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sandy Silt with Sand and Gravel*** Same as above, bottom 6" 10YR 5/8 strong brown coarse sand and gravel		MLSP	100%	Damp	0 0	
18			568 02					Hit water at 18'
19		***Sand and Gravel*** Coarse sand and gravel, saturated		SP	20%	Wet	0 0	
20			566 02					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16004

Project: NAS FW WAA Investigation

Date: 05/21/99

Client: AFCEE

Geologist: P Daruwala

Location. SWMU 16

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Topsoil and Clayey Silt*** Topsoil, bottom ft 10YR 5/3 brown clayey silt w/5-10% gravel	-2	ML	100%	Dry	0 0	
3		***Sand and Clayey Silt*** 7 5YR 5/3 brown fine sand, well sorted, at 3' 10YR 4/2 brown clayey silt, slight plasticity, soft	-4	ML	100%	Dry	0 0	
5		***Sandy Silt*** 10YR 4/3 dk grayish brown sandy silt, low plasticity, soft	-6	ML	80%	Dry	0 0	
7		***Landfill*** Landfill debris (cardboard, wood paper, aluminum foil) in a clay, sand, and silt mix, moist	-8	ML	40%	Moist	0 0	
9		***No Recovery***	-10		0%		NA	
11		***Clayey and Sandy Silt*** Clayey silt, soft, slight plasticity, some black staining, damp, 10YR 6/3 pale brown sandy silt w/5% gravel, dry	-12	ML	100%	Damp Dry	0 0	
13		***Landfill*** Wood pieces (4"x1"x1/2"), same as above only 10YR 7/2 lt gray, pieces of lead type foil, 10YR 7/1 lt gray silt and clay, med stiff, low plasticity, w/10% gravel	-14	ML	100%	Dry	0 0	
15		***Sand and Gravel*** 10YR 7/1 lt gray coarse sand and gravel (40%), bottom 6" same as above w/50-60% gravel	-16	SP	100%	Dry	0 0	

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 1 of 2

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HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU16004

Project: NAS FW WAA Investigation

Date: 05/21/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 16

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand and Gravel with Silt*** 10YR 7/4 dk yellowish brown med-coarse sand and gravel (40%) w/some silt, saturated sand and gravel towards the bottom		SP	60%	Damp	0 0	
18			-18					
19		***Sand and Gravel*** Same as above		SP	100%	Wet	0 0	Hit water at 18 7'
20			-20					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No AFC001-15BBC

Borehole ID: BHGLSWMU33001

Project: NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 33

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Silty Sand*** Top ft asphalt sand, and gravel, 10YR 3/2 v dk grayish brown silty sand non-plastic stiff	606 95	SM	50%	Dry	8 5	
2								
3		***Silty and Clayey Sand*** Top ft same as above, around 3' 2 5Y 5/4 lt olive brown sandy clay, stiff slightly plastic, bottom 6" 7 5YR 4/6 fine silty sand stiff, non-plastic, uniform color/texture	604 95	SM	100%	Moist	6 4	
4								
5		***Sand and Sandy Clay*** Top ft same as above, around 5' 2 5Y 5/3 lt olive brown sandy clay, stiff, slightly plastic, marbled w/7 5YR 4/6 strong brown fine sand (50%)	602 95	SM	100%	Dry	8 3	
6								
7		***Sandy Clay and Sand*** Top ft same as above, at 7 5' transition to 7 5YR 4/6 strong brown fine sand w/10% coarse sand and gravel	600 95	SM	100%	Dry	6 8	
8								
9		***Silty Sand*** 5YR 5/6 yellowish red fine silty sand, non-plastic, stiff/hard, mottled w/5YR 2 5/1 black sand	598 95	SM	100%	Dry	6 0	
10								
11		***Silty Sand*** Same as above	596 95	SM	100%	Dry	5 0	
12								
13		***Sand*** Same as above, transition to 5YR 5/8 yellowish red fine sand, uniform color/texture, soft, moist	594 95	SM	100%	Moist	1 7	
14								
15		***Sand*** Same as above, bottom 6" 7 5YR 6/6 reddish yellow fine sand, soft, uniform, moist	592 95	SW	100%	Moist	3 0	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
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(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet. 1 of 2

641 315

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU33001

Project: NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location. SWMU 33

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand*** Same as above		SW	20%	Moist	0 0	
18			590 95					
19		***Sand*** Top 6" same as above, 18 5 to 19 5' 10YR 8/3 v oale brown fine sand, soft bottom 6" 10YR 4/6 dk yellowisn brown fine sand wet, transition to 7 5YR 5/6 strong brown coarse sand and gravel		SP	100%	Wet	0 0	Hit water at 19 5'
20			588 95					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No. AFC001-15BBC

Borehole ID: BHGLSWMU33002

Project: NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 33

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Sand*** Top ft gravel and grass 7 5YR 5/6 strong brown clayey sand, stiff, slightly plastic	605 85	SM	30%	Dry	10 3	
2								
3		***Sand and Clayey Sand*** Top ft 10YR 4/4 dk yellowish brown fine sand, bottom ft 5YR 5/8 clayey sand, stiff, slightly plastic	603 85	SM	100%	Dry	13 6	
4								
5		***Clayey Sand*** Same as above	601 85	SM	80%	Dry	15 8	
6								
7		***Silty Sand*** 5YR 5/6 yellowish red fine silty sand non-plastic, stiff, hard, mottled w/5YR 2 5/1 black sand	599 85	SM	100%	Dry	4 5	
8								
9		***Silty Sand*** Same as above w/gravel and coarse sand (10%)	597 85	SM	100%	Dry	4 5	
10								
11		***Silty Sand and Sand*** Same as above, dry, around 11' 5YR 6/6 reddish yellow fine soft sand w/ mottles of 5YR 2 5/1 black sand, moist, non-plastic	595 85	SM	80%	Dry Moist	8 2	
12								
13		***Sand*** Same as above	593 85	SW	100%	Moist	2 9	
14								
15		***Sand*** Same as above, at 15' 10YR 8/3 v pale brown fine sand, soft, uniform color/texture	591 85	SW	100%	Moist	7 3	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 18'

Sheet 1 of 2

641 317

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU33002

Project. NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 33

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		*Sand* Same as above, wet at 17 5', bottom few incnes 7 5YR 5/6 strong brown coarse sand and gravel		SW/SP	100%	Wet	4 8	
18			589 85					Hit water at 17 5'
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 18'

Sheet. 2 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU33003

Project: NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 33

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Sand*** Top ft gravel and grass, 7 5YR 5/6 strong brown clayey sand, stiff, slightly plastic	605 97	SM	30%	Dry	10 0	
2								
3		***Clayey Sand*** Same as above	603 97	SM	80%	Dry	9 7	
4								
5		***Clayey Sand*** 7 5 YR 6/6 reddish yellow clayey sand, slightly plastic, stiff	601 97	SM	80%	Dry	14 1	
7		***Clayey Sand*** 5YR 5/6 yellowish red fine clayey sand *slightly plastic, stiff, mottled w/5YR 2 5/1* black sand	599 97	SM	90%	Dry	10 2	
8								
9		***Clayey Sand w/Gravel*** Same as above w/coarse sand and gravel (10%)	597 97	SP	100%	Dry	10 7	
10								
11		***Silty Sand*** 7 5YR 5/8 strong brown silty sand, stiff, slightly plastic, w/some coarse sand (3%)	595 97	SM	100%	Dry	9 4	
12								
13		***Sand*** Same as above, around 12 75' 7 5YR 6/6 reddish yellow fine sand, soft, uniform color and texture	593 97	SM	100%	Damp	13 3	
14								
15		***Sand*** Same as above, at 15 5' 10YR 7/6 yellow fine to medium sand w/5% gravel	591 97	SP	100%	Moist	2 6	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 1 of 2

641 319

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: *BHGLSWMU33003*

Project: NAS FW WAA Investigation

Date: 06/10/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 33

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)		Remarks
17		***Sand*** Same as above, bottom 6" 10YR 6/4 lt yellowish brown fine sand, uniform color and texture		SW	100%	Moist	3 4		
18			589 97						
19		***Sand*** Top ft same as above, transition at 19' to coarse sand and gravel w/some snell fragments		SW/SP	50%	Wet	1 8		Hit water at 19'
20			587 97						
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size. 2"

Total Depth Drilled 20'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU34001

Project: NAS FW WAA Investigation

Date: 05/21/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 34

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Silty Clay*** Top 6" topsoil, 10YR 3/1 v dk gray silty clay w/5% gravel	-2	CL	100%	Moist	0 0	
2								
3		***Sand with Gravel and Silt*** Top 2" 10YR 4/4 dk yellowish brown well sorted fine sand, next 2" grading to same fine sand w/10% gravel and some silt, nex 6" coarse sand and gravel w/snells bottom 10YR 5/3 brn f sand and silt	-4	SM	100%	Dry	0 0	
4								
5		***Sandy Silt with Gravel*** 10YR 4/3 sandy silt w/25% gravel, bottom 4" cobbles	-6	ML	100%	Moist	0 0	
7		***Sandy Clay with Gravel*** 10YR 7/1 lt gray w/10YR 6/6 brownish yellow sandy clay w/ med sand lenses (1/8"), bottom 6" dry rock (some gray)	-8	CL	100%	Dry	0 0	
8								
9		***Sandy Clay*** Sandy clay as abovel 4" at top w/water, then dry, bottom 6" v dry, hard clay as above	-10	CL	100%	Wet Dry	0 0	
10								
11		***Sandy Clay*** Fine sandy clay, unconsolidated coarse sand	-11	CL	100%	Wet	0 0	Hit water at 10 5' Refusal at 11'
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 11'

Sheet 1 of 1

641 321

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU34002

Project: NAS FW WAA Investigation

Date: 05/21/99

Client AFCEE

Geologist: P Daruwala

Location: SWMU 34

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
		Concrete Concrete 8-12"	-1			Dry	0 0	
1								
2		***Silt and Gravel*** Top 6" concrete, then 10YR 2/1 black silt w/15% gravel		GM	60%	Dry	0 0	
3			-3					
4		***Silt and Clayey Sand*** Black clayey silt med stiff, slight plasticity, around 4' 10YR 4/3 brown clayey fine sand, stiff, w/15-25% gravel		ML	100%	Dry	0 0	
5			-5					
6		***Clayey Sand and Sand with Gravel*** 10YR 4/3 brown clayey sand w/15-25% gravel at 6 5' 10YR 4/4 dk yellowish brown med sand w/ gravel, poorly sorted		SC	100%	Dry	0 0	
7			-7					
8		***Sand and Gravel*** 4" same as above w/increasing 10YR 6/2 f-med sand and gravel (40-50%), towards the bottom 10YR 6/6 brownish yellow coarse sand and gravel		GP	100%	Dry	0 0	
9			-9					Hit water at 9'
10		***Sand and Gravel*** Saturated sand and gravel as above, at 10' mottled gray and brown sandy clay, v stiff	-10	GP	100%	Wet	0 0	
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method: DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 10'

Sheet 1 of 1

HYDRO GeoLogic INC.

Project No· AFC001-15BBC

Borehole ID: BHGLSWMU39001

Project: NAS FW WAA Investigation

Date: 06/09/99

Client AFCEE

Geologist. M Kidwell

Location: SWMU 39

SUBSURFACE PROFILE			SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sand*** Top 6" asphalt and gravel, 5YR 4/6 yellowish red fine sand w/10% gravel, bottom 6" 5YR 5/3 reddish brown fine sand	599 77	SM	75%	Dry	4 6	
2								
3		***Silty and Clayey Sand*** Top ft same as above around 3' 5YR 4/6 yellowish red clayey sand, slightly plastic, stiff w/10% gravel and coarse sand	597 77	SM	100%	Moist	8 8	
4								
5		***Sand*** Same as above, at 5' 5YR 5/8 yellowish red fine sand, soft	595 77	SM	100%	Moist	2 3	
6								
7		***Sand with Gravel*** Top ft same as above, at 7' 5YR 4/6 yellowish red fine sand w/50% coarse sand and gravel	593 77	SP	90%	Moist	3 4	
8								
9		***Sand and Gravel*** Top ft same as above, at 9' coarse sand and gravel (same color as above), bottom 6" 5YR 4/6 yellowish red fine sand	591 77	SP	100%	Moist	2 0	
10								Hit water at 10 2'
11		***Sand and Gravel*** Same as above, around 11' coarse sand and gravel transition to 5YR 6/8 reddish yellow fine sand, soft, uniform, wet	589 77	SP	100%	Wet	0 0	
12								
13		***Sand and Gravel*** Same as above, transition to coarse sand and gravel	587 77	SP	100%	Wet	0 0	
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 14'

Sheet 1 of 1

641 323

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU42001

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location. SWMU 42

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Silty Clay*** Top ft asphalt and gravel, 5YR 4/2 olive gray silty clay, slightly plastic, stiff	604 01	CL	50%	Dry	14 9	Sample collected at 0-2'
2								
3		***Clayey Silt with Sand*** Top 10" same as above, transition to 10YR 5/3 brown clayey silt, stiff slightly plastic, mottled w/10YR 2/1 black sand and 5% coarse sand	602 01	CL/ML	80%	Dry	10 6	
4								
5		***Clayey Silt with Gravel*** Same as above w/25% coarse sand and gravel	600 01	ML	80%	Dry	15 7	Sample collected at 5-6'
6								
7		***Sandy Clay with Gravel*** 10YR 6/4 lt yellowish brown sandy clay w/ 40% gravel, stiff, slightly plastic	598 01	CL	90%	Dry	14 6	
8								
9		***Sandy Clay*** Top ft same as above, 10YR 6/4 lt yellowish brown sandy clay, stiff, slightly plastic, marpled w/10YR 6/6 brownisn yellow sand and mottled w/10YR 2/2 v dk brown sand	596 01	CL	100%	Dry	15 7	
10								
11		***Clayey Sand*** Same as above, bottom 10" 10YR 5/8 yellowish brown clayey sand, stiff, non-plastic	594 01	CL/ML	100%	Dry	18 9	Sample collected at 10-12'
12								
13		***Clayey and Silty Sand*** Same as above, at 13 2' 10YR 7/6 yellow silty sand, non-plastic, stiff, marbled w/10YR 8/1 white clayey sand (40%)	592 01	ML	100%	Dry	14 0	
14								
15		***Silty and Clayey Sand*** Same as above, transition to 10YR 7/8 fine silty sand w/lenses of 10YR 8/1 clayey sand, soft, moist	590 01	ML	100%	Dry Moist	14 0	Sample collected at 15-16'
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU42001

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand with Gravel*** Same as above w/coarse sand and gravel (25%), bottom ft coarse sand, gravel, and shells, wet		ML/GM	100%	Moist Wet	19 5	Hit water at 17 5'
18			588 01					
19		***Sand and Gravel*** Same as above		GM	100%	Wet	34 5	
20			586 01					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

641 325

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Project. NAS FW WAA Investigation

Client: AFCEE

Location: SWMU 42

Borehole ID: BHGLSWMU42002

Date· 06/11/99

Geologist: M Kidwell

SUBSURFACE PROFILE				SAMPLE			
Depth	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1–2	***Silty Clay*** Concrete and gravel, at 1 2' 5YR 4/2 olive gray silty clay, slightly plastic stiff	604 82	GP/CL	30%	Dry	21 9	Sample collected at 0-2'
3–4	***Clayey Silt with Sand*** Same as above, transition to 10YR 5/3 brown clayey silt, stiff, slightly plastic, mottled w/10YR 2/2 v dk brown sand	602 82	CL/ML	100%	Dry	19 5	
5–6	***Clayey Silt with Gravel*** Same as above, mixed w/25% coarse sand and gravel around 5'	600 82	ML	100%	Dry	18 6	Sample collected at 5-6'
7–8	***Sandy Clay with Gravel*** 10YR 6/4 lt yellowish brown sandy clay w/ 10YR 8/1 white sand and gravel (25%)	598 82	CL	100%	Dry	20 2	
9–10	***Silty Sand with Gravel*** 10YR 7/4 v pale brown silty sand, non-plastic, stiff, marbled w/10YR 8/1 white sand and gravel (40%)	596 82	SP	100%	Dry	19 6	
11–12	***Silty Sand with Gravel*** Same as above	594 82	SP	100%	Dry	26 9	Sample collected at 10-12'
13–14	***Silty Sand with Gravel*** Same as above, at 13 2' 10YR 5/8 yellowish brown fine silty sand, soft, slightly plastic, uniform color and texture	592 82	SP/SM	100%	Dry	28 2	
15–16	***Silty Sand*** Same as above, transition to 10YR 5/8 yellowish brown fine sand, soft, non-plastic, uniform color/texture	590 82	SM	100%	Moist	32 5	Sample collected at 15-16'

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 1 of 2

HYDRO GeoLogic INC

Project No. AFC001-15BBC

Borehole ID: BHGLSWMU42002

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand and Gravel*** Top ft same as above, bottom ft 10YR 5/8 yellowish brown coarse sand and gravel w/fine sand		SM/GP	100%	Moist	16 4	
18			588 82					Hit water at 18'
19		***Sand and Gravel*** Same as above with shell fragments		GP	100%	Wet	19 1	
20			586 82					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

641 327

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU42003

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE				SAMPLE			
Depth	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1 – 2	***Silty Clay*** Top ft gravel and asphalt, bottom ft 10YR 2/2 v dk brown silty clay, medium plasticity, stiff	604 91	GM/CL	50%	Moist	23 1	Sample collected at 0-2'
3 – 4	***Sandy Clay*** Same as above transition to 10YR 4/3 fine sandy clay, stiff, medium plasticity, uniform color, and 5% gravel	602 91	CL	100%	Dry	23 6	
5 – 6	***Clayey Sand*** Top ft 10YR 7/3 v pale brown fine fill sand, at 5' 10YR 3/3 dk brown clayey sand, stiff slightly plastic, w/mottles of 10YR 2/1 black sand	600 91	SM	100%	Moist	20 8	Sample collected at 5-7'
7 – 8	***Clayey Sand with Gravel*** Same as above w/ coarse sand and gravel (20%)	598 91	SM	100%	Dry	11 4	
9 – 10	***Clayey Sand*** Same as above, around 8 75' transition to 10YR 5/4 yellowish brown clayey sand w/mottles of 10YR 2/1 black and 10YR 8/1 white sand and mixed w/5% coarse sand	596 91	SM	100%	Dry	19 4	
11 – 12	***Clayey Sand with Gravel*** Same as above, around 11' 10YR 6/4 lt yellowish brown clayey sand w/10YR 8/1 white sand and gravel (20%)	594 91	SM/SP	100%	Dry	24 6	Sample collected at 10-12'
13 – 14	***Clayey Sand with Gravel*** Same as above	592 91	SP	100%	Dry	24 1	
15 – 16	***Sand*** Same as above, at 15' transition to 10YR 5/6 yellowish brown fine sand, soft, uniform color/texture	590 91	SP	100%	Dry	20 9	Sample collected at 15-16'

Drilled By: TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU42003

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand and Gravel*** Top ft same as above, bottom ft 10YR 4/6 dk yellowish brown fine, med, and coarse sand and gravel		SP/GC	100%	Dry	23 0	
18			588 91					
19		***Sand and Gravel*** Same as above with shell fragments, wet		GC	100%	Wet	14 7	Hit water at 19'
20			586 91					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

641 329

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU42004

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist. M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1–2		***Sandy Silt*** Top ft gravel and asphalt, bottom ft 10YR 3/2 v dk grayish brown sandy silt, stiff, non-plastic	604 91	GP/ML	60%	Dry	20 2	Sample collected at 0-2'
3–4		***Silty Sand*** 10YR 5/4 yellowish brown silty sand non-plastic, stiff mixed w/20% gravel and coarse sand	602 91	SM	100%	Dry	22 1	
5–6		***Sandy Clay*** 10YR 5/4 yellowish brown sandy clay, v stiff, med plasticity, w/coarse sand and gravel (10%) and mottled w/10YR 2/1 black sand	600 91	CL	100%	Dry	16 5	
7–8		***Sandy Clay*** Same as above	598 91	SM	20%	Dry	21 0	
9–10		***Clayey Sand*** Same as above, around 8 75' transition to 10YR 6/4 lt yellowish brown clayey sand w/lenses of 10YR 8/1 white sand and gravel, stiff, non-plastic	596 91	SM	100%	Dry	21 2	
11–12		***Clayey Sand with Gravel*** Same as above, around 10 75' 10YR 6/4 lt yellowish brown clayey sand w/10YR 8/1 white sand and gravel (45%) and 10YR 7/8 yellow fine sand	594 91	SM/SP	100%	Dry	23 1	Sample collected at 10-12'
13–14		***No Recovery***	592 91		0%			
15–16		***Clayey Sand*** 10YR 6/6 brownish yellow clayey sand mottled w/10YR 8/1 white sand and gravel, stiff, non-plastic	590 91	SM	100%	Dry	22 6	Sample collected at 15-16'

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet. 1 of 2

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: ***BHGLSWMU42004***

Project: NAS FW WAA Investigation

Date: 06/11/99

Client: AFCEE

Geologist: M Kidwell

Location: SWMU 42

SUBSURFACE PROFILE			SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sand and Gravel*** 10YR 6/8 brownish yellow fine sand w/10YR 8/1 white sand and gravel (20%), transition to 10YR 6/8 brownish yellow coarse sand gravel, and cobbles		SP/GM	100%	Moist	0 0	
18			588 91					
19		***Sand and Gravel*** Same as above with shell fragments, wet		GM	100%	Wet	0 0	Hit water at 19'
20			586 91					
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 20'

Sheet 2 of 2

641 331

HYDRO GeoLogic INC

Project No: AFC001-15B8C

Borehole ID: BHGLSWMU51001

Project: NAS FW WAA Investigation

Date: 05/25/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sandy Silt and Gravel*** 10YR 4/3 brown sandy silt and gravel (30%)	591 23	GM	60%	Dry	0 0	
2								
3		***Sandy Silt and Gravel*** 10YR 4/3 brown sandy silt w/ 15-20% gravel, at 3 2' 10YR 6/4 lt yellowish brown (25-30% gravel), bottom 6' 10YR 4/2 dk grayish brown silt, v stiff, slight plasticity	589 23	GM/ML	60%	Dry	0 0	
4								
5		Top 10" 10YR 4/6 dk yellowish brown fine to med sand and gravel, 10YR 6/4 lt yellowish brown sand and 10YR 3/1 v dk gray silt slight plasticity w/ increasing silt in the bottom 1', firm	587 23	SP/SM	70%	Dry	0 0	
6								
7		10YR 3/2 v dk grayish brown sandy silt w/ 10-15% gravel, at 7' 10YR 5/4 yellowish brown coarse sand and gravel (60%) w/ some saturated pockets, bottom 6" 10YR 3/2 v dk grayish brown silt w/20% gravel	585 23	SP/GM	100%	Damp	0 0	
8								Hit water at 8'
9		***Sand and Gravel*** 10YR 5/4 coarse sand and gravel w/shells 10YR 4/2 dk grayish brown fine sand w/ dk staining, fine to med clayey sand	583 23	SP	70%	Wet	0 0	
10								
11		***Sand, Gravel, and Silty Clay*** Top 6" coarse sand and gravel, remainder 10YR 7/1 lt gray and brown silty clay	581 23	CL	100%	Wet	0 0	
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 12'

Sheet 1 of 1

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51002

Project. NAS FW WAA Investigation

Date: 05/25/99

Client: AFCEE

Geologist: P Daruwala

Location SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt with Gravel*** 10YR 3/2 v dk grayish brown clayey silt w/15% gravel, stiff, low plasticity	591 53	ML	100%	Dry	0 0	
2								
3		***Silty Clay with Gravel*** 10YR 3/3 stiff silty clay w/15% gravel, at 2 8' 25-30% gravel, bottom 10" 10YR 3/2 clayey silt, stiff w/20% gravel	589 53	CL	90%	Dry	0 0	
4								
5		***Sand and Clay*** Top 10" 10YR 3/2 clayey silt stiff, low plasticity, w/20% gravel, soft fine sand and clay, bottom 10" 10YR 3/2 v dk gray brown clayey silt, low plasticity, soft wood debris and petro odor	587 53	CL	100%	Dry	4 0	Wood debris and petroleum odor
6								
7		***Sandy Silt with Gravel*** 10YR 3/2 v dk grayish brown sandy silt w/25% gravel, petroleum odor, Bottom few inches coarse sand and gravel, wet	585 53	ML	100%	Moist Wet	57	Petroleum odor
8								
9		***Sand and Gravel*** Coarse sand and gravel w/shells, wet, 1" black stained fine sand and silt 10YR 7/4 v pale brown fine sand then v stiff silty clay, med plasticity	583 53	SP	60%	Wet	30 9	
10								
11		***Sand, Gravel, and Clay*** Top 1' coarse sand and gravel, bottom 1' 10YR 5/4 yellowish brown clay, v stiff, high plasticity	581 53	CL	100%	Wet Dry	1 7	
12								
13		***Sand and Gravel and Clay*** Coarse sand and gravel, bottom 6" 10YR 5/4 yellow brown and gray clay, dry, v stiff, high plasticity	579 53	SP/CL	100%	Wet Dry	0 0	
14								Refusal at 14'
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 14'

Sheet 1 of 1

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51003

Project: NAS FW WAA Investigation

Date: 05/26/99

Client: AFCEE

Geologist P Daruwala

Location: SWMU 51

Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt with Gravel*** *Top 6" concrete, then 6" sand and gravel* fill, bottom 1' 10YR 3/1 v dk gray clayey silt w/30% gravel, soft med-low plasticity	591 19	ML	70%	Dry	0 0	
2								
3		***Clayey Silt with Gravel*** 10YR 4/2 dk grayish brown clayey silt w/25% gravel, low plasticity, med stiff	589 19	ML	60%	Dry	2 6	
4								
5		***Clayey Silt with Gravel*** Same as above	587 19	ML	70%	Dry	1 9	
6								
7		***Silt*** 10YR 3/1 v dk gray silt slight plasticity, soft, <5% gravel, uniform	585 19	ML	80%	Dry	1 6	
8								
9		***Silt, Sand, and Gravel*** 10YR 3/1 silt, med stiff, slight plasticity, 3% gravel, 10% fine sand, increasing gravel (15-20%) and fine sand with depth	583 19	MLSP	100%	Dry	2 0	
10								
11		***Sand, Gravel, and Clay*** 10YR 5/2 fine sand (30%), gravel (60%), and clay (10%), bottom ft 10YR 5/6 yellowish brown coarse sand and gravel	581 19	CL	100%	Dry	6 0	
12								
13		***Sand and Gravel and Clay*** 10YR 7/4 v pale brown silty clay, v stiff, high plasticity, increasing gravel (3" thick) and sand 2" fine sand layer, bottom 4" v hard, platey clay	579 19	CL	100%	Dry	8 0	
14								
15		***Clay*** Same as above	577 19	CL	100%	Dry	0 0	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 24 5'

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51003

Project: NAS FW WAA Investigation

Date: 05/26/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		*Clay* Same as above		CL	100%	Dry	0 0	
18			575 19					
19		*Clay* Same as above only less dry, very stiff		CL	100%	Dry	0 0	
20			573 19					
21		*Clay with Sand and Gravel* 10YR yellowish brown clay w/ little fine sand, med plasticity, <5% gravel, more moist but no free water		CL	100%	Dry	0 0	
22			571 19					
23		*Clay* 10YR yellowish brown clay, v stiff, med-high plasticity, bottom ft layers of brown clay and sand and 10YR 3/1 clay, bottom 6" 10YR 5/1 gray clay		CL	100%	Dry	0 0	
24			568 69					Refusal at 24 5'
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 24 5'

Sheet 2 of 2

641 335

HYDRO GeoLogic INC

Project No: AFC001-15BBC

***Borehole ID:* BHGLSWMU51004**

Project: NAS FW WAA Investigation

Date: 05/26/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clay and Silt*** Top 6" concrete, then 6" sand and gravel fill, bottom 1' 10YR 3/1 v dk gray clay and silt w/5% gravel, stiff, low plasticity	591 34	ML	90%	Dry	0 0	
2								
3		***Clayey Silt*** 10YR 3/2 v dk grayish brown clayey silt low plasticity, med stiff	589 34	ML	100%	Dry	0 0	
4								
5		***Clayey Silt, Sand, and Gravel*** Same as above to 4 5' then 10YR 4/3 brown fine to med sand w/40% silt, soft, non-plastic, 10% gravel, bottom 6" fine sandy silt, soft	587 34	SP	100%	Dry	0 0	
6								
7		***Sandy Silt*** 10YR 3/1 v dk gray sandy silt, non-plastic med stiff	585 34	ML	100%	Dry	1 0	
8								
9		***Silt with Sand*** 10YR 4/1 dk gray silt w/ some sand and <5% gravel, v stiff, non-plastic, uniform	583 34	ML	100%	Dry	1 1	
10								
11		***Sandy Silt with Gravel*** Same sandy silt as above w/5-10% gravel, med stiff, non-plastic	581 34	ML	100%	Dry	0 0	
12								
13		***Sandy Silt with Gravel*** 10YR 4/2 dk grayish brown sandy silt w/med sand (10%) and some fine gravel lenses, v stiff, coarse gravel lenses in bottom 6" and marbeling solution features in cracks	579 34	ML	100%	Dry	1 4	
14								
15		***Sandy Silt with Gravel*** 10YR 4/2 dk grayish brown sandy silt, increasing fine sand, 30% gravel, shell fragments, stiff, non-plastic	577 34	ML	100%	Dry	0 0	
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 24 2'

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51004

Project: NAS FW WAA Investigation

Date: 05/26/99

Client: AFCEE

Geologist. P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE			SAMPLE					
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Silt, Clay, and Gravel*** 10YR 4/6 dk yellowish brown silt and clay, 40% coarse gravel, v stiff, low plasticity, bottom 6" 10YR 6/8 brownish yellow fine sand w/silt and clay		SP	100%	Dry	0 0	
18			575 34					
19		***Sand, Silt, Clay, and Gravel*** Top ft 10YR 5/4 yellowish brown sandy clay w/coarse gravel (>50%), 4" 10YR 6/4 lt yellowish brown sand lense bottom 6" sandy clay w/fine gravel (50%), v stiff, dry		CL	100%	Dry	0 0	
20			573 34					
21		***Clay*** Top 6" same as above, next 6" 10YR 5/4 and 6/1 gray v dry clay, bottom ft slightly more damp 10YR 5/3 brown clay w/<5% gravel		CL	100%	Dry	0 0	
22			571 34					
23		***Clay*** Same as above		CL	100%	Dry	0 0	
24			569 14					Refusal at 24 2'
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 24 2'

Sheet 2 of 2

641 337

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51005

Project: NAS FW WAA Investigation

Date: 05/27/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** 10YR 4/2 dk grayish brown clayey silt w/ little sand and gravel, soft, low plasticity, gravel in bottom	590 62	ML	80%	Dry	0 0	
2								
3		***Clayey Silt with Sand and Gravel*** Same as clayey silt above w/sand and gravel lenses (<1/4"), bottom ft 10YR 4/3 fine sand w/silt and gravel (20%), 3" clayey silt w/<5% gravel	588 62	ML	100%	Dry	0 0	
4								
5		***Sand*** 10YR 5/6 yellowish brown medium sand, well sorted, wet	586 62	SW	80%	Wet	0 0	Hit water at 5'
6								
7		***Sand and Gravel*** Saturated coarse sand and gravel w/ shells 4" petroleum staining	584 62	SP	100%	Wet	0 0	Petroleum staining
8								
9		***Sand, Gravel, and Clay*** Coarse sand and gravel as above, petroleum staining at 9', bottom 6" clay	582 62	SP/CL	100%	Wet	282	Petroleum staining
10								Refusal at 10'
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 10'

Sheet 1 of 1

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51006

Project NAS FW WAA Investigation

Date: 05/27/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** 10YR 4/2 dk grayish brown clayey silt w/ little sand and gravel, soft, low plasticity, 60% gravel and 20% sand		ML	80%	Dry	0 0	
2			589 7					
3		***Sand and Gravel with Silt*** 10YR 6/4 lt yellowish brown fine sand and 25% gravel w/ little silt		SP	40%	Dry	0 0	
4			587 7					
5		***Sand and Gravel*** Fine sand w/shell fragments, coarse gravel (80%) in bottom 4"		SP	100%	Wet	0 0	
6			585 7					Hit water at 6'
7		***Sand and Gravel*** Same as above, 7 to 7 5' very coarse sand and gravel, bottom 6" 10YR 6/2 lt brownish gray silty clay, very hard		SP/CL	100%	Wet	5 1	
8			583 7					Refusal at 8'
9								
10								
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 8'

Sheet 1 of 1

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HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51007

Project: NAS FW WAA Investigation

Date. 05/27/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sandy Silt and Gravel*** 10YR 3/2 v dk grayish brown sandy silt and gravel (25%)		GM	100%	Dry	0 0	
2			589 42					
3		***Sand and Gravel with Silt*** 10YR 5/4 fine sand w/some silt and 20% gravel Bottom 10" 10YR 4/6 fine well sorted sand		SP	60%	Dry	0 0	
4			587 42					
5		***Sand and Gravel*** 10YR 5/4 med-coarse sand and 10% gravel, wet, shell fragments, bottom 6" 10YR 6/4 lt yellowish brown same as above w/ 20% gravel		SP	100%	Wet	0 0	Hit water at 5'
6			585 42					
7		***Sand and Gravel*** 10YR 6/2 lt brownish gray same as above, coarsening with depth, coboles <50%, clay in the bottom		SP/CL	100%	Wet	0 0	
8			583 42					Refusal at 8
9								
10								
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 8'

Sheet 1 of 1

HYDRO GeoLogic INC

Project No: AFC001-15BBC

Borehole ID: BHGLSWMU51008

Project: NAS FW WAA Investigation

Date: 06/01/99

Client: AFCEE

Geologist: P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** 10YR 3/2 v dk grayish brown clayey silt, med stiff, slight plasticity		ML	100%	Dry	0 0	
2			-2					
3		***Sand and Gravel with Silt*** Top ft same as above increasing sand and gravel pockets, bottom 6" 10YR 3/2 v dk grayish brown clayey silt w/ 20% coarse gravel		MLSP	100%	Dry	0 0	
4			-4					
5		***Silt with Clay, Sand, and Gravel*** Top ft same as above, then 10YR 3/1 v dk gray sandy (fine to med) silt, non-plastic, w/ 25% gravel, petroleum odor		MLSP	100%	Dry	0 0	Petroleum odor
6			-6					
7		***Sand and Gravel*** Same as above with dark staining and odor, bottom 6" 10YR 4/1 dk gray coarse sand and gravel, wet		SP/CL	100%	Wet	0 0	Dark staining and odor Hit water at 7 5'
8			-8					
9		***Sand and Gravel/Silty Clay*** Top ft same as above, bottom ft 10YR 8/3 v pale brown silty clay, dry, v stiff, high plasticity		SP/CL	100%	Wet Dry	0 0	
10			-10					
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 10'

Sheet 1 of 1

641 341

HYDRO GeoLogic INC

Project No: AFC001-158BC

Borehole ID: *BHGLSWMU51009*

Project. NAS FW WAA Investigation

Date: 06/01/99

Client AFCEE

Geologist· P Daruwala

Location: SWMU 51

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** 10YR 3/2 v dk grayish brown clayey silt, med stiff, slight plasticity	588 32	ML	70%	Dry	0 0	
2								
3		***Silt with Sand*** 10YR 3/3 silt w/ some sand lenses, med stiff, non-plastic	586 32	ML	70%	Dry	0 0	
4								
5		***Sandy Silt with Gravel*** 10YR 3/3 dk brown sandy silt w/ 20% fine gravel soft non-plastic, bottom 6" 10YR 3/2 v dk grayish brown silt and clay, low plasticity, soft	584 32	ML	100%	Dry	0 0	
6								
7		***Clayey Silt and Sand*** 10YR 2/1 black clayey silt w/a trace of sand, bottom ft 10YR 3/4 brown fine to med sand grading to coarse gravel w/15% clay, wet	582 32	ML/SP	80%	Wet	0 0	Hit water at 7 5'
8								
9		***Sand and Silty Clay*** Med-coarse sand w/some shells, wet, bottom ft 10YR 8/3 v pale brown silty clay, dry	580 32	SP/CL	40%	Wet Dry	0 0	
10								
11								
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 10'

Sheet 1 of 1

HYDRO GeoLogic INC.

Project No: AFC001-15BBC

Borehole ID: BHGLAOC015001

Project: NAS FW WAA Investigation

Date: 05/24/99

Client: AFCEE

Geologist: P Daruwala

Location: AOC 15

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1–2		***Clayey Silt with Gravel*** 10YR 4/2 dk grayish brown clayey silt with gravel (15%)	591 26	ML	50%	Dry	0 0	
3–4		***Clayey Silt w/ Gravel*** 10YR 4/3 brown clayey silt w/5-10% gravel, v stiff, low plasticity	589 26	ML	60%	Dry	0 0	
5–6		***Silty Clay w/ Gravel*** 10YR 3/3 dk brown silty clay w/5-10% gravel, at 5' 10YR 3/4 dk yellowish brown clayey silt w/10-15% gravel, v stiff, low plasticity, bottom 4" fine sand	587 26	CL	100%	Dry	0 0	
7–8		***Sandy Silt*** 10YR 3/1 v dk gray brown fine sandy silt, non-plastic, v stiff, uniform <5% gravel	585 26	ML	100%	Dry	0 0	
9–10		***Sandy Silt*** Same as above	583 26	ML	100%	Dry	0 0	
11–12		***Sandy Silt*** 10YR 3/2 v dk grayish brown sandy silt w/10-15% gravel, non-plastic, v stiff, thin white solution features in cracks	581 26	ML	100%	Dry	0 0	
13–14		***Sandy Silt*** 10YR 3/4 dk yellowish brown fine sandy silt w/10% gravel, gravel lense from 12 2 to 12 4	579 26	ML	100%	Dry	0 0	
15–16		***Sandy Silt w/ Gravel*** 10YR 5/4 yellowish brown sandy silt w/25% gravel	577 26	ML	100%	Dry	0 0	

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

Sheet 1 of 2

641 343

HYDRO GeoLogic INC.

Project No: AFC001-15BBC

Borehole ID: BHGLAOC015001

Project: NAS FW WAA Investigation

Date: 05/24/99

Client: AFCEE

Geologist: P Daruwala

Location: AOC 15

SUBSURFACE PROFILE					SAMPLE			
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
17		***Sandy Silt w/ Gravel*** Same as above		ML	100%	Damp	0 0	
18			575 26					
19		***Clayey Silt, Sand, and Gravel*** 10YR 6/8 reddish yellow clayey silt, at 19' coarse sand and gravel/shells (60%) w/ petroleum staining and odor		ML/SP	100%	Moist	94 7	Petroleum odor and staining
20			573 26					
21		***Sand and Gravel*** Coarse sand and gravel/shells (60%), hit water at 20 5'		SP	100%	Wet	0 0	Hit water at 20 5'
22								
23			570 26					
24								
25								
26								
27								
28								
29								
30								
31								
32								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 23'

Sheet 2 of 2

HYDRO GeoLogic INC

Project No. AFC001-15BBC

Borehole ID: BHGLAOC006001

Project: NAS FW WAA Investigation

Date: 06/02/99

Client: AFCEE

Geologist: M Kidwell

Location. AOC 06

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** 10YR 3/2 v dk grayish brown clayey silt, hard, slight plasticity, very stiff in the bottom ft	569 98	ML	60%	Dry	0 0	
2								
3		***Clayey Silt w/ Sand*** 7 5YR 3/3 dk brown clayey silt hard, bottom ft transitioning to 7 5YR 4/4 brown silt w/some med and coarse sand (25%), hard	567 98	ML	75%	Dry	0 0	
4								
5		***Sandy Silt*** 7 5YR 6/2 lt brown sandy silt w/ some medium sand (15%), very stiff, non-plastic	565 98	ML	80%	Dry	0 0	
6								
7		***Silty Sand*** 7 5YR 6/6 reddish yellow silty sand non-plastic, w/some lenses of 7 5YR 6/8 bottom 6" fine sand	563 98	SM	100%	Moist	0 0	
8								
9		***Sand with Gravel*** 7 5YR 6/3 lt brown sand w/some fine gravel around 9' (25%), bottom 6" 5YR 5/4 reddish brown sand w/coarse gravel and cobbles	561 98	SP	75%	Moist Wet	0 0	
10								
11		***Sand and Gravel*** Same as above w/ small lenses of Fe-staining, transitioning to sand and gravel w/some large cobbles, wet	559 98	SP	100%	Wet	0 0	
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 12'

Sheet 1 of 1

641 345

HYDRO GeoLogic INC

Project No: AFC001-158BC

Borehole ID: BHGLAOC006002

Project: NAS FW WAA Investigation

Date. 06/02/99

Client AFCEE

Geologist: M Kidwell

Location AOC 06

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** Too ft fill material - sand and coarse gravel, bottom ft 10YR 3/2 v dk grayish brown clayey silt, very stiff	570 09	ML	60%	Dry	0 0	
2								
3		***Clayey Silt w/ Sand*** Same as above in the bottom ft transitioning to 7 5YR 4/4 brown sandy silt w/some coarse sand (5%)	568 09	ML	100%	Dry	0 0	
4								
5		***Sandy Silt*** Same as above, transitioning to 5YR 5/2 reddish gray fine sand w/some coarse sand (5%)	566 09	ML	100%	Dry	0 0	
6								
7		***Sand*** 7 5YR 6/6 reddish yellow sand w/some lenses of 7 5YR 6/8 some cobbles and gravel (5%), moist	564 09	SM	100%	Moist	0 0	
8								
9		***Sand with Gravel*** Same as above w/ 15-20% gravel, transitioning to 10YR 6/8 brownish yellow w/a trace of clay, very soft wet at the bottom	562 09	SP	100%	Moist Wet	0 0	
10								Hit water at 10'
11		***Sand and Gravel*** Same as above w/small lenses of Fe-staining, fine sand layer around 11', then transitioning to sand and gravel w/some large cobbles, wet	560 09	SP	100%	Wet	0 0	
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
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Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 12'

Sheet 1 of 1

HYDRO GeoLogic INC

Project No. AFC001-15BBC

Borehole ID: BHGLAOC006003

Project: NAS FW WAA Investigation

Date: 06/02/99

Client. AFCEE

Geologist: M Kidwell

Location: AOC 06

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Clayey Silt*** Top ft fill material - sand, gravel, and aspnalt bottom ft 10YR 3/2 v dk grayish brown clayey silt, very stiff, slight plasticity	570 05	ML	60%	Dry	0 0	
2								
3		***Clayey Silt w/ Sand*** 7 5YR 4/3 brown clayey silt very stiff slight plasticity, transitioning to sandy silt, very stiff, non-plastic	568 05	ML	100%	Dry	0 0	
4								
5		***Sandy Silt*** Same as above, transitioning to 7 5YR 6/3 lt brown fine sandy silt	566 05	ML	100%	Dry	0 0	
6								
7		***Sandy Silt*** Same as above w/ interspersed gravel (10%)	564 05	ML	80%	Moist	0 0	
8								
9		***Sand with Gravel*** 7.5YR 5/8 strong brown sand w/gravel and cobbles, with a pocket of fine sand around 9'	562 05	SP	50%	Damp	0 0	
10								Hit water at 10'
11		***Sand and Gravel*** Layers (gravel/sand/gravel/sand) of gravel and cobbles with 5YR 5/6 yellowish red fine sand (wet)	560 05	SP	70%	Wet	0 0	
12								
13								
14								
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled. 12'

Sheet 1 of 1

641 347

HYDRO GeoLogic INC

Project No. AFC001-15BBC

Borehole ID: BHGLAOC006004

Project. NAS FW WAA Investigation

Date: 06/02/99

Client: AFCEE

Geologist: M Kidwell

Location: AOC 06

SUBSURFACE PROFILE				SAMPLE				
Depth	Symbol	Description	Elevation	ASTM	Recovery	Moisture	PID (ppm)	Remarks
1		***Sandy Silt with Gravel*** Top ft fill/asphalt, bottom ft 7 5YR 4/2 brown sandy silt w/gravel (25%), soft		MLGM	45%	Dry	16 0	
2			570 75					
3		***Sandy Silt with Gravel*** 7 5YR 4/2 brown sandy silt w/40% interspersed gravel, soft		MLGM	60%	Dry	16 9	Solvent/fuel odor
4			568 75					
5		***Sandy Silt with Gravel*** Same as above w/more cobbles (40%)		MLGM	50%	Dry	21 5	Solvent/fuel odor
6			566 75					
7		***Silt, Gravel, Clay, and Sand*** 7 5YR 4/2 sandy silt w/gravel and cobbles, transitioning to 7 5YR 4/3 brown silty clay, very stiff, low plasticity, solvent/fuel odor, large cobbles and sand at the bottom		MLGM	35%	Dry	17 8	Solvent/fuel odor
8			564 75					
9		***Gravel and Sand*** Large cobbles, gravel, and sand		GP	30%	Dry Wet	3 6	Strong solvent/fuel odor
10			562 75					Hit water at 10'
11		***No Recovery*** Water in sleeve		GP	0%	Wet		No recovery
12			560 75					
13		***Sand and Gravel*** Alternating layers of 7 5YR 5/1 gray fine sand and gravel, very wet		GP	85%	Wet	51 7	Strong solvent/fuel odor
14			558 75					
15								
16								

Drilled By TEG

Drill Method DPT

Drilling Equipment Strataprobe

HydroGeoLogic, Inc.
1155 Herndon Pkwy, Suite 900
Herndon, VA 20170
(703) 478-5186 FAX (703) 471-4180

Hole Size 2"

Total Depth Drilled 14'

Sheet 1 of 1

TAB

Appendix E

APPENDIX E

DATA QUALITY ASSESSMENT

DATA QUALITY ASSESSMENT
FINAL RCRA FACILITY INVESTIGATION REPORT
SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15
NAS FORT WORTH JRB, TEXAS

1.0 FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field quality control samples were collected as described in the following sections.

1.1 AMBIENT BLANK

Ambient blanks consist of American Society for Testing and Materials (ASTM) Type II reagent grade water poured into a VOC sample vial at a sampling site (in the same vicinity as the associated samples). Ambient blanks are used to assess the potential introduction of contaminants from ambient sources (e.g., active runways, engine test cells, gasoline motors in operation) to the samples during sample collection. Ambient blanks are handled like environmental samples and transported to the laboratory for analysis. Depending on the analytes of interest at the associated site(s), ambient blanks are analyzed for VOCs, benzene, toluene, ethylbenzene, and xylenes (BTEX), and/or methane. No ambient blanks were collected in association with SWMUs 16, 33, 34, 39, 42, or AOCs 6 and 15.

1.2 EQUIPMENT BLANK

An equipment blank is a sample of ASTM Type II reagent grade water poured over the sampling device, collected in a sample container, and transported to the laboratory for analysis. Equipment blanks are used to assess the effectiveness of equipment decontamination procedures. Equipment blanks are collected immediately after equipment has been decontaminated. Each blank is analyzed for all laboratory analyses requested for the environmental samples collected at the site. One equipment blank was collected per day for each type of sampling equipment used. Seven equipment blanks were collected in association with SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15.

1.3 TRIP BLANK

A trip blank consists of a VOC sample vial filled at the laboratory with ASTM Type II reagent grade water, transported to the sampling site, handled like an environmental sample, and returned to the laboratory for analysis. Trip blanks are not opened in the field. Trip blanks are prepared only when samples are collected and analyzed for VOC analytes. Trip blanks are used to assess the potential introduction of contaminants from sample containers or during the transportation and storage procedures. One trip blank accompanied each cooler of samples sent to the laboratory for analysis of VOCs. Seven trip blanks were collected in association with SWMU 16, 33, 34, 39, 42, and AOC 6 and 15 sampling.

1.4 FIELD DUPLICATES

Duplicate sample results are used to assess precision of the sample collection process. Precision of soil samples to be analyzed for VOCs is assessed from collocated samples because the compositing process required to obtain uniform samples could result in loss of the compounds of interest.

Duplicate samples are collected simultaneously, or in immediate succession, using identical recovery techniques, and treated in an identical manner during storage, transportation, and analysis. The sample containers are assigned an identification number in the field so that they cannot be identified (blind duplicate) as duplicate samples by laboratory personnel performing the analysis. Specific locations were designated for collection of field duplicate samples prior to the beginning of sample collection. One duplicate sample was collected for every 10 field samples collected. Seven field duplicates were collected during SWMU 16, 33, 34, 39, 42, and AOC 6 and 15 RFI activities.

1.5 SAMPLE TRACKING PROTOCOL

Each sample was assigned a unique identification number that describes where and what type of sample was collected. The number that was used in the field consisted of a maximum 15 digit alphanumeric code. The alphanumeric code was truncated to 10 digits once the data was ready to be entered into the Environmental Resources Program Information Management System (ERPIMS) database. This system is explained in detail as follows:

abbbccccdd-ee

where:

- a — represents the medium (e.g., W=monitoring well, P = wipe sample, R = rinse sample, B = soil boring, U = surface water sample, or E = sediment sample).
- bbb — represents HydroGeoLogic, Inc. designation (e.g. HGL)
- cccccc — represents the SWMU/AOC number (e.g., SWMU16, SWMU42, AOC015, etc.)
- dd — represents the location identification (LOCID) (e.g., 01, 02)
- ee — represents the order that the sample was obtained within the soil boring; i.e., a surface soil sample would be 01, a 5- to 7-foot sample would be 02, etc. These two digits will dropped once the data is entered into the ERPIMS database.

For example, the first soil sample collected from soil boring 01 located at SWMU 16 was identified as "BHGLSWMU1601-01." The second sample collected from soil boring 01 located at SWMU16 was identified as "BHGLSWMU1601-02".

Duplicate samples were submitted to the laboratory blind. In order to ensure that field duplicates were analyzed "blind" by the laboratory, each field duplicate sample was assigned a unique sample identification number that did not associate the duplicate with its parent sample. For example, the soil sample collected in the second sampling interval from BHGLAOC006 was identified as DUP01. The locations from which field duplicate samples were to be collected were determined prior to mobilization. Documentation was maintained in the field sampling log book, and on the sample collection log, to track these field duplicate samples.

QC samples were identified by use of a similar system of identifiers with a maximum of 10 characters. The QC sampling number system is summarized below:

xxyyyyyy

where:

xx represents the blank type (EB for equipment blank, TB for trip blank, AB for ambient blank)

yyyyyy represents the date (month, day, year)

For example, an equipment blank obtained on May 1, 1999, would be identified as EB050199. When multiple field blanks of a particular type were collected on the same day, alphabetical suffixes (A, B, C, and so forth) were attached to the identification numbers.

The Project Geologist/Field Coordinator maintained a list detailing the connection between each QC sample and specific environmental samples. For instance, each trip blank was correlated with a particular set of samples shipped to the laboratory, and each equipment blank was correlated to those samples collected using a particular set of sampling tools on a specific date.

After the laboratory data were received and validated, data entry and QC operations were performed on the laboratory's electronic data deliverables (EDDs) to ensure that each EDD was complete, correct, and compatible with the ERPIMS format. An EDD report in the ERPIMS format will be provided to AFCEE.

2.0 LABORATORY ANALYSIS

Samples collected as part of this RFI were analyzed for a reduced list of 40 CFR Appendix IX constituents in accordance with the Basewide QAPP (HydroGeoLogic, 1998). Supplemental analyses were collected at each site in addition to the Appendix IX analyses in order to more fully characterize site specific wastes managed at each individual SWMU and AOC. Specific sampling parameters for each site are listed in Section 3.0 of the RFI Report.

2.1 ANALYTICAL PROGRAM

The data generated by this project is of sufficient quality and quantity to meet the overall project objective, which is closure of SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 under the TNRCC RRS program. Data from the following categories were required for this study:

Site Characterization - Data were used to evaluate physical and chemical properties of soil. The data were also used to characterize the nature and extent of any contaminants detected.

Health and Safety - Data were used to establish the level of protection needed for the sampling team and other site-related personnel. These data were gathered by the use of organic vapor monitors during intrusive activities.

A combination of screening level data and definitive level data was used during this RFI. Health and safety data were collected as screening data. All soil and water samples were analyzed following USEPA SW846 protocols. The definitions of screening data and definitive data, as established by the Data Quality Objectives Process for Superfund Interim Final Guidance (USEPA/540/G-93/071, 1993) are described below:

- Screening Data with Definitive Confirmation - Screening data can be generated by rapid, less precise methods of analysis with less rigorous sample preparation. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion and cleanup. Screening data provides analyte identification and quantification. Although the quantification may be determined using analytical methods with QA/QC procedures and criteria associated with definitive data, screening data without associated confirmation data are not considered to be data of known quality.

- Definitive Data - Definitive data were generated using rigorous analytical methods, such as approved USEPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. These methods produce tangible raw data (e.g., chromatograms, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an off-site location, as long as the QA/QC requirements are satisfied. For the data to be definitive, either analytical or total measurement error must be determined.

The data generated by the laboratory analysis of samples were sufficiently sensitive to allow comparison of the results to the TNRCC RRS. The Basewide QAPP (HydroGeoLogic, 1998) describes each method that was performed as part of the investigation and outlines the quality assurance measures the contract laboratory must follow. The methods of analysis selected for samples collected from NAS Fort Worth JRB produced screening as well as definitive data.

2.2 QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

The primary project QA/QC document is the Basewide QAPP (HydroGeoLogic, 1998). This document is based on versions 1.1 and 2.0 of AFCEE's Model QAPP, with some base-specific modifications. This document is supplemented by the laboratory's Quality Assurance Plan. Together, these two documents detail the requirements which must be followed in order to generate data of the level of quality required to support the project decision-making process. Among the requirements contained in these documents is the requirement for review of the data at several levels at the laboratory. Each benchtop chemist is responsible for a 100 percent review of all data generated, as is each laboratory section manager (or designee). Subsequent to analyst review, 10 percent of data are reviewed by the laboratory QA department prior to assembly of each data report. Each final data report is reviewed by the laboratory project manager prior to release from the laboratory.

2.2.1 Laboratory QA/QC Program

The laboratory QA/QC program was maintained in overall accordance with the Basewide QAPP. Where the laboratory performance was not in accordance with the QAPP criteria, the affected data were qualified in the data validation process. The Data Validation Reports are presented in Appendix F. In order to provide data meeting the requirements for definitive data, the following QC elements were used by the laboratory to provide QC data applicable to the analytical results: laboratory control samples (LCSs), matrix spike/matrix spike duplicate (MS/MSD) samples, surrogate recoveries, internal standard performance, method blanks and calibration, instrument tuning and calibration, second source calibration checks, confirmation columns/detectors, interference check samples, recovery tests, laboratory duplicates, and serial dilutions. A description of each laboratory QC element can be found in Section 4.0 of the Basewide QAPP (HydroGeoLogic, 1998). The frequency and acceptance criteria for each laboratory QC element are described in general in Sections 4.0 and 8.0 of the Basewide QAPP, and in the method-specific subsections of Section 7.0 of the Basewide QAPP (HydroGeoLogic, 1998).

2.2.2 QA/QC Program Performance

Evaluation of the QC and analytical data provided by the laboratory showed that there was general compliance with the QA/QC program. There were cases where individual analytes or QC elements did not meet program criteria. If these QC failures were serious enough, the laboratory performed re-analysis after attempting corrective action. Where re-analysis was not performed or corrective action was not successful, the data were qualified in accordance with

the method-specific requirements of Section 7.0 and the general requirements of Section 8.0 of the Basewide QAPP (HydroGeoLogic, 1998).

A total of 30,939 data points were generated by the analyses of project soil samples. Of these, 380 were rejected due to failure to achieve QA/QC program requirements. Total project soil data completeness is calculated to be 98 77 percent, which exceeds the project soil data completeness goal of 90 percent.

2.2.3 QA Activities

On March 25 and 26, 1998, the HydroGeoLogic project chemist, assisted by a Law Engineering project chemist, performed a QA audit of the facilities and practices of the analytical laboratory at Recra Labnet[1] in University Park, Illinois. The auditors reviewed the laboratory's Quality Assurance Plan, evaluated the laboratory's recent state certification performance evaluation sample results, reviewed the laboratory's standard operating procedures, and conducted an on-site inspection of the laboratory's facility. The laboratory was found to have sufficient expertise, resources, and procedures to generate definitive and legally defensible data.

[1] RCRA Labnet is currently doing business as Severn Trent Laboratories.

3.0 DATA QUALITY EVALUATION

This section describes the analytical methods and quality control program utilized for the RFI of SWMUs 16, 33, 34, 39, 42, and AOCs 6 and 15 at NAS Fort Worth JRB. The analytical methods used for the analysis of the field samples are described in the Basewide QAPP (HydroGeoLogic, 1998).

3.1 DATA QUALITY EVALUATION OBJECTIVE

The objective of the Data Quality Evaluation (DQE) is to provide a professional review of the analytical data packages submitted by the laboratory. The DQE consists of a review of laboratory QC data and field QC data. This review is performed to indicate which data are usable, usable with qualification, or unusable. The analytical procedures used to generate field sample data are evaluated in accordance with the general and method-specific QC criteria listed in Sections 5.0, 6.0, 7.0, and 8.0 of the Basewide QAPP (HydroGeoLogic, 1998).

The following items of laboratory QC data are reviewed:

- Sample integrity
- Sample completeness
- Preparation and analysis holding times
- Laboratory preparation and analysis methods
- Method accuracy and precision (e.g., MS/MSDs, dilution tests)
- Laboratory performance criteria (e.g., blanks, LCS recoveries, surrogates, internal standards)
- Instrument initial and continuing calibration checks

Field QC performance is evaluated through evaluating field duplicates, field blanks, field documentation, and shipping criteria.

3.2 METHODOLOGY FOR DATA QUALITY ASSESSMENT

The results for SWMU 16, 33, 34, 39, 42, and AOC 6 and 15 samples collected were validated by Environmental Data Services, Inc. The data were evaluated in accordance with the procedures and acceptance criteria contained in the Basewide QAPP. All results from all analytical methods (with the exception of sulfide results) were evaluated with respect to the requirements of definitive data at the equivalent of a USEPA level III review. The data review identified those data which were unusable due to serious QC deficiencies, as well as other data which were affected by QC problems but not of sufficient severity to warrant rejection. Rejected data were qualified 'R', while qualifiers of lesser severity were applied to usable data where necessary. The level III validation reports for each sample delivery group (SDG) are included in Appendix F.

Following the level III review, 10 percent of the sample results were validated by IT. The data were evaluated in accordance with the procedures and acceptance criteria contained in the

Basewide QAPP (HydroGeoLogic, 1998). The 10 percent of all of the results from all of the analytical methods were evaluated with respect to the requirements of definitive data at the equivalent of a USEPA level IV review in order to ensure the quality of the level III assessment. The level IV data validation summary report is included in Appendix F.

HydroGeoLogic's Project Chemist performed a review of the level III and level IV data reports and determined that there is good overall agreement between the level III and the level IV data reviews for the sample results produced during this RFI. The level IV review confirmed that the data reported with level III qualifiers meet the project DQOs for definitive data. The data validation review reports are included in Appendix F.

Subsequent to the data validation process, the required data validation qualifiers were entered into the project database. The accuracy the validation and data entry process was checked at all stages. The "as received" accuracy of each EDD for each data package was verified by comparing the contents of each EDD to the hardcopy of that data package at a 10 percent rate. The accuracy of the validation qualifiers was also checked on the final database output at a rate of 10 percent.

641 358

TAB

Appendix F

APPENDIX F

DATA VALIDATION REPORTS

Site: NAS Fort Worth JRB, TX

SDG #: 9906G678

Laboratory: STL-Chicago

Date: 6/9/00

HydroGeoLogic, Inc. Reviewer: Ken Rapuano

Validation Criteria: NAS Fort Worth JRB Basewide QAPP, February 1998

Data package 9906G678, containing analytical results for Appendix IX VOCs, Appendix IX SVOCs, Appendix IX metals, and TPH by TX1005 was validated at Level IV by IT Corporation. HydroGeoLogic's project chemist compared the Level IV review results to the Level III review conducted by EDS. There were some differences noted between the Level III and Level IV reviews, however these were not caused by a difference in review level but by differences in interpretation of the QAPP and validator's judgment. The differences are discussed below by analytical method. There is good overall agreement between the Level III and Level IV data reviews for this round of sampling, and the data reported with Level III qualifiers meet the project DQOs for definitive data.

Appendix IX VOCs

1) IT rejected several compounds that are listed in Appendix A of the QAPP due to initial calibration correlation coefficient less than 0.995. This is not an initial calibration criterion for the affected compounds and no data are qualified.

2) IT rejected several compounds that are listed in Appendix A of the QAPP due to percent differences greater than 25% in continuing calibration verifications. This is not a continuing calibration criterion for the affected compounds and no data are qualified

3) EDS rejected 1,1-dichloroethene based on low RRF; however, 1,1-dichloroethene is not an SPCC and this qualification is not necessary. The R-qualifiers should be removed for this compound in samples BHGLSWMU31002-01, BHGLSWMU31002-02, BHGLSWMU31002-03, and BHGLSWMU31002-04.

Appendix IX SVOCs

1) Although it was noted as present in the equipment blank, IT did not qualify bis(2-ethylhexyl)phthalate detections as field artifacts in samples BHGLSWMU31002-01 and BHGLSWMU31001-01.

2) EDS did not note that the 2,4-dinitrophenol initial calibration was out of control (both correlation coefficient and %RSD). The results should be rejected for this compound in all soil samples in this SDG.

3) IT rejected several compounds that are listed in Appendix A of the QAPP due to percent differences greater than 25% in continuing calibration verifications. This is not a continuing calibration criterion for the affected compounds and no data are qualified.

Appendix IX Metals

1) IT rejected antimony, arsenic, beryllium, cobalt, and nickel in EB060799 due to negative values in the preparation blank. These results only required UJ qualification because the absolute values of the negative drift for these elements was not greater than the PQL.

2) IT and EDS J-qualified arsenic detections in BHGLSWMU31001-02, BHGLSWMU31002-01, and BHGLSWMU31002-02 due to a negative value in the preparation blank. These results only required F qualification because the arsenic detection in each of these samples was not greater than the PQL.

3) Although the field duplicate results had an RPD out of control for chromium, the results are close enough to the PQL that the 4xPQL rule should have been applied instead. EDS qualified the chromium results for BHGLSWMU31001-04 and DUP04 as estimated in error.

TPH

1) Samples BHGLSWMU31002-01, BHGLSWMU31002-02, BHGLSWMU31002-03, and BHGLSWMU31002-04 were extracted on day 14. EDS erroneously qualified these results as estimated, but they can be used without qualification.

Site: NAS Fort Worth JRB, TX

SDG #: 9905G510

Laboratory· STL-Chicago

Date: 6/9/00

HydroGeoLogic, Inc. Reviewer: Ken Rapuano

Validation Criteria: NAS Fort Worth JRB Basewide QAPP, February 1998

Data package 9905G510, containing analytical results for the full suite of Appendix IX analytes, TPH by TX1005, ethylene glycol, and soil pH, was validated at Level IV by IT Corporation. HydroGeoLogic's project chemist compared the Level IV review results to the Level III review conducted by EDS. There were some differences noted between the Level III and Level IV reviews, however these were not caused by a difference in review level but by differences in interpretation of the QAPP and validator's judgment. The differences are discussed below by analytical method. There is good overall agreement between the Level III and Level IV data reviews for this round of sampling, and the data reported with Level III qualifiers meet the project DQOs for definitive data.

Appendix IX VOCs

1) IT rejected several compounds that are listed in Appendix A of the QAPP due to initial calibration correlation coefficient less than 0.995. This is not an initial calibration criterion for the affected compounds and no data are qualified.

2) IT rejected several compounds that are listed in Appendix A of the QAPP due to percent differences greater than 25% in continuing calibration verifications. This is not a continuing calibration criterion for the affected compounds and no data are qualified

3) Although it was noted as present in the equipment blank, IT did not qualify the toluene result as a field artifact in samples BHGLSWMU36002-01.

Appendix IX SVOCs

1) Although it was noted as present in the equipment blank, IT did not qualify the bis(2-ethylhexyl)phthalate detections as field artifacts in three samples.

2) IT did not note that the benzyl alcohol initial calibration was out of control (both correlation coefficient and %RSD).

3) IT rejected several compounds that are listed in Appendix A of the QAPP due to percent differences greater than 25% in continuing calibration verifications. This is not a continuing calibration criterion for the affected compounds and no data are qualified.

4) EDS incorrectly identified the sample with a low surrogate recovery. As no qualification was required, there is no impact on the data.

Appendix IX Metals

1) Neither validator validated cadmium results correctly. All cadmium detections in soil samples should be considered laboratory artifacts based on CCB results and qualified "PQL UJ". IT U-qualified only those results bracketed by the out of control CCB; EDS did not qualify based on this CCB at all.

2) EDS U-qualified the tin detection in sample BHGLSWMU36002-03; however, all tin detections in soil samples in this SDG should be U-qualified.

3) Although the field duplicate results had an RPD out of control for beryllium, the results are close enough to the PQL that the 4xPQL rule should have been applied instead. EDS qualified the beryllium results for BHGLSWMU31003-02 and DUP13 as estimated in error. The same error occurred with cadmium; however, the cadmium qualification is superseded by the CCB issue above.

Appendix IX Pesticides/PCBs

1) EDS did not R-qualify the kepone results for all samples due to initial calibration out of control.

2) IT notes the kepone and 4,4'-DDD continuing calibrations are out of control; however, as this is only for the secondary column and there are no detections, there should be no qualification of the data.

Appendix IX Organophosphorus Pesticides

1) IT R-qualified famphur due to continuing calibrations percent differences out of control; however, as this is only for the secondary column and there are no detections, there should be no qualification of the data.

TPH

1) IT did not note that sample EB052499 was extracted out of holding time.

Dioxins/Furans, Ethylene Glycol, Appendix IX Herbicides, Soil pH, Sulfide, and Cyanide

No discrepancies noted.

DATA VALIDATION SUMMARY REPORT

PROJECT:	NAS Ft. Worth-DO 15
LABORATORY:	Severn Trent Laboratories (Pensacola, Chicago, and Philadelphia)
REVIEWERS:	George Csordas/Teresa Carleton/Ida Bennett/ Bruce Rohrbach
SDGS:	9905G510, 9906G678
MATRIX:	Soils, Waters
VALIDATION LEVEL:	IV
ANALYSES, METHODS:	Volatile Organic Compounds, SW846 Method 8260B Semivolatile Organic Compounds, SW846 Method 8270C Total Petroleum Hydrocarbons (TPH), Method TNRCC 1005 Ethylene Glycol by GC/FID, STL-PN SOP 641 Pesticides/Polychlorinated Biphenyls (PCBs), SW846 Method 8080 Organo-Phosphorus (O-P) Pesticides, SW846 Method 8141 Dioxins and Dibenzofurans, SW846 Method 8280 Inorganics, SW846 Methods 6010B, 7740, 7470/7471 Chlorinated Herbicides, SW846 Method 8150 Wet chemistry, SW846 Method 9010, 9045C, 9030A

INTRODUCTION

Twenty-five (25) soil samples and four (4) field blanks (listed in Tables 1 and 2) were submitted to two Severn Trent Laboratories for the analyses listed in the header. The samples were validated and reviewed in accordance with the following:

- "Final Basewide Quality Assurance Project Plan, NAS Fort Worth JRB, Texas," dated February 1998,
- "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (EPA, 1994)
- "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (EPA, 1994)

Table 1. Listing of Samples in Delivery Order 15, SDG 9905G510

Field sample ID	Lab sample ID 9905G510 prefix	Sampling date	VOC analysis date	SVOC prep, analysis dates	TPH prep, analysis dates*	Ethylene glycol prep, analysis dates*	Pesticides/ PCB prep, analysis dates	O-P Pesticides prep, analysis dates	Dioxin, Furans prep, analysis dates	ICP/GFAA prep, analysis dates	Mercury prep, analysis dates	Herbicide Prep, analysis dates	Wet chemistry analysis dates
BHGLSWMU prefix (all but DUP)													
36001-01	001	5/24/99	6/3/99	6/7, 6/14/99	(001) 6/2/99	(001) 6/7/99	-	-	-	6/14, 6/20, 6/25, 6/15-6/17/99	5/27/99	-	pH 5/28/99
36001-02	002		6/4/99	6/7, 6/15/99	(002) 6/2, 6/3/99	(002) 6/7/99							
36001-03	003			6/7, 6/10/99	(003) 6/2, 6/3/99	(003) 6/7/99							
36001-04	004			6/7, 6/10/99	(004) 6/2, 6/3/99	(004) 6/7/99							
36002-01	005		6/6/99	6/7, 6/14/99	(005) 6/2, 6/3/99	(005) 6/7/99							
36002-02	006		6/6/99	6/7, 6/10/99	(006) 6/2, 6/3/99	(006) 6/7/99							
36002-03	007		6/4/99		(007) 6/2, 6/3/99	(007) 6/7/99							
36003-01	008		6/6/99		(008) 6/2, 6/3/99	(008) 6/7/99							
36003-02	009				(009) 6/2, 6/3/99	(009) 6/7/99							
36003-03	010			6/7, 6/14/99	(010) 6/2, 6/3/99	(010) 6/7/99							
DUP13	011			6/7, 6/10/99	(011) 6/2, 6/3/99	(011) 6/7/99							
BHGLAOC0 prefix													
15001-01	012	5/24/99	6/7/99	6/7, 6/14/99	-	-	6/4, 6/11/99	6/7, 6/12/99	6/3, 6/16/99	6/14, 6/20, 6/25, 6/15-6/17/99	5/27/99	6/4, 6/9/99	CN 6/2, 6/3/99 S 5/29/99
15001-02	013		6/6/99	6/7, 6/10/99			6/4, 6/10/99						
15001-03	014		6/6/99										
15001-04	015		6/7/99									6/4, 6/10/99	
15001-05	016		6/7/99					6/7, 6/12/99, RE 6/14, 6/16/99					
LB052499	017	5/24/99	6/4/99	5/28, 6/1/99	(012) 6/2, 6/3/99	(012) 6/7/99	5/28, 6/9/99	5/28, 6/10/99	5/28, 6/16/99	6/10, 6/17, 6/17, 6/11, 6/18/99	6/2, 6/3/99	5/28, 6/9/99	CN 6/2, 6/3/99 S 5/29/99
TB052499	018			-	-	-	-	-	-	-	-		-

Where * = lab ID numbers in ( ) are STL-Pensacola IDs with prefix 905561

Table 2. Listing of Samples in Delivery Order 15, SDG 9906G678

Field sample ID *BHGLSWMU prefix***	Lab sample ID 9906G678 prefix	Sampling date	VOC analysis date	SVOC prep, analysis dates	TPH prep, analysis dates+	ICP/GFAA prep, analysis dates	Mercury prep, analysis dates	pH
31001-01	001	6/7/99	6/14/99	6/15/99, 6/28/99	(001) 6/22, 6/26/99	7/15, 7/16, 7/17, 7/20/99	6/16/99	-
31001-02	002				(002) 6/22, 6/26/99			
31001-03	003			6/15/99, 6/25/99	(003) 6/22, 6/26/99			
31001-04	004				(004) 6/22, 6/26/99			
DUP04	005				(005) 6/22, 6/26/99			
31002-01	008	6/8/99	6/15/99	6/15/99, 6/28/99	906230-001* 6/22, 6/26/99			
31002-02	009				906230-002* 6/22 6/26/99			
31003-03	010			6/15/99, 6/25/99	906230-003* 6/22, 6/26/99			
31003-04	011				906230-004* 6/22, 6/26/99			
EB060799 ^	007	6/7/99	6/16/99	6/10, 6/18/99	(006) 6/11, 6/15/99	6/23, 6/29, 6/24, 6/25, 6/26/99	6/17/99	6/7/99
TB060799	006			-	-	-	-	-

** all with prefix except DUP, EB, and TB samples
+ STL Pensacola lab numbers in ( ) with prefix 906215
* STL Pensacola lab numbers
^ pH analyzed 6/8/99

VOLATILE ORGANIC COMPOUNDS BY SW846 METHOD 8260B

I-Sample Documentation/Holding Times

Both SDGs:

The validated samples were received by STL-Chicago in good condition in coolers chilled. The samples met the holding time criteria from sample collection analysis except for BHGLAOC15001-01, -04, and -05. The holding time was exceeded by <1.5 hours; no qualifiers were assigned.

II-Blank Analysis

Both SDGs: Blanks are evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities. There were no contaminants reported in the prep blanks.

There were no contaminants reported in the trip blanks. No action was taken.

The equipment blank, EB052499, had three reported contaminants: acetone, methylene chloride, and toluene No action was taken, because the samples reported nondetects for the compounds.

III-Instrument Performance Check Tune Standard

Both SDGs: The analysis of the instrument performance check solution, bromofluorobenzene (BFB), must be performed at the beginning of each 12-hour period during which standards and/or samples are analyzed. The tunes met the ion abundance criteria No qualifications were required

IV-Initial Calibration

Initial calibration is performed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. The initial calibrations were reviewed in accordance with the QAPP.

SDG 9905G510: No qualifiers were assigned to the compounds using the average relative response factor; there were no outliers. However, of the compounds using a curve fit, the following compounds were R-qualified, per the QAPP, for correlation coefficients <0.995

Compounds R-qualified	Samples affected
Acetone 2-butanone methacrylonitrile isobutanol methylmethacrylate	All samples in SDG except EB and TB

SDG 9906G678: No qualifiers were assigned to the compounds using the average relative response factor; there were no outliers. However, of the compounds using a curve fit, the following compounds were R-qualified, per the QAPP, for correlation coefficients <0.995.

Instrument Compounds R-qualified	Samples affected
GCL-2 Isobutanol, pentachloroethane	31002-01DL
GCL-6 Acrylonitrile, 2-butanone, propionitrile, Pentachloroethane, 1,2-dibromo-3-chloropropane	TB EB
GCL-9 Acetone, methacrylonitrile, isobutanol, methylmethacrylate	All samples in SDG except EB, TB and DL

V-Continuing Calibration

Continuing calibration standards and the surrogates were analyzed at the beginning of each 12-hour analytical run.

SDG 9906G678: No qualifiers were assigned to the compounds using the average relative response factor; there were no outliers. However, of the compounds using a curve fit, the following compounds were R-qualified. per the QAPP, for having %D >25%:

Instrument. Compounds R-qualified	Samples affected
GCL-2 Acrolein, acetone, carbon disulfide, acetonitrile. Acrylonitrile. vinyl acetate, 2-butanone Propionitrile, 4-methyl-2-pentanone, 2-hexanone Dibromochloromethane. 1 1.2 2-tetrachloroethane. 1,2,3-trichloropropane, 1,2-dibromo-3-chloropropane bromochloromethane [Note acetone was J-qualified instead of R-qualified because it was a detect]	31002-01DL
GCL-6 Dichlorodifluoromethane. carbon disulfide.Vinyl acetate 2-chloro-1.3-butadiene. 2-butanone 4-methyl-2-pentanone*. 2-hexanone*, pentachloroethane*	TB EB
GCL-9 Dichlorodifluoromethane, bromomethane, Trichlorofluoromethane. acrolein. acetone. Vinyl acetate, 2-butanone, propionitrile,4-methyl-2-pentanone, 2-hexanone. 1,2-dibromo-3-chloropropane	BHGLSWMU31001-01,-02.-03.-04. DUP04
GCL-9 acrolein, acetone, carbon disulfide, Vinyl acetate methacrylonitrile methylmethacrylate, ethylmethacrylate	BHGLSWMU 31002-01, -02 -03. -04
GCL-9. Dichlorodifluoromethane, acetone carbon disulfide,Acetonitrile. acrylonitrile, vinyl acetate 2-butanone Propionitrile, 4-methyl-2-pentanone. ethylmethacrylate, 2-hexanone	BHGLSWMU 31002-01RE

* no continuing calibration data in package, data for these compounds J/UJ qualified

SDG 9905G510: No qualifiers were assigned to the compounds using the average relative response factor; there were no outliers. However, of the compounds using a curve fit, the following compounds were R-qualified, per the QAPP, for having %D >25%:

Compounds R-qualified	Samples affected
Dichlorodifluoromethane, acrolein, acetonitrile.Acrylonitrile, vinyl acetate. 2-butanone, Propionitrile	36001-01
Acetonitrile, acrolein. acetone, acrylonitrile propionitrile. trans-1,4-dichloro-2-butene,ethylmethacrylate, 2-chloro-1 3-butadiene	TB, EB
Dichlorodifluoromethane, trans-1,4-dichloro-2-butene. vinyl acetate.	36001-02. -03, -04 36002-03
Dichlorodifluoromethane, carbon disulfide, Vinyl acetate, 2-butanone, 2-hexanone	36002-01, 02 36003-01, -02. -03 DUP13 15001-02. -03
Dichlorodifluoromethane, acrolein, acetone.carbon disulfide, iodomethane, acetonitrile,3-chloropropene, vinyl acetate, 2-chloro-1,3-butadiene, 2-butanone, isobutanol, methacrylonitrile, methylmethacrylate, 4-methyl-2-pentanone 1.1.2-trichloroethane 2-hexanone, trans-1.4-dichloro-2-butene	15001-01, -04, -05

VI-Surrogates Spikes

SDG 9906G678: Surrogate spike recoveries (%R) for the four volatile compounds met the criteria listed in the QAPP. No qualifiers were assigned

SDG 9905G510: Surrogate spike recoveries (%R) for the four volatile compounds met the criteria listed in the QAPP except for samples EB052499 and TB052499. Each had a high recovery for dibromofluoromethane Any detects would be J-qualified; however, no action was taken, because there were no detects for these two samples

VII-Matrix Spike/Matrix Spike Duplicate (MS/MSD)

SDG 9906G678: No MS/MSD was analyzed with this sample set

SDG 9905G510: Sample BHGLSWMU-36001-02 was analyzed as MS/MSD sample. There were no outliers Several samples had no control limits, no action was taken.

VIII-Laboratory Control Samples/Samples Duplicates

The laboratory control samples were evaluated to determine the analytical method's accuracy. The recoveries were within the control limits listed in the QAPP except for 1,1-dichloroethene in SDG 9906G678 (low recovery) and dichlorodifluoromethane in SDG 9905G510. Sample BHGLSWMU-31002-01DL had 1,1-dichloroethene J- (for detects) or R- (for nondetects) qualified; samples BHGLSWMU-36001-01, -02, -03, and -04 and BHGLSWMU-36002-03 had detects for dichlorodifluoromethane J-qualified. There was no action on the latter; there were no detects.

IX-Internal Standards (IS)

Internal standards performance criteria ensure that instrument's sensitivity and response are stable during every analytical run. The areas and retention time for the four internal standards spiked into the samples, standards, and associated quality control samples were within the performance criteria except for samples listed in the table below:

Sample ID	IS 1	IS2	IS3	IS4*	Action
BHGLSWMU31002-01RE			low	low	J/UJ- however. RE data not used, therefore. no action
BHGLAOC15001-02				low	J/UJ associated compounds
BHGLAOC15001-03				low	J/UJ associated compounds

*IS 4 = 1,4-dichlorobenzene-d4

X-Field Duplicates

Both SDGs: There were no qualifiers assigned because of poor correlation between the original and field duplicate samples.

XII-Quantitation Verification

The analytical results were verified through a review of the relative retention times and the chromatograms. Compounds were F-flagged if the result was between the reporting limit, RL, and the method detection limit, MDL. Detects accepted without qualification were assigned "=". Data that should not be used because more acceptable data are present in a dilution/reanalysis run were Z-qualified. The validator determined which data were more "acceptable" based on dilutions made, reporting limits, and other quality issues. Tentatively identified compounds (TICS) were T-flagged in accordance with the QAPP.

SEMIVOLATILE ORGANIC COMPOUNDS BY SW846 METHOD 8270C

I-Sample Documentation/Holding Times
The validated samples were received by STL-Chicago in good condition and within temperature limits The samples met the holding time criteria of 7 days (for waters) and 14 days (soils) from sample collection to extraction, and 40 days from extraction to analysis, no qualifiers were assigned.

II-Blank Analysis
Blanks are evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities.
Both SDGs: No target compounds were detected in the method blanks associated with the samples. No qualifiers were applied. There were tentatively identified compounds (TICS) reported for the method blanks The 5X rule was applied and the TIC was U-qualified if <5X the concentration found in the method blank.
SDG 9906G678: Three target compounds (diethylphthalate, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate) and two TICS were reported in EB060799 No action was taken, because the samples did not have reported concentrations for these compounds
SDG 9905G510: Three target compounds (acetophenone, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate) and two TICS were reported in EB052499. No action was taken, because the samples did not have reported concentrations for these compounds.

III-Instrument Tune
Both SDGs: Decafluorotriphenylphosphine (DFTPP) tunes were correctly run prior to any initial and/or continuing calibration. The tunes met the minimum acceptance criteria specified in the QAPP and the method for ion abundance. The samples/standards associated with each tune were analyzed within a 12-hour period following the tune No qualifiers were assigned

IV-Initial Calibration
Initial calibration of the instrument is performed to ensure that it is capable of producing acceptable qualitative and quantitative data.
SDG 9905G510: The initial calibrations were within the acceptance criteria. No qualifiers were assigned for outliers associated with the initial calibrations.
SDG 9906G678: The compound, 2,4-dinitrophenol, was R-qualified for BHGLSWMU31001-01, -02, -03, -04, DUP04, BHGLSWMU 31002-01, -02, -03, and -04 because the correlation coefficient was <0.995 There were no other outliers.

V-Continuing Calibration
Continuing calibration standards were analyzed at regular intervals.
SDG 9905G510: The following table lists the samples and associated compounds that were qualified because of high percent difference/drift

Instrument Compounds R-qualified	Samples affected
GCL1 n-nitrosomethethylamine,N-nitrosodiethylamine, 1-naphthylamine. 2-naphthylamine, sym-trinitrobenzene, diallate. 3 3'-dimethylbenzidine. hexachlorophene	EB052499
GCL4 2.4,5-trichlorophenol, benzyl alcohol. n-nitrosomethethylamine, N-nitrosodiethylamine, n-nitrosomorpholine, n-nitrosopiperdine, a,a-dimethylphenethylamine. 1.4-naphthoquinone. diallate 2-sec-butyl-4.6-dinitrophenol. 2-acetylaminofluorene	BHGLSWMU 36001-03. -04 BHGLSWMU 36002-02 -03 BHGLSWMU 36003-01. -02 BHGLAOC0 15001-02 -03. -04. -05
GCL1 n-nitrosomethethylamine. N-nitrosodiethylamine. n-nitrosopiperdine, a,a-dimethylphenethylamine. 2-naphthylamine, sym-trinitrobenzene. diallate, 4-nitroquinoline-1-oxide hexachlorophene	BHGLAOC0 15001-01 BHGLSWMU 36003-03 BHGLSWMU 36002-01 BHGLSWMU 36001-01
GCL4 1.4-dioxane, a,a-dimethylphenethylamine. p-phenylenediamine. 1,4-naphthoquinone, 1-naphthylamine. 2-naphthylamine 4-nitroquinoline-1-oxide. methapyrilene. hexachlorophene	BHGLSWMU 36001-02

SDG 9906G678: The following table lists the samples and associated compounds that were qualified because of high percent difference/drift:

Instrument Compounds R-qualified	Samples affected
GCL4 4-nitroquinoline-1-oxide, n-nitrosomethethylamine. 1-naphthylamine, 2-naphthylamine, 1.4-naphthoquinone. a a-dimethylphenethylamine	EB060799
GCL4 n-nitrosomethethylamine, isosafrole, 1-naphthylamine. 2-naphthylamine, methapyrilene. 1.4-naphthoquinone	BHGLSWMU 31001-03. -04 DUP04 BHGLSWMU 31002-03 -04
GCL4 a.a-dimethylphenethylamine, isosafrole. 1,4-naphthoquinone. 1-naphthylamine. 2-naphthylamine. 4-nitroquinoline-1-oxide. 2-acetylaminofluorene 3-methylchfoanthrene	BHGLSWMU 31002-01 -02 BHGLSWMU 31001-01 -02

VI-Surrogate Spike

SDG 9906G678: Surrogate spike recovery (%R) for the surrogates met the criteria on the report form. No action was taken on these samples.

SDG 9905G510: Sample BHGLSWMU36001-01 had one surrogate out. Criteria allow two outlier compounds for any one fraction, no action was required

VII-Matrix Spike/Matrix Spike Duplicate (MS/MSD)

SDG 9906G678: Sample BHGLSWMU 31001-01 was used as the MS/MSD for this SDG. The compound, 4-chloroaniline, was J/UJ qualified for all samples in the SDG because of low spike recovery. Hexachlorocyclopentadiene and 4-nitroaniline had detects J-qualified for high RPD for all samples in the SDG

SDG 9905G510: Sample BHGLSWMU 36001-02 was used as the MS/MSD for this SDG. Fifteen compounds had high RPDs. In accordance with the QAPP, detects for these compounds would be J-qualified if from the same sample site as the parent sample. No action was taken, because no detects were present. Hexachlorocyclopentadiene had a low MSD recovery All BHGLSWMU samples had this compound J/UJ qualified

Both SDGs had compounds without control limits, no qualifiers were assigned

VIII-Laboratory Control Samples/Sample Duplicates

The laboratory control samples associated with the samples was evaluated to determine the analytical method's accuracy.

Both SDGs: There were no outliers; no qualifiers were assigned. Both SDGs had compounds without control limits, no qualifiers were assigned.

IX-Internal Standards (IS)

Internal standards performance criteria ensure that instrument's sensitivity and response are stable during every analytical run. The areas and retention time for the six internal standards spiked into the samples, standards, and associated quality control samples were within the performance criteria except for samples listed in the table below:

Sample ID	IS 1	IS2	IS3	IS4	IS5	IS6	Action
EB060799	low	low	low	low	low	low	J/UJ all compounds associated with IS1-IS4

There were no other outliers for either SDG.

X-Field Duplicates

Both SDGs: No target compounds had poor correlation between the original sample and its field duplicate. No qualifiers were assigned.

XI-Quantitation Verification

Both SDGs: The analytical results were verified through a review of the relative retention times and the chromatograms. Several samples had compounds F-flagged (>MDL, <RL). The tentatively identified compounds (TICS) were T-flagged and J-qualified as estimated. Detects accepted without qualification were assigned "=". Data that should not be used because more acceptable data are present in a dilution/reanalysis run were Z-qualified. The validator determined which data were more "acceptable" based on dilutions made, reporting limits, and other quality issues.

TPH BY METHOD TNRCC 1005

I-Sample Documentation/Holding Times
Both SDGs: STL-Pensacola received the chilled samples for TPH.
SDG 9906G510: The samples were analyzed within the holding time. No qualifiers were assigned.
SDG 9906G678: Samples BHGLSWMU 31001-01, -02 -03, -04, and DUP04 had all compounds J/UJ qualified for holding time exceedance (>14 days).

II-Blank Analysis
Both SDGs: There were no detects reported in the method s associated with the samples There were no detects in the equipment blank associated with both SDGs. No qualifiers were assigned.

III-Initial Calibration
Both SDGs: The calibrations were performed in accordance with the method and QAPP requirements. No qualifiers were assigned.

IV-Continuing Calibration
Both SDGs: The continuing calibration was within the acceptance criteria listed in the QAPP. No qualifiers were assigned.

V-Surrogate Spike
Both SDGs: The surrogate recoveries were within the control limits. No qualifiers were assigned.

VI-Matrix Spike/Matrix Spike Duplicate (MS/MSD)
SDG 9906G510: Sample BHGLSWMU 36001-02 was used as the MS/MSD. The matrix spike had low recoveries, the RPDs were high. All the soil samples were J/UJ qualified.
SDG 9906G678: No MS/MSD was analyzed using a sample from the SDG.

VII-Laboratory Control Samples/Samples Duplicates
Both SDGs: The recoveries for the laboratory control samples were within the control limits. No qualifiers were assigned.

VIII-Field Duplicates
SDG 9906G510: The field duplicate had good correlation with the original sample. No qualifiers were assigned
SDG 9906G678: No field duplicate was submitted with this SDG

IX-Quantitation Verification
Both SDGs: Data are accepted as qualified, based on the information provided.

INORGANICS BY SW846 METHODS

I-Sample Documentation/Holding Times

Both SDGs: Most of the samples were received in good condition in coolers within the 2-6 degrees Centigrade (°C) temperature range There was one cooler that was received at 6.8 deg C. It was not identified on the custody papers; no qualifiers were assigned. The samples met the holding time criteria from sample collection to analysis; no qualifiers were assigned.

II-Blank Analysis

Blanks are evaluated to determine the presence and magnitude of contamination problems resulting from field and laboratory activities.

Method Blanks:

SDG 9906G678: Sample EB060799: Antimony, arsenic, beryllium, cobalt, and nickel had non-detects R-qualified because of negative values (per QAPP) Copper and zinc were U-qualified. Samples BHGLSWMU-31001-02, 31002-01, 31002-02 had arsenic UJ/R qualified for blank contamination and negative values All the samples had tin U-qualified. Samples BHGLSWMU-31001-01, 31002-01, 31002-03 had silver U-qualified for blank contamination

SDG 9905G510: Sample EB052499 had arsenic, cadmium, nickel, and tin (all nondetects) R-qualified for negative blank values. Copper, vanadium, and zinc were U-qualified for blank contamination The following table presents the elements with blank contamination and affected samples·

Contaminant	Affected samples	Action
Arsenic	BHGLSWMU-36001-04, BHGLAC0 15001-03 -05	U-qualified J-qualified for negative blank value
Beryllium	BHGLSWMU-36001-04, BHGLAC0 15001-04 -05	U-qualified J-qualified for negative blank value
Cadmium	BHGLSWMU-36001-01 - 04, 36002-01 - 03 36003-02, -03, DUP13, BHGLAC0 15001-02 - 05	U-qualified J-qualified for negative blank value
Tin	All samples	U-qualified

Calibration Blanks:

Both SDGs: No U-qualifiers were assigned to the samples because of calibration blanks. The concentrations reported were U-qualified as the result of the method blank or the sample concentrations were >5X the blank concentrations.

Field Blanks:

SDG 9906G678: There were no qualifiers assigned because of equipment blank contamination. The detects in the equipment blank were U-qualified as the result of the method blank.

SDG 9905G510: Barium was a reported detect There were no qualifiers assigned, however, because the sample concentrations were >5X the blank concentration.

III-Initial Calibration

Both SDGs : Initial calibration of the instruments is required to ensure that they are capable of producing acceptable qualitative and quantitative data. The initial calibrations for the ICP, graphite furnace, and cold vapor methods were performed in accordance with the criteria specified in the QAPP. No qualifiers were assigned.

IV-Continuing Calibration

Both SDGs : Continuing calibration verification recoveries were within the acceptance criteria. No action was required.

V-Interference Check Solution (ICS)
Both SDGs : Recoveries were within the acceptance criteria (80-120%) No qualifiers were assigned

VI-Matrix Spike/Matrix Spike Duplicate (MS/MSD)
SDG 9906G678: There was no MS/MSD analyzed in this SDG.
SDG 9905G510: Sample BHGLSWMU 36001-02 was analyzed as MS/MSD. Low recoveries were received for antimony, copper, lead, selenium, and silver. All the BHGLSWMU samples in this SDG had all but one of these elements J/UJ qualified. No action was taken on lead because the sample concentration was >4X the spike concentration. Lead detects were J-qualified, however, for high RPD

VII-Laboratory Control Sample/ Duplicates (LCS/LCSD)
Both SDGs : The recoveries were within the acceptance range; no qualifiers were assigned.

VIII-Field Duplicates
Both SDGs : Field duplicates were submitted with each SDG. There were no qualifiers assigned to the samples; the results were within the acceptance criteria specified in the QAPP.

IX. Serial Dilution
Both SDGs : No serial dilutions were performed on these samples.

X. Graphite Furnace Analyses
Both SDGs : Graphite furnace atomic absorption (GFAA) techniques were used for elements in each SDG. Many of the spike recoveries were outside of the control limits. No Method of Standard Addition (MSA) was performed, therefore, the following metals were J/UJ qualified for the listed samples:

Elements Qualified	Affected Samples
Silver	BHGLSWMU- 36001-01, -02, -03, 36002-01, -02 -03 36003-01, -02, -03, DUP13, BHGLAOC 0 15001-01 -02 -03
Selenium	BHGLSWMU- 36001-02, -03 -04, 36002-01, -02 -03 36003-01, -02, -03, DUP13 BHGLAOC 0 15001-01 -02 -03 -04, -05
Thallium	BHGLSWMU- 36001-01, -03 -04 36003-01, -02, -03, BHGLAOC 0 15001 -02 -04 -05
Silver	BHGLSWMU 31001-01 -02, -03 -04, DUP04, 31002-01, -02, -03 -04
Selenium	BHGLSWMU 31001-03, -04 -01 DUP04 31002-03, -01, -02, -04
Thallium	BHGLSWMU 31001-01, -02, -03 -04, DUP04, 31002-01, -02 -04

XI-Quantitation Verification
The data are acceptable as qualified. Results were F-flagged if the reported value was less than the reporting limit but greater than the instrument detection limit.

PESTICIDES/PCBs-SDG 9905G510 only-SW METHOD 8080A

I-Sampling Documentation
Chain-of-custody record indicates that the samples were received in good condition within the acceptable temperature range. No qualifiers were assigned

II-Holding Times
The samples were analyzed within the holding periods between sampling and extraction and extraction and analysis. No qualifiers were assigned.

III-Initial Calibration
Kepone was R-qualified for all soil samples because of %RSD>20% The remaining compounds were within the initial calibration control limits.

IV-Continuing Calibration
Continuing calibration was performed in accordance with the method Kepone and 4,4'DDD had percent differences (%D)>15% and were J/UJ-qualified for the soil samples.

V-Instrument Performance
The percent resolution check mixture was within the acceptance criteria specified in the method The DDT/endrin breakdown did not exceed 20% and the combined breakdown did not exceed 30% for the primary column. No qualifiers were assigned

VI- Blanks
There were no detects in either the equipment blank or the method blank No qualifiers were assigned.

VII-System Monitoring Compound (surrogate)
Surrogate spike recoveries for the pesticide/PCB analyses met the acceptance criteria stated on the summary form. Sample BHGLAOC0 15001-01 had the surrogates diluted out (1·100 dilution) No qualifiers were assigned.

VIII-Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
No MS/MSD was analyzed with these samples. No qualifiers were assigned.

IX-Laboratory Control Sample (LCS)
The laboratory control samples analyzed had recoveries within the control limits; no qualifiers were assigned.

X- Field Duplicates
There were no field duplicates in this SDG.

XI-Overall Assessment of the Data
The sample data in this SDG are acceptable as qualified, based on a Level D validation.

ORGANO-PHOSPHORUS PESTICIDES - SDG 9905G510 only- SW846 METHOD 8141

I-Sampling Documentation
Chain-of-custody record indicates that the samples were received in good condition within the acceptable temperature range. No qualifiers were assigned.

II-Holding Times
The samples were analyzed within the holding periods between sampling and extraction and extraction and analysis except for BHGLAOC015001-05RE. The re-extraction was performed on day 21 after sampling. All compounds for this sample were J/UJ qualified.

III-Initial Calibration
There were no qualifications for initial calibration problems.

IV-Continuing Calibration
Famphur was R-qualified for BHGLAOC015001-05RE because %D>15 for the second-source calibrations standard.

V- Blanks
There were no detects in either the method blank or the equipment blank.

VI-System Monitoring Compound (surrogate)
Surrogate spike recoveries for the analyses met the acceptance criteria except for BHGLAOC15001-05. Both surrogates had low recoveries. The sample was re-extracted. All data for this original analytical run were J/UJ qualified.

VII-Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
No MS/MSD was analyzed with this SDG No qualifiers were assigned.

VIII-Laboratory Control Sample (LCS)
The LCSs for this SDG had recoveries within the control limits. No qualifiers were assigned.

IX- Field Duplicates
There were no field duplicates in this SDG.

X-Overall Assessment of the Data
The sample data in this SDG are acceptable as qualified, based on a Level D validation. Sample BHGLAOC015001-05RE had all compounds Z-qualified. The validator, using professional, determined which data to use. The original data for the above sample reported an unconfirmed thionazin value. This value was J-qualified for this reason. It was also F-flagged because it was a detect less than the reporting limit. Detects accepted without qualification were assigned "=".

POLYCHLORINATED DIBENZO-P-DIOXINS/DIBENZOFURANS- SDG 9905G510 only- SW846 METHOD 8280

I-Sampling Documentation
The samples were received in Philadelphia at 8 degrees Centigrade. Per the QAPP, no qualifiers were assigned.

II-Holding Times
Samples were extracted and analyzed within the holding times. No qualifiers were assigned.

III-Calibrations
The initial and continuing calibrations met the acceptance criteria No qualifiers were assigned.

IV-Blanks
The method blank and the equipment blank had no reported detects No qualifiers were assigned.

V-Internal Standards
The internal standards met the acceptance criteria. No qualifiers were assigned.

VII-Surrogates
The surrogate recoveries were acceptable, no qualifiers were assigned.

VII-Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
No MS/MSD was analyzed with this SDG.

VIII-Laboratory Control Sample (LCS)
The recoveries for LCS were within the control limits. No action was taken.

IX-Field Duplicates
There were no field duplicates.

X-Overall Assessment of the Data
The data are acceptable as qualified.

ETHYLENE GLYCOL BY GC/FID-SDG 9905G510 only

I-Sampling Documentation
The samples were received in Pensacola at 2 degrees Centigrade. No qualifiers were assigned.

II-Holding Times
Samples were extracted and analyzed within the holding times. No qualifiers were assigned.

III-Calibrations
The initial and continuing calibrations met the acceptance criteria. No qualifiers were assigned.

IV-Blanks
The method blank and the equipment blank had no reported detects. No qualifiers were assigned.

V-Surrogates
No surrogates were added, based on available information.

VI-Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
Sample BHGLSWMU 36001-02 was analyzed as the MS/MSD. Recoveries and RPDs were within the control limits, no qualifiers were assigned.

VII-Laboratory Control Sample (LCS)
The recoveries for LCS were within the control limits. No action was taken.

VIII-Field Duplicates
There was one field duplicate. The identification of the original sample was not provided. A laboratory duplicate was analyzed for BHGLSWMU 36001-01, there were no problems, no qualifiers were assigned.

IX-Overall Assessment of the Data
The data are acceptable as qualified.

HERBICIDES-SDG 9905G510 only-SW846 METHOD 8150

I-Sampling Documentation
The samples were received in Chicago at 2-3 degrees Centigrade No qualifiers were assigned

II-Holding Times
Samples were extracted and analyzed within the holding times No qualifiers were assigned.

III-Calibrations
The initial and continuing calibrations met the acceptance criteria. No qualifiers were assigned.

IV-Blanks
No target compounds were reported in the method blank or the equipment blank No qualifiers were assigned.

V-Surrogates
There were no outliers for the one surrogate. No qualifiers were assigned

VI-Matrix Spike (MS)/Matrix Spike Duplicate (MSD)
There were no MS/MSD analyses performed; no qualifiers were assigned.

VII-Laboratory Control Sample (LCS)
The recoveries for LCS were within the control limits No action was taken.

VIII-Field Duplicates
There was no field duplicate analyzed for herbicides.

IX-Overall Assessment of the Data
The data are acceptable as qualified.

WET CHEMISTRY-CYANIDE, SULFIDE, pH

pH SW846 METHOD 9045C:

Sample EB060799 (SDG 9906G678) was analyzed for pH. There were no quality problems; no qualifiers were assigned.

Samples BHGLSWMU-36001-01-04; 36002-01-03; 360003-01-03; and DUP13 were analyzed for pH. There were no quality problems; no qualifiers were assigned.

CYANIDE:

Six samples in SDG 9905G510 were analyzed for cyanide. There were no quality problems; no qualifiers were assigned.

SULFIDE, SW METHOD 9030A:

Samples BHGLAOC015001-01, -02, -03, -04, -05, and EB052499 were analyzed for sulfide There were no quality problems; no qualifiers were assigned

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G478

Client: HydroGeoLogic, Inc. Date: September 19, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU16001-01	9905G478-001	Soil
BHGLSWMU16001-02	9905G478-002	Soil
BHGLSWMU16001-03	9905G478-003	Soil
BHGLSWMU16001-04	9905G478-004	Soil
BHGLSWMU16001-05	9905G478-005	Soil
BHGLSWMU16002-01	9905G478-006	Soil
BHGLSWMU16002-02	9905G478-007	Soil
BHGLSWMU16002-03	9905G478-008	Soil
BHGLSWMU16002-04	9905G478-009	Soil
DUP07	9905G478-010	Soil
TB052099	9905G478-011	Water
EB052099	9905G478-012	Water

Holding Times - All samples were analyzed within the recommended holding time of 14 days for preserved water and soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 05/12/99-05/14/99 and 03/09/99-05/31/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/28/99 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 06/01/99 exhibited a high %D value for dichlorodifluoromethane of 49.1%. Dichlorodifluoromethane has been rejected (R) in samples BHGLSWMU16001-01, BHGLSWMU16001-02, BHGLSWMU16001-03, BHGLSWMU16001-04, BHGLSWMU16001-05, BHGLSWMU16002-02, BHGLSWMU16002-03, BHGLSWMU16002-04, and DUP07.

The continuing calibration analyzed on 06/02/99 exhibited high %D values for dichlorodifluoromethane and trichlorofluoromethane of 65.1% and 38.2%, respectively. Both compounds have been rejected (R) in sample BHGLSWMU16002-01.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples VBLKWPBS and VBLKWNBS exhibited acceptable %R values. No qualifications were required.

LCS sample VBLKWFBS exhibited a low %R value for 1,1-dichloroethene of 74%. 1,1-Dichloroethene has been rejected (R) in samples TB052099 and EB052099.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks VBLKWF (05/28/99), VBLKWP (06/01/99), and VBLKWN (06/02/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Trip blank TB052099 was free of contamination. No qualifications were required.

Equipment blank EB052099 exhibited methylene chloride and toluene contamination at 0.7 ug/L and 2.0 ug/L, respectively. Toluene has been qualified (U) in sample BHGLSWMU16001-01.

Field Duplicates - Field duplicate results for samples BHGLSWMU16001-04 and DUP07 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the field blanks and TICs sections of this report with the exception of several compounds which were rejected due to calibration and LCS problems. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG: 9905G478					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU16001-01	Dichlorodifluoromethane	7	U	7	R
	Toluene	4	J	7	U
	Ethylbenzene	2	J	2	F
	o-Xylene	7	J	7	F
BHGLSWMU16001-02	Dichlorodifluoromethane	5	U	5	R
	p,m-Xylene	2	J	2	F
BHGLSWMU16001-03	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU16001-04	Dichlorodifluoromethane	4	U	4	R
BHGLSWMU16001-05	Dichlorodifluoromethane	4	U	4	R
BHGLSWMU16002-01	Dichlorodifluoromethane	7	U	7	R
	Trichlorofluoromethane	7	U	7	R
BHGLSWMU16002-02	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU16002-03	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU16002-04	Dichlorodifluoromethane	5	U	5	R
DUP07	Dichlorodifluoromethane	5	U	5	R
TB052099	1,1-Dichloroethene	0.5	U	0.5	R
EB052099	1,1-Dichloroethene	0 5	U	0.5	R

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G478

Client. HydroGeoLogic, Inc. Date: September 19, 1999

Laboratory: Severn Trent, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU16001-01	9905G478-001	Soil
BHGLSWMU16001-01MS	9905G478-001MS	Soil
BHGLSWMU16001-01MSD	9905G478-001MSD	Soil
BHGLSWMU16001-02	9905G478-002	Soil
BHGLSWMU16001-03	9905G478-003	Soil
BHGLSWMU16001-04	9905G478-004	Soil
BHGLSWMU16001-05	9905G478-005	Soil
BHGLSWMU16002-01	9905G478-006	Soil
BHGLSWMU16002-02	9905G478-007	Soil
BHGLSWMU16002-03	9905G478-008	Soil
BHGLSWMU16002-04	9905G478-009	Soil
DUP07	9905G478-010	Soil
EB052099	9905G478-012	Water

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/24/99-05/26/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/27/99 and 06/01/99 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample SBLKR1BS exhibited acceptable %R values. No qualifications were required.

LCS sample SBLKROBS exhibited a high %R value for pyrene of 144%, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU16001-01 exhibited high RPD values for hexachlorocyclopentadiene and benzoic acid of 38% and 56%, respectively, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks SBLKR1 (05/25/99) and SBLKRO (05/27/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB052099 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the table below. Naphthalene has been qualified (J/UJ) in both samples.

Compound	BHGLSWMU16001-04 ug/kg	DUP07 ug/kg	RPD
Naphthalene	ND	1200	200
Pentachlorophenol	ND	350J	NC

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the field duplicate, TICs, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles SDG. 9905G478					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU16001-04	Naphthalene	370	U	370	UJ
BHGLSWMU16002-01	Naphthalene	180	J	180	F
	Acenaphthene	180	J	180	F
	Dibenzofuran	190	J	190	F
	Fluorene	270	J	270	F
	Anthracene	280	J	280	F
	Indeno(1,2,3-cd)pyrene	440	J	440	F
	Dibenzo(a,h)anthracene	85	J	85	F
	Benzo(g,h,i)perylene	300	J	300	F
DUP07	Naphthalene	1200	-	1200	J
	Pentachlorophenol	350	J	350	F

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TAL METALS
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G478

Client: HydroGeoLogic, Inc. Date: September 21, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU16001-01	9905G478-001	Soil
BHGLSWMU16001-02	9905G478-002	Soil
BHGLSWMU16001-03	9905G478-003	Soil
BHGLSWMU16001-04	9905G478-004	Soil
BHGLSWMU16001-05	9905G478-005	Soil
BHGLSWMU16002-01	9905G478-006	Soil
BHGLSWMU16002-02	9905G478-007	Soil
BHGLSWMU16002-03	9905G478-008	Soil
BHGLSWMU16002-04	9905G478-009	Soil
DUP07	9905G478-010	Soil
EB052099	9905G478-012	Water

Holding Times: All samples were extracted and analyzed within the recommended holding time of 28 days for mercury and 180 days for all other metals as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration: All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks: The water preparation blank PBW (06/09/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Antimony, beryllium, cadmium, nickel, and thallium have been qualified (UJ) in sample EB052099. Copper has been qualified (U) in sample EB052099.

The soil preparation blank PBS (06/09/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic has been qualified (J) in samples BHGLSWMU16001-03, BHGLSWMU16001-04, BHGLSWMU16001-05, BHGLSWMU16002-03, BHGLSWMU16002-04, and DUP07. Cadmium has been qualified (J) in all samples except BHGLSWMU16001-02 and

BHGLSWMU16002-01. Tin has been qualified (U) in all samples except BHGLSWMU16001-02 and BHGLSWMU16001-04.

Field and equipment blanks: Equipment blank EB052099 exhibited barium and tin contamination at 0.47 ug/L and 6.5 ug/L, respectively, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

ICP Interference Check Sample: All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS: The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions: An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike: A matrix spike sample was not analyzed with this data package.

Matrix Spike Duplicate: A matrix duplicate sample was not analyzed with this data package.

Field Duplicates: Field duplicate results are summarized in the following table. Copper and zinc have been qualified (J) in both samples.

Compound	BHGLSWMU16001-04 mg/kg	DUP07 mg/kg	RPD
Arsenic	1.7	2.0	16
Barium	45.8	40 9	11
Beryllium	0.29	0.26	11
Cadmium	0 15	0.14	7
Chromium	7.1	5 6	24
Cobalt	1.7	1.7	0
Copper	6.8	2 8	83*
Lead	6 2	4.3	36
Nickel	3.5	3 1	12
Silver	0.29	0.07U	NC
Tin	4.6	1.6U	NC
Vanadium	11 6	12.0	3
Zinc	20 5	9.9	30*

Graphite Furnace Atomic Absorption (GFAA) Analysis: Several samples exhibited a postdigestion spike for selenium, silver, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ).

Compound Quantitation: All results between the MDL and the PQL have been qualified (F).

Comments: The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, field duplicates, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table: The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals SDG. 9905G478					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU16001-01	Cadmium	0 22	B	0.22	~~J~~ F
	Cobalt	4.3	B	4 3	F
	Thallium	0.13	UW	0 13	UJ
	Tin	1 7	B	1.7	U
BHGLSWMU16001-02	Antimony	0.40	B	0.40	F
	Cadmium	0.34	B	0.34	F
	Cobalt	4.1	B	4.1	F
	Selenium	0.12	UW	0.12	UJ
	Thallium	0 15	UW	0 15	UJ
	Tin	4.9	B	4.9	F
BHGLSWMU16001-03	~~Antimony~~ Arsenic (GW)	2.5	B	2.5	~~J~~ F
	Cadmium	0.11	B	0 11	~~J~~ F
	Copper	7 6	B	7 6	F
	Selenium	0 12	UW	0.12	UJ
	Silver	0.08	UW	0.08	UJ
	Tin	1.2	B	1 2	U
	Vanadium	21.6	B	21.6	F
	Zinc	23 1	B	23 1	F
BHGLSWMU16001-04	~~Antimony~~ Arsenic (GW)	1.7	B	1.7	~~J~~ F
	Cadmium	0 15	B	0 15	~~J~~ F
	Cobalt	1 7	B	1.7	F
	Copper	6.8	B	6.8	~~J~~ F
	Nickel	3.5	B	3 5	F
	Selenium	0.11	UW	0 11	UJ
	Silver	0.29	W	0.29	J
	Thallium	0.64	UW	0.64	UJ

Qualification Summary Table - Metals SDG: 9905G478					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Tin	4.6	B	4.6	F
	Vanadium	11 6	B	11.6	F
	Zinc	20.5	B	20 5	~~J~~ F
BHGLSWMU16001-05	~~Antimony~~ Arsenic (4W)	1.6	B	1 6	J F
	Cadmium	0.09	B	0.09	J F
	Chromium	5 6	B	5.6	F
	Cobalt	1.6	B	1.6	F
	Copper	4.1	B	4.1	F
	Nickel	3.7	B	3.7	F
	Selenium	0.13	UW	0.13	UJ
	Silver	0.08	UW	0 08	UJ
	Tin	0.94	B	0.94	U
	Vanadium	14.9	B	14 9	F
	Zinc	12.2	B	12 2	F
BHGLSWMU16002-01	Cadmium	0.35	B	0.35	F
	Cobalt	4 0	B	4.0	F
	Copper	8 7	B	8.7	F
	Nickel	8.8	B	8.8	F
	Silver	0 09	UW	0.09	UJ
	Thallium	0 18	UW	0 18	UJ
	Tin	1.8	B	1.8	U
	Vanadium	23.9	B	23.9	F
BHGLSWMU16002-02	Cadmium	0 19	B	0.19	J F
	Cobalt	3.6	B	3.6	F
	Copper	5 4	B	5.4	F
	Selenium	0.12	UW	0 12	UJ
	Silver	0 08	UW	0 08	UJ
	Thallium	0.15	UW	0.15	UJ
	Tin	1.4	B	1 4	U
BHGLSWMU16002-03	Arsenic	3.2	B	3.2	J F
	Cadmium	0 07	B	0.07	J F
	Cobalt	3 3	B	3 3	F
	Copper	4.4	B	4 4	F
	Nickel	6.6	B	6.6	F
	Selenium	0.12	UW	0 12	UJ
	Silver	0 08	UW	0.08	UJ
	Thallium	0 15	UW	0 15	UJ
	Tin	0.95	B	0 95	U
	Vanadium	14.6	B	14.6	F
	Zinc	14 8	B	14.8	F
BHGLSWMU16002-04	Arsenic	0.30	B	0.30	J F
	Cadmium	0.15	B	0.15	J F
	Chromium	7 2	B	7.2	F
	Cobalt	1.6	B	1.6	F
	Copper	1 8	B	1.8	F
	Nickel	3.1	B	3.1	F
	Thallium	0 68	UW	0.68	UJ
	Tin	0.98	B	0.98	U

Qualification Summary Table - Metals SDG 9905G478					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Vanadium	8 4	B	8.4	F
	Zinc	11 6	B	11.6	F
DUP07	Arsenic	2 0	B	2.0	~~X~~ F
	Cadmium	0.14	B	0.14	~~X~~ F
	Chromium	5.6	B	5.6	F
	Cobalt	1.7	B	1.7	F
	Copper	2 8	B	2.8	~~X~~ F
	Nickel	3.1	B	3.1	F
	Selenium	0.11	UW	0.11	UJ
	Thallium	0 13	UW	0.13	UJ
	Tin	1.6	B	1.6	U
	Vanadium	12.0	B	12.0	F
	Zinc	9 9	B	9 9	~~X~~ F
EB052099	Antimony	2.2	U	2.2	UJ
	Barium	0.47	B	0 47	F
	Beryllium	0.30	U	0.30	UJ
	Cadmium	0.30	U	0.30	UJ
	Copper	1.4	B	1.4	U
	Nickel	1 7	U	1.7	UJ
	Selenium	1.7	UW	1.7	UJ
	Thallium	2 5	U	2.5	UJ
	Tin	6 5	B	6 5	F

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G491

Client: HydroGeoLogic, Inc. Date: September 21, 1999

Laboratory: Severn Trent, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
EB052199	9905G491-002	Water
BHGLSWMU16003-01	9905G491-003	Soil
BHGLSWMU16003-02	9905G491-004	Soil
BHGLSWMU16003-03	9905G491-005	Soil
BHGLSWMU16003-04	9905G491-006	Soil
BHGLSWMU16004-01	9905G491-007	Soil
BHGLSWMU16004-02	9905G491-008	Soil
BHGLSWMU16004-03	9905G491-009	Soil
BHGLSWMU16004-03MS	9905G491-009MS	Soil
BHGLSWMU16004-03MSD	9905G491-009MSD	Soil
DUP08	9905G491-010	Soil
BHGLSWMU16004-04	9905G491-011	Soil
BHGLSWMU34001-01	9905G491-012	Soil
BHGLSWMU34001-02	9905G491-013	Soil
BHGLSWMU34001-03	9905G491-014	Soil
BHGLSWMU34002-01	9905G491-015	Soil
BHGLSWMU34002-02	9905G491-016	Soil
BHGLSWMU34002-01MS	9905G491-016MS	Soil
BHGLSWMU34002-01MSD	9905G491-016MSD	Soil
DUP12	9905G491-017	Soil

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/24/99-05/26/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/28/99, 06/01/99, and 06/02/99 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample SBLKROBS exhibited acceptable %R values. No qualifications were required.

LCS sample SBLKRPBS exhibited a high %R value for pyrene of 144%, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU16004-03 exhibited acceptable %R and RPD values. No qualifications were required.

MS/MSD sample BHGLSWMU34002-02 exhibited high RPD values for 2,4-dichlorophenol and hexachlorocyclopentadiene of 45% and 58%, respectively, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks SBLKRP (05/26/99) and SBLKRO (05/27/99) were free of contamination. No qualifications were required.

Field. equipment blank - Equipment blank EB052199 exhibited di-n-butylphthalate and acetophenone at 2 ug/L and 1 ug/L, respectively, however, all associated results are non-detect and no qualifications were required.

Field Duplicates - Field duplicate results for samples DUP08 and BHGLSWMU16003-03 are non-detect. No qualifications were required.

Field duplicate results for samples DUP12 and BHGLSWMU34001-02 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles
SDG: 9905G491

Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
EB052199	Di-n-butylphthalate	2	J	2	F
	Acetophenone	1	J	1	F
BHGLSWMU16003-04	Bis(2-ethylhexyl)phthalate	110	J	110	F
BHGLSWMU16004-01	Phenanthrene	66	J	66	F
	Fluoranthene	160	J	160	F
	Pyrene	72	J	72	F
	Benzo(a)anthracene	71	J	71	F
	Chrysene	85	J	85	F
	Benzo(b)fluoranthene	120	J	120	F
	Benzo(k)fluoranthene	47	J	47	F
	Benzo(a)pyrene	77	J	77	F
	Indeno(1,2,3-cd)pyrene	62	J	62	F
	Benzo(g,h,i)perylene	50	J	50	F
BHGLSWMU16004-03	Naphthalene	200	J	200	F
	2-Methylnaphthalene	160	J	160	F
	Bis(2-ethylhexyl)phthalate	60	J	60	F
DUP08- BHGLSWMU34001-01	Fluoranthene	~~70~~	~~J~~ U	~~70~~	F U
	Chrysene	~~76~~	~~J~~	~~76~~	F
	Benzo(b)fluoranthene	~~86~~	~~J~~	~~86~~	F
	Benzo(a)pyrene	~~43~~	~~J~~	~~43~~	F
	Indeno(1,2,3-cd)pyrene	~~55~~	~~J~~	~~55~~	F
	Benzo(g,h,i)perylene	~~50~~	~~J~~	~~50~~	F
	Benzoic Acid	430	~~J~~	430	F

Text

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G491

Client: HydroGeoLogic, Inc. Date: September 15, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer. Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
TB052199	9905G491-001	Water
EB052199	9905G491-002	Water
BHGLSWMU16003-01	9905G491-003	Soil
BHGLSWMU16003-02	9905G491-004	Soil
BHGLSWMU16003-03	9905G491-005	Soil
BHGLSWMU16003-04	9905G491-006	Soil
BHGLSWMU16004-01	9905G491-007	Soil
BHGLSWMU16004-02	9905G491-008	Soil
BHGLSWMU16004-03	9905G491-009	Soil
BHGLSWMU16004-03MS	9905G491-009MS	Soil
BHGLSWMU16004-03MSD	9905G491-009MSD	Soil
BHGLSWMU16004-03RE	9905G491-009RE	Soil
DUP08	9905G491-010	Soil
BHGLSWMU16004-04	9905G491-011	Soil
BHGLSWMU34001-01	9905G491-012	Soil
BHGLSWMU34001-02	9905G491-013	Soil
BHGLSWMU34001-03	9905G491-014	Soil
BHGLSWMU34002-01	9905G491-015	Soil
BHGLSWMU34002-02	9905G491-016	Soil
BHGLSWMU34002-01MS	9905G491-016MS	Soil
BHGLSWMU34002-01MSD	9905G491-016MSD	Soil
DUP12	9905G491-017	Soil

Holding Times - All samples were analyzed within the recommended holding time of 14 days for preserved water and soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 03/09/99-05/31/99 and 05/12/99-05/14/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/01/99 exhibited a high %D value for dichlorodifluoromethane of 25.3%. Dichlorodifluoromethane has been rejected (R) in samples TB052199 and EB052199.

The continuing calibration analyzed on 06/02/99 (0928) exhibited high %D values for dichlorodifluoromethane and trichlorofluoromethane of 65.1% and 38.2%, respectively. Both compounds have been rejected (R) in samples BHGLSWMU16003-01, BHGLSWMU16003-02, BHGLSWMU16003-04, BHGLSWMU16004-01, BHGLSWMU16004-02, and BHGLSWMU16004-03.

The continuing calibration analyzed on 06/02/99 (2039) exhibited a high %D value for dichlorodifluoromethane of 46.0%. Dichlorodifluoromethane has been rejected (R) in samples BHGLSWMU16003-03, BHGLSWMU16004-03RE, BHGLSWMU34001-01, BHGLSWMU34001-02, BHGLSWMU34001-03, BHGLSWMU34002-01, BHGLSWMU34002-02, and DUP12.

The continuing calibration analyzed on 06/03/99 exhibited high %D values for dichlorodifluoromethane and trichlorofluoromethane of 93.4% and 28.4%, respectively. Both compounds have been rejected (R) in samples BHGLSWMU16004-04 and DUP08.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples VBLKYUBS, VBLKAKBA, VBLKWNBS, and VBLKA1BS exhibited acceptable %R values. No qualifications were required.

LCS sample VBLKA1S exhibited a high %R value for dichlorodifluoromethane of 151%, however, all associated results are already rejected due to calibration problems and no further qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU16004-03 exhibited high MS/MSD %R values for 1,1,2,2-trichloroethane, 1,2,3-trichloropropane, and 1,2-dibromo-3-chloropropane of 154%/151%, 180%/184%, and 148%/147%, respectively, however, all associated results are non-detect and no qualifications were required.

MS/MSD sample BHGLSWMU34002-02 exhibited high MS/MSD %R values for dichlorodifluoromethane of 142%/151%, however, all associated results are already rejected due to calibration problems and no further qualifications were required.

Internal Standard (IS) Area Performance - Sample BHGLSWMU16004-03 exhibited a low area count for internal standard 1,4-dichlorobenzene-d4. All associated compounds have been qualified (UJ).

Method Blank - Method blanks VBLKYU (06/01/99), VBLKAK (06/02/99), VBLKWN (06/02/99), and VBLKA1 (06/03/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Trip blank TB052199 was free of contamination. No qualifications were required.

Equipment blank EB052199 exhibited methylene chloride and toluene contamination at 0.7 ug/L, and 0.2 ug/L, respectively, however, all associated results are non-detect and no qualifications were required.

Field Duplicates - Field duplicate results for samples BHGLSWMU16003-03 and DUP08 are non-detect. No qualifications were required.

Field duplicate results for samples BHGLSWMU34001-02 and DUP12 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the internal standard section of this report with the exception of two compounds which was rejected due to calibration problems in most samples. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG 9905G491					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
TB052199	Dichlorodifluoromethane	0 5	U	0 5	R
EB052199	Dichlorodifluoromethane	0.5	U	0.5	R
BHGLSWMU16003-01	Dichlorodifluoromethane	5	U	5	R
	Trichlorofluoromethane	4	U	4	R
BHGLSWMU16003-02	Dichlorodifluoromethane	5	U	5	R
	Trichlorofluoromethane	4	U	4	R
BHGLSWMU16003-03	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU16003-04	Dichlorodifluoromethane	5	U	5	R
	Trichlorofluoromethane	4	U	4	R
BHGLSWMU16004-01	Dichlorodifluoromethane	5	U	5	R
	Trichlorofluoromethane	4	U	4	R
BHGLSWMU16004-02	Dichlorodifluoromethane	5	U	5	R
	Trichlorofluoromethane	4	U	4	R
BHGLSWMU16004-03	Dichlorodifluoromethane	~~5~~ 4 (4.4)	U	~~5~~ 4	R
	Trichlorofluoromethane	4	U	4	R
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	4	U	4	UJ
	1,2-Dibromo-3-chloropropane	4	U	4	UJ
BHGLSWMU16004-03RE	Dichlorodifluoromethane	4	U	4	R
DUP08	Dichlorodifluoromethane	4	U	4	R
BHGLSWMU16004-04	Dichlorodifluoromethane	4	U	4	R
BHGLSWMU34-001-01	Dichlorodifluoromethane	6	U	6	R
BHGLSWMU34-001-02	Dichlorodifluoromethane	4	U	4	R
BHGLSWMU34-001-03	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU34-002-01	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU34-002-0~~1~~2	Dichlorodifluoromethane	5	U	5	R
DUP12	Dichlorodifluoromethane	4	U	4	R

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SEP 24 1999

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TAL METALS
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G491

Client: HydroGeoLogic, Inc. Date: September 21, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
EB052199	9905G491-002	Water
BHGLSWMU16003-01	9905G491-003	Soil
BHGLSWMU16003-02	9905G491-004	Soil
BHGLSWMU16003-03	9905G491-005	Soil
BHGLSWMU16003-04	9905G491-006	Soil
BHGLSWMU16004-01	9905G491-007	Soil
BHGLSWMU16004-02	9905G491-008	Soil
BHGLSWMU16004-03	9905G491-009	Soil
BHGLSWMU16004-03MS	9905G491-009MS	Soil
BHGLSWMU16004-03MSD	9905G491-009MSD	Soil
DUP08	9905G491-010	Soil
BHGLSWMU16004-04	9905G491-011	Soil
BHGLSWMU34001-01	9905G491-012	Soil
BHGLSWMU34001-02	9905G491-013	Soil
BHGLSWMU34001-03	9905G491-014	Soil
BHGLSWMU34002-01	9905G491-015	Soil
BHGLSWMU34002-02	9905G491-016	Soil
BHGLSWMU34002-01MS	9905G491-016MS	Soil
BHGLSWMU34002-01MSD	9905G491-016MSD	Soil
DUP12	9905G491-017	Soil

Holding Times: All samples were extracted and analyzed within the recommended holding time of 28 days for mercury and 180 days for all other metals as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required

Calibration: All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks: The water preparation blank PBW (06/09/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Antimony, beryllium, cadmium, nickel, and thallium have been qualified (UJ) in sample EB052199. Copper has been qualified (U) in sample EB052199.

The soil preparation blank PBS (06/10/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic has been qualified (UJ) in sample BHGLSWMU16004-04. Cadmium has been qualified (J) in all soil samples except BHGLSWMU16004-02. Cobalt and nickel have been qualified (J) in sample BHGLSWMU16004-04. Tin has been qualified (U) in all soil samples.

Field and equipment blank: Equipment blank EB052199 exhibited lead and tin contamination at 3.0 ug/L and 5.7 ug/L, however, all associated lead results are greater than 5X the blank concentration and all associated tin results have already been qualified due to method blank contamination. No qualifications were required.

ICP Interference Check Sample: All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS: The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions: An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike: Matrix spike sample BHGLSWMU16004-03 exhibited low %R values for antimony, arsenic, and thallium of 39.5%, 72.4%, and 58.8%, respectively, and a high %R value for chromium of 129.2%. Antimony, arsenic, and thallium have been qualified (J/UJ) in all soil samples. Chromium has been qualified (J) for positive results in all soil samples.

Matrix spike sample BHGLSWMU34002-02 exhibited low %R values for antimony, arsenic, lead, selenium, and thallium of 38.1%, 59.0%, 73.1%, 67.4%, and 62.9%, respectively. Antimony, arsenic, lead, selenium and thallium have been qualified (J/UJ) in all soil samples.

Matrix Spike Duplicate: Matrix duplicate sample BHGLSWMU16004-03 exhibited acceptable RPD values. No qualifications were required.

Matrix duplicate sample BHGLSWMU34002-02 exhibited acceptable RPD values. No qualifications were required.

Field Duplicates: Field duplicate results are summarized in the tables below. No qualifications were required.

Compound	BHGLSWMU16003-03 mg/kg	DUP08 mg/kg	RPD
Arsenic	4 1	5 0	20
Barium	38 2	44 7	16
Beryllium	0 41	0 46	12
Cadmium	0 11	0 16	37
Chromium	7.3	9.5	26
Cobalt	3.2	2.6	21
Copper	4.7	5.6	17
Lead	5.2	7 1	31
Nickel	6.4	6.8	6
Vanadium	17 2	21 4	22
Zinc	13 7	16 1	16

Compound	BHGLSWMU34001-02 mg/kg	DUP12 mg/kg	RPD
Arsenic	2 7	3.7	31
Barium	74 4	57.2	26
Beryllium	0 43	0 36	18
Cadmium	0 11	0 14	24
Chromium	7.8	5 9	28
Cobalt	2.8	3.2	13
Copper	3 4	2.8	19
Lead	8.0	6.3	24
Nickel	5.1	4.9	4
Vanadium	21 2	30.6	36
Zinc	12 4	10 6	16

Graphite Furnace Atomic Absorption (GFAA) Analysis: Several samples exhibited a postdigestion spike for selenium, silver, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ) unless already qualified due to matrix spike problems.

Compound Quantitation: All results between the MDL and the PQL have been qualified (F).

Comments: The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, matrix spike, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals SDG: 9905G491					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
EB052199	Antimony	2.2	U	2 2	UJ
	Beryllium	0.30	U	0.30	UJ
	Cadmium	0.30	U	0.30	UJ
	Copper	2 8	B	2 8	U
	Nickel	1.7	U	1.7	UJ
	Selenium	1.7	UW	1.7	UJ
	Thallium	2.5	U	2 5	UJ
	Vanadium	5.7	B	5 7	F
BHGLSWMU16003-01	Antimony	0.35	UN	0 35	UJ
	Arsenic	4.8	N	4.8	J
	Cadmium	0.08	B	0.08	J F
	Chromium	12.9	N	12.9	J
	Cobalt	3.8	B	3.8	F
	Copper	7.1	B	7.1	F
	Lead	9 5	N	9.5	J
	Selenium	0.15	UWN	0.15	UJ
	Thallium	0 17	UWN	0.17	UJ
	Tin	1.6	B	1.6	U
	Vanadium	23.8	B	23.8	F
	Zinc	20 8	B	20.8	F
BHGLSWMU16003-02	Antimony	0.36	UN	0.36	UJ
	Arsenic	4.0	BN	4.0	J F
	Cadmium	0.14	B	0 14	J F
	Chromium	10 1	N	10.1	J
	Cobalt	3.5	B	3 5	F
	Copper	6.0	B	6 0	F
	Lead	7.5	N	7 5	J
	Nickel	8.5	B	8.5	F
	Selenium	0.79	UN	0.79	UJ
	Thallium	0.19	UWN	0 19	UJ
	Tin	1.5	B	1 5	U
	Vanadium	21.4	B	21.4	F
	Zinc	18.1	B	18 1	F
BHGLSWMU16003-03	Antimony	0.40	UN	0.40	UJ
	Arsenic	4.1	BN	4.1	J F
	Barium	38 2	B	38 2	F
	Cadmium	0 11	B	0 11	J F
	Chromium	7.3	BN	7.3	J F
	Cobalt	3.2	B	3.2	F
	Copper	4.7	B	4.7	F
	Lead	5 2	N	5.2	J
	Nickel	6 4	B	6 4	F
	Selenium	0.14	UWN	0.14	UJ
	Thallium	0.17	UWN	0 17	UJ

Qualification Summary Table - Metals SDG: 9905G491					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Tin	1 6	B	1.6	U
	Vanadium	17 2	B	17.2	F
	Zinc	13.7	B	13.7	F
BHGLSWMU16003-04	Antimony	0.34	UN	0.34	UJ
	Arsenic	4.6	N	4.6	J
	Cadmium	0.12	B	0.12	J F
	Chromium	10 1	N	10.1	J
	Cobalt	3.4	B	3.4	F
	Copper	5.7	B	5.7	F
	Lead	6.8	N	6 8	J
	Nickel	7.7	B	7.7	F
	Selenium	0.79	UN	0.79	UJ
	Silver	0 10	UW	0.10	UJ
	Thallium	0 19	UWN	0 19	UJ
	Tin	1 5	B	1 5	U
	Vanadium	19.1	B	19.1	F
	Zinc	14.9	B	14.9	F
BHGLSWMU16004-01	Antimony	0 33	UN	0.33	UJ
	Arsenic	4 4	N	4.4	J
	Cadmium	0 21	B	0.21	J F
	Chromium	16 2	N	16.2	J
	Lead	17 4	N	17.4	J
	Selenium	0.29	UWN	0.29	UJ
	Silver	0 09	UW	0.09	UJ
	Thallium	0.17	UN	0 17	UJ
	Tin	1 7	B	1.7	U
BHGLSWMU16004-02	Antimony	0.39	UN	0 39	UJ
	Arsenic	6 2	N	6.2	J
	Cadmium	0.34	B	0 34	F
	Chromium	13 1	N	13.1	J
	Cobalt	5.3	B	5 3	F
	Copper	7.6	B	7.6	F
	Lead	9.9	N	9.9	J
	Mercury	0.03	B	0.03	F
	Selenium	0.17	UWN	0 17	UJ
	Silver	0.11	UW	0.11	UJ
	Thallium	0 20	UWN	0 20	UJ
	Tin	1 9	B	1.9	U
	Vanadium	26 7	B	26 7	F
	Zinc	22 8	B	22.8	F
BHGLSWMU16004-03	Antimony	0 32	UN	0 32	UJ
	Arsenic	3.9	BN	3.9	J F
	Cadmium	0 13	B	0.13	J F
	Chromium	5 0	BN	5 0	J F
	Cobalt	3 4	B	3.4	F
	Copper	5.0	B	5.0	F
	Lead	5 4	N	5.4	J
	Nickel	6.6	B	6 6	F
	Selenium	0.32	UWN	0 32	UJ

Qualification Summary Table - Metals SDG: 9905G491					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Silver	0.10	UW	0.10	UJ
	Thallium	0.19	UWN	0 19	UJ
	Tin	1 2	B	1.2	U
	Vanadium	19.7	B	19 7	F
	Zinc	11.2	B	11.2	F
DUP08	Antimony	0.37	UN	0.37	UJ
	Arsenic	5 0	N	5.0	J
	Cadmium	0.16	B	0 16	~~J~~ F
	Chromium	9.5	BN	9.5	~~J~~ F
	Cobalt	2.6	B	2.6	F
	Copper	5 6	B	5.6	F
	Lead	7 1	N	7 1	J
	Nickel	6.8	B	6 8	F
	Selenium	0.29	UWN	0.29	UJ
	Thallium	0.17	UWN	0.17	UJ
	Tin	1.7	B	1.7	U
	Vanadium	21.4	B	21.4	F
	Zinc	16 1	B	16.1	F
BHGLSWMU16004-04	Antimony	0.36	UN	0 36	UJ
	Arsenic	0 29	UN	0.29	UJ
	Beryllium	0 16	B	0 16	F
	Cadmium	0.15	B	0.15	~~J~~ F
	Chromium	4.8	BN	4 8	~~J~~ F
	Cobalt	0.62	B	0 62	~~J~~ F
	Copper	1.8	B	1.8	F
	Lead	4 4	N	4.4	J
	Nickel	2.1	B	2 1	~~J~~ F
	Selenium	0.30	UWN	0.30	UJ
	Thallium	0 18	UWN	0.18	UJ
	Tin	2 6	B	2.6	U
	Vanadium	4 8	B	4 8	F
	Zinc	7 8	B	7 8	F
BHGLSWMU34-001-01	Antimony	0 37	UN	0.37	UJ
	Arsenic	3.5	BN	3.5	~~J~~ F
	Cadmium	0 06	B	0.06	~~J~~ F
	Chromium	11.6	N	11 6	J
	Cobalt	4.9	B	4.9	F
	Copper	8.3	B	8.3	F
	Lead	11.1	N	11.1	J
	Selenium	0.18	BWN	0.18	~~J~~ F
	Thallium	0.19	UN	0.19	UJ
	Tin	1 6	B	1.6	U
	Vanadium	27 6	B	27.6	F
	Zinc	16.1	B	16.1	F
BHGLSWMU34-001-02	Antimony	0.36	UN	0.36	UJ
	Arsenic	2.7	BN	2.7	~~J~~ F
	Cadmium	0 11	B	0.11	~~J~~ F
	Chromium	7.8	BN	7 8	~~J~~ F
	Cobalt	2.8	B	2 8	F

Qualification Summary Table - Metals SDG· 9905G491					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Copper	3 4	B	3.4	F
	Lead	8 0	N	8.0	J
	Nickel	5 1	B	5.1	F
	Selenium	0.30	UWN	0.30	UJ
	Thallium	0 18	UWN	0.18	UJ
	Tin	1.3	B	1.3	U
	Vanadium	21.2	B	21.2	F
	Zinc	12.4	B	12.4	F
BHGLSWMU34-001-03	Antimony	0.39	UN	0.39	UJ
	Arsenic	4 3	BN	4.3	J F
	Barium	27.3	B	27 3	F
	Cadmium	0.14	B	0.14	J F
	Chromium	8.4	BN	8.4	J F
	Cobalt	2.4	B	2.4	F
	Copper	3.6	B	3.6	F
	Lead	4.4	N	4 4	J
	Nickel	4 8	B	4 8	F
	Selenium	0 30	UWN	0 30	UJ
	Thallium	0 18	UWN	0.18	UJ
	Tin	1.7	B	1.7	U
	Vanadium	10 1	B	10.1	F
	Zinc	9.4	B	9 4	F
BHGLSWMU34-002-01	Antimony	0 36	UN	0.36	UJ
	Arsenic	3 6	BN	3.6	J F
	Cadmium	0 07	B	0.07	J F
	Chromium	11.9	N	11.9	J
	Cobalt	5.3	B	5.3	F
	Copper	8 8	B	8 8	F
	Lead	12 8	N	12 8	J
	Selenium	0.25	BWN	0.25	J F
	Thallium	0.20	BWN	0.20	J F
	Tin	1 3	B	1.3	U
	Zinc	17 1	B	17.1	F
BHGLSWMU34-002-0L	Antimony	0 36	UN	0 36	UJ
	Arsenic	5.3	N	5 3	J
	Cadmium	0.06	B	0.06	J F
	Chromium	8.1	BN	8.1	J F
	Cobalt	3 2	B	3 2	F
	Copper	5 4	B	5 4	F
	Lead	7.2	N	7.2	J
	Nickel	7 0	B	7.0	F
	Selenium	0.13	UWN	0.13	UJ
	Thallium	0.15	UWN	0.15	UJ
	Tin	1 4	B	1 4	U
	Vanadium	21.9	B	21.9	F
	Zinc	16.1	B	16.1	F
DUP12	Antimony	0.34	UN	0 34	UJ
	Arsenic	3.7	BN	3.7	J F
	Cadmium	0 14	B	0 14	J F

Qualification Summary Table - Metals SDG. 9905G491					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Chromium	5.9	BN	5.9	~~J~~ F
	Cobalt	3 2	B	3 2	F
	Copper	2.8	B	2 8	F
	Lead	6 3	N	6.3	J
	Nickel	4.9	B	4.9	F
	Selenium	0.29	UWN	0.29	UJ
	Thallium	0 17	UWN	0.17	UJ
	Tin	1.6	B	1 6	U
	Zinc	10 6	B	10.6	F

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ETHYLENE GLYCOL by GC/FID
Method SOP 641 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G491

Client: HydroGeoLogic, Inc. Date: October 25, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
EB052199	905521-001	Soil
BHGLSWMU34001-01	905521-002	Soil
BHGLSWMU34001-02	905521-003	Soil
BHGLSWMU34001-03	905521-004	Soil
BHGLSWMU34002-01	905521-005	Soil
BHGLSWMU34002-02	905521-006	Soil
BHGLSWMU34002-02MS	905521-006MS	Soil
BHGLSWMU34002-02MSD	905521-006MSD	Soil
DUP12	905521-007	Soil

Holding Times - All samples were analyzed within the recommended holding time of 30 days as specified in SOP 641. No qualifications were required.

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

MS/MSD - MS/MSD sample BHGLSWMU34002-02 exhibited acceptable %R and RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

Method Blank - The method blank was free of contamination. No qualifications were required.

Trip, Field and Equipment Blanks - Equipment blank EB052199 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the table below. No qualifications were required.

Compound	BHGLSWMU34001-02 mg/kg	DUP12 mg/kg	RPD
None	ND	ND	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Ethylene Glycol SDG: 9905G491					
Sample No.	Compound(s)	Reported		Validated	
		Conc. ug/L	Qualifier	Conc ug/L	Qualifier
None Qualified	--	--	--	--	--

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TOTAL PETROLEUM HYDROCARBONS
Texas Method 1005 (Rev. 4/98) - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G491

Client: HydroGeoLogic, Inc. Date: October 25, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
EB052199	9905G491	Water

Holding Times - The sample was analyzed outside the recommended holding time of 7 days for water samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. All results for sample EB052199 have been qualified (J/UJ).

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - The LCS sample exhibited acceptable %R values. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Method Blank - The method blanks were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blanks EB052199 was free of contamination.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time section of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - TPH SDG· 9905G491					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
EB052199	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

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TOTAL PETROLEUM HYDROCARBONS
Texas Method 1005 (Rev. 4/98) - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G729

Client: HydroGeoLogic, Inc. Date: October 24, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU33001-01	906312-001	Soil
BHGLSWMU33001-02	906312-002	Soil
BHGLSWMU33001-03	906312-003	Soil
BHGLSWMU33001-04	906312-004	Soil
BHGLSWMU33002-01	906312-005	Soil
BHGLSWMU33002-02	906312-006	Soil
BHGLSWMU33002-03	906312-007	Soil
BHGLSWMU33002-03MS	906312-007MS	Soil
BHGLSWMU33002-03MSD	906312-007MSD	Soil
BHGLSWMU33002-04	906312-08	Soil
BHGLSWMU33003-01	906312-09	Soil
BHGLSWMU33003-02	906312-10	Soil

Holding Times - All samples were analyzed within the recommended holding time of 7 days for water samples and 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998 with the exception of samples BHGLSWMU33002-03, BHGLSWMU33002-04, BHGLSWMU33003-01 and BHGLSWMU33003-02. All results have been qualified (J/UJ) in these samples.

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - The LCS samples exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33002-03 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - The method blank was free of contamination. No qualifications were required.

Field, equipment blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time section of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - TPH SDG: 9906G729					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
BHGLSWMU33002-03	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU33002-04	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU33003-01	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU33003-02	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G729

Client. HydroGeoLogic, Inc. Date: September 23, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU33001-01	9906G729-001	Soil
BHGLSWMU33001-02	9906G729-002	Soil
BHGLSWMU33001-03	9906G729-003	Soil
BHGLSWMU33001-04	9906G729-004	Soil
BHGLSWMU33001-04MS	9906G729-004MS	Soil
BHGLSWMU33001-04MSD	9906G729-004MSD	Soil
BHGLSWMU33002-01	9906G729-005	Soil
BHGLSWMU33002-02	9906G729-006	Soil
BHGLSWMU33002-03	9906G729-007	Soil
BHGLSWMU33002-04	9906G729-008	Soil
BHGLSWMU33003-01	9906G729-009	Soil
BHGLSWMU33003-02	9906G729-010	Soil

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/24/99-06/22/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/29/99 exhibited a high %D value for benzoic acid of 45.9%. Benzoic acid has been rejected (R) in samples BHGLSWMU33001-01 and BHGLSWMU33001-02.

The continuing calibration analyzed on 06/30/99 exhibited a high %D value for 4,6-dinitro-2-methylphenol of 35.7%. 4,6-Dinitro-2-methylphenol has been rejected (R) in all samples except BHGLSWMU33001-01 and BHGLSWMU33001-02.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample SBLKTSBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33001-04 exhibited a high RPD value for 3,3'-dichlorobenzidine of 32%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank SBLKTS (06/21/99) exhibited bis(2-ethylhexyl)phthalate contamination at 37 ug/kg. Bis(2-ethylhexyl)phthalate has been qualified (U) in samples BHGLSWMU33001-03 and BHGLSWMU33002-01.

Field, equipment blank - Equipment blank EB060999 (from SDG 9906G705) exhibited di-n-butylphthalate contamination at 2 ug/L, however, all associated results are non-detect and no qualifications were required.

Equipment blank EB061099 (from SDG 9906G705) exhibited di-n-butylphthalate and acetophenone contamination at 2 ug/L and 1 ug/L, respectively, however, all associated results are non-detect and no qualifications were required.

Field Duplicates - Field duplicate results for samples BHGLSWMU33002-02 and DUP06 (from SDG 9906G705) are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blanks, TICs, and compound quantitation sections of this report with the exception of two compounds which were rejected due to calibration problems The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles SDG 9906G729					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
BHGLSWMU33001-01	Benzoic Acid	1900	U	1900	R
BHGLSWMU33001-02	Benzoic Acid	2000	U	2000	R
BHGLSWMU33001-03	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Bis(2-ethylhexyl)phthalate	57	BJ	390	U
BHGLSWMU33001-04	4,6-Dinitro-2-methylphenol	1900	U	1900	R
BHGLSWMU33002-01	4,6-Dinitro-2-methylphenol	1800	U	1800	R
	Fluoranthene	100	J	100	F
	Pyrene	95	J	95	F
	Butylbenzylphthalate	160	J	160	F
	Benzo(a)anthracene	57	J	57	F
	Chrysene	66	J	66	F
	Bis(2-ethylhexyl)phthalate	67	BJ	350	U
	Benzo(b)fluoranthene	84	J	84	F
	Benzo(k)fluoranthene	36	J	36	F
	Benzo(a)pyrene	61	J	61	F
	Indeno(1,2,3-cd)pyrene	68	J	68	F
	Benzo(g,h,i)perylene	48	J	48	F
BHGLSWMU33002-02	4,6-Dinitro-2-methylphenol	2000	U	2000	R
BHGLSWMU33002-03	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Indeno(1,2,3-cd)pyrene	49	J	49	F
BHGLSWMU33002-04	4,6-Dinitro-2-methylphenol	1900	U	1900	R
BHGLSWMU33003-01	4,6-Dinitro-2-methylphenol	1800	U	1800	R
BHGLSWMU33003-02	4,6-Dinitro-2-methylphenol	2000	U	2000	R

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METALS
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G729

Client: HydroGeoLogic, Inc. Date: September 23, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU33001-01	9906G729-001	Soil
BHGLSWMU33001-02	9906G729-002	Soil
BHGLSWMU33001-03	9906G729-003	Soil
BHGLSWMU33001-04	9906G729-004	Soil
BHGLSWMU33002-01	9906G729-005	Soil
BHGLSWMU33002-02	9906G729-006	Soil
BHGLSWMU33002-03	9906G729-007	Soil
BHGLSWMU33002-04	9906G729-008	Soil
BHGLSWMU33003-01	9906G729-009	Soil
BHGLSWMU33003-02	9906G729-010	Soil

Holding Times - All samples were extracted and analyzed within the recommended holding time of 180 days for all metals except 28 days for mercury as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration - All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks - The soil preparation blank PBS (07/19/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Antimony has been qualified (U) for positive results in all soil samples. Arsenic has been qualified (J) in samples BHGLSWMU33001-04, BHGLSWMU33002-03, BHGLSWMU33002-04, and BHGLSWMU33003-01. Beryllium has been qualified (J) in all samples except BHGLSWMU33002-02 and BHGLSWMU33003-02. Cadmium has been qualified (J) in samples BHGLSWMU33001-01 and BHGLSWMU33003-01. Cobalt has been qualified (J) in sample BHGLSWMU33002-04 Silver has been qualified (U) in samples BHGLSWMU33001-02, BHGLSWMU33002-01, BHGLSWMU33002-02, BHGLSWMU33002-03, BHGLSWMU33003-01, and BHGLSWMU33003-02. Tin has been qualified (U) in all soil samples.

Field and equipment blank - Equipment blank EB061099 (from SDG 9906G705) was free of contamination. No qualifications were required.

ICP Interference Check Sample - All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS - The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions - An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike - A matrix spike sample was not analyzed with this data package.

Matrix Spike Duplicate - A matrix duplicate sample was not analyzed with this data package.

Field Duplicates - Field duplicate results for samples BHGLSWMU33002-02 and DUP06 are summarized in SDG 9806G705.

Graphite Furnace Atomic Absorption (GFAA) Analysis - Several samples exhibited a postdigestion spike for silver, selenium, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ).

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals SDG. 9906G729					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU33001-01	Antimony	0 62	B	0 62	U
	Beryllium	0.51	-	0.51	J
	Cadmium	0.06	B	0.06	J
	Cobalt	3.6	B	3.6	F
	Copper	6.7	B	6.7	F
	Mercury	0.02	B	0.02	F
	Nickel	6.4	B	6.4	F
	Selenium	0 14	BW	0.14	F
	Thallium	0 15	UW	0 15	UJ
	Tin	1.1	B	1.1	U
BHGLSWMU33001-02	Antimony	0.69	B	0 69	U
	Beryllium	0.54	-	0 54	J
	Cobalt	4.5	B	4.5	F
	Copper	8.3	B	8.3	F
	Nickel	7 1	B	7 1	F
	Selenium	0 15	BW	0 15	F
	Silver	0.09	BW	0.09	UJ
	Tin	1.5	B	1.5	U
	Zinc	16 9	B	16 9	F
BHGLSWMU33001-03	Antimony	0.62	B	0.62	U
	Arsenic	3.7	B	3.7	F
	Beryllium	0.54	-	0.54	J
	Cobalt	4.0	B	4 0	F
	Copper	7.1	B	7.1	F
	Silver	0.08	UW	0.08	UJ
	Thallium	0.15	UW	0 15	UJ
	Tin	1.3	B	1.3	U
	Zinc	15 7	B	15.7	F
BHGLSWMU33001-04	Antimony	0.49	B	0.49	U
	Arsenic	1.7	B	1.7	J
	Barium	24.0	B	24.0	F
	Beryllium	0 25	-	0.25	J
	Chromium	5.0	B	5.0	F
	Cobalt	2.2	B	2.2	F
	Copper	4.5	B	4.5	F
	Nickel	5.4	B	5.4	F
	Silver	0.07	UW	0.07	UJ
	Thallium	0 14	UW	0.14	UJ
	Tin	0.70	B	0 70	U
	Vanadium	10.4	B	10.4	F
	Zinc	10.7	B	10.7	F
BHGLSWMU33002-01	Antimony	0 30	B	0 30	U
	Beryllium	0 35	-	0.35	J
	Cobalt	2.7	B	2.7	F
	Copper	6.1	B	6 1	F

Qualification Summary Table - Metals SDG· 9906G729					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Nickel	5.6	B	5.6	F
	Selenium	0.11	UW	0.11	UJ
	Silver	0.19	W	0.19	UJ
	Thallium	0.13	UW	0.13	UJ
	Tin	1.1	B	1.1	U
	Vanadium	17.7	B	17.7	F
BHGLSWMU33002-02	Antimony	0 53	B	0.53	U
	Selenium	0 13	UW	0.13	UJ
	Silver	0.11	BW	0.11	UJ
	Tin	1.5	B	1 5	U
	Zinc	15 6	B	15.6	F
BHGLSWMU33002-03	gw ~~Antimony~~ Arsenic	2 8	B	2.8	J
	Beryllium	0.59	-	0.59	J
	Cobalt	3 8	B	3.8	F
	Mercury	0.02	B	0.02	F
	Selenium	0 12	UW	0.12	UJ
	Silver	0.08	BW	0.08	UJ
	Tin	0.92	B	0.92	U
	Vanadium	17.6	B	17.6	F
	Zinc	16 6	B	16.6	F
BHGLSWMU33002-04	Antimony	0 46	B	0.46	U
	Arsenic	0.65	B	0 65	J
	Barium	12.1	B	12.1	F
	Beryllium	0.13	B	0.13	J
	Chromium	3.9	B	3.9	F
	Cobalt	1.1	B	1.1	J
	Copper	2 5	B	2.5	F
	Nickel	3 3	B	3.3	F
	Silver	0.08	UW	0 08	UJ
	Thallium	0 14	UW	0.14	UJ
	Tin	0.53	B	0.53	U
	Vanadium	6.5	B	6.5	F
	Zinc	6 9	B	6.9	F
BHGLSWMU33003-01	Antimony	0 30	B	0 30	U
	Arsenic	3.0	B	3.0	J
	Beryllium	0.55	-	0.55	J
	Cadmium	0.11	B	0.11	J
	Cobalt	3.6	B	3.6	F
	Copper	6.6	B	6 6	F
	Nickel	6 7	B	6.7	F
	Selenium	0.11	UW	0.11	UJ
	Silver	0.11	BW	0.11	UJ
	Thallium	0.14	UW	0.14	UJ
	Tin	1.1	B	1.1	U
	Zinc	18.9	B	18.9	F
BHGLSWMU33003-02	Antimony	0.52	B	0.52	U
	Cobalt	2.7	B	2.7	F
	Copper	7.3	B	7 3	F

Qualification Summary Table - Metals SDG· 9906G729					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
	Selenium	0.12	UW	0.12	UJ
	Silver	0 08	BW	0 08	UJ
	Thallium	0.14	UW	0 14	UJ
	Tin	1 4	B	1.4	U
	Zinc	21.1	B	21.1	F

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9906G729

Client: HydroGeoLogic, Inc. Date: September 23, 1999

Laboratory: Severn Trent Laboratories, Baltimore, MD Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU33001-01	9906147	Soil
BHGLSWMU33001-02	9906148	Soil
BHGLSWMU33001-03	9906149	Soil
BHGLSWMU33001-04	9906150	Soil
BHGLSWMU33002-01	9906151	Soil
BHGLSWMU33002-02	9906152	Soil
BHGLSWMU33002-03	9906153	Soil
BHGLSWMU33002-04	9906154	Soil
BHGLSWMU33003-01	9906155	Soil
BHGLSWMU33003-02	9906156	Soil
BHGLSWMU33003-02MS	9906156MS	Soil
BHGLSWMU33003-02MSD	9906156MSD	Soil

Holding Times - All samples were analyzed within the recommended holding time of 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/24/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/24/99 exhibited high %D values for 1-chlorohexane and isopropylbenzene of 97.9% and 28.0%, respectively. Both compounds have been rejected (R) in all samples.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample VLCS01 exhibited a low %R value for 1-chlorohexane of 2%, however, this compound has already been rejected (R) due to the continuing calibration and no further qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33003-02 exhibited low MS/MSD %R values for 1-chlorohexane of 0%/0%, however, this compound has already been rejected (R) due to the continuing calibration and no further qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required

Method Blank - Method blank VBLK01 (06/24/99) exhibited acetone contamination at 6 ug/kg. Acetone has been qualified (U) in all samples.

Trip, field, equipment blank - Trip blank TB061099 (from SDG 9906G705) was free of contamination. No qualifications were required.

Equipment blank EB061099 (from SDG 9906G705) was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the tables below. Methylene chloride has been qualified (J/UJ) in samples BHGLSWMU33002-02 and DUP06 unless already qualified (F).

Compound	BHGLSWMU33002-02 ug/kg	DUP06 ug/kg (SDG 9906G705)	RPD
Methylene Chloride	4	2U	200

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TICs sections of this report with the exception of two compounds which were rejected due to calibration problems in all samples. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG. 9906G729					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU33001-01	Methylene Chloride	4	J	4	F
	Acetone	22	B	22	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33001-02	Methylene Chloride	4	J	4	F
	Acetone	55	B	55	U
	1-Chlorohexane	5	U	5	R
	Isopropylbenzene	5	U	5	R
BHGLSWMU33001-03	Methylene Chloride	3	J	3	F
	Acetone	32	B	32	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33001-04	Methylene Chloride	4	J	4	F
	Acetone	8	JB	8	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33002-01	Methylene Chloride	4	J	4	F
	Acetone	8	JB	8	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33002-02	Methylene Chloride	4	J	4	F
	Acetone	6	JB	8	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33002-03	Methylene Chloride	4	J	4	F
	Acetone	7	JB	8	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33002-04	Methylene Chloride	4	J	4	F
	Acetone	6	JB	8	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R
BHGLSWMU33003-01	Methylene Chloride	4	J	4	F
	Acetone	5	JB	8	U
	1-Chlorohexane	4	U	4	R

Qualification Summary Table - Volatiles SDG: 9906G729					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Isopropylbenzene	4	U	4	R
BHGLSWMU33003-02	Methylene Chloride	4	J	4	F
	Acetone	19	JB	19	U
	1-Chlorohexane	4	U	4	R
	Isopropylbenzene	4	U	4	R

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TOTAL PETROLEUM HYDROCARBONS
Texas Method 1005 (Rev. 4/98) - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G705

Client: HydroGeoLogic, Inc. Date: October 24, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU39001-01	906311-001	Soil
BHGLSWMU39001-02	906311-002	Soil
EB060999	906311-003	Water
BHGLSWMU33003-03	906311-004	Soil
BHGLSWMU33003-03MSD	906311-004MS	Soil
BHGLSWMU33033-03MSD	906311-004MSD	Soil
BHGLSWMU33003-04	906311-005	Soil
DUP06	906311-006	Soil
EB061099	906311-007	Water

Holding Times - All samples were analyzed outside the recommended holding time of 7 days for water samples and 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998 with the exception of samples EB060999 and EB061099. All results for all samples have been qualified (J/UJ).

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - information not provided by the laboratory.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - The LCS samples exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33003-03 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - The method blanks were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blanks EB060999 and EB061099 were free of contamination.

Field Duplicates - Field duplicate samples DUP06 and BHGLSWMU33002-02 (in SDG 9906G677) were non-detect. No qualifications were required.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time section of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - TPH SDG: 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
EB060999	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
EB061099	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9906G705

Client: HydroGeoLogic, Inc. Date: September 22, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU11001-01	9906G705-001	Soil
BHGLSWMU11001-02	9906G705-002	Soil
BHGLSWMU11001-03	9906G705-003	Soil
BHGLSWMU11001-04	9906G705-004	Soil
BHGLSWMU11002-01	9906G705-005	Soil
BHGLSWMU11002-02	9906G705-006	Soil
BHGLSWMU11002-03	9906G705-007	Soil
DUP05	9906G705-008	Soil
BHGLSWMU39001-01	9906G705-009	Soil
BHGLSWMU39001-02	9906G705-010	Soil
TB060999	9906G705-011	Water
EB060999	9906G705-012	Water
BHGLSWMU33003-03	9906G705-013	Soil
BHGLSWMU33003-03MS	9906G705-013MS	Soil
BHGLSWMU33003-03MSD	9906G705-013MSD	Soil
BHGLSWMU33003-04	9906G705-014	Soil
DUP06	9906G705-015	Soil
EB061099	9906G705-016	Water
TB061099	9906G705-017	Water

Holding Times - All samples were analyzed within the recommended holding time of 14 days for preserved water and soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 03/09/99-05/31/99, 05/12/99-05/14/99, and 05/31/99-06/23/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/20/99 exhibited high %D values for dichlorodifluoromethane, bromomethane, p,m-xylene, and styrene of 53.7%, 25.7%, 25.8%, and 26.6%, respectively. All four compounds have been rejected (R) in samples BHGLSWMU11001-01, BHGLSWMU11001-02, BHGLSWMU11001-03, BHGLSWMU11001-04, BHGLSWMU11002-01, BHGLSWMU11002-02, and BHGLSWMU11002-03.

The continuing calibration analyzed on 06/22/99 exhibited high %D values for dichlorodifluoromethane and chloromethane of 49.4% and 27.7%, respectively. Both compounds have been rejected (R) in all water samples.

The continuing calibration analyzed on 06/23/99 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples VBLKWNBS and VBLKWJBS exhibited acceptable %R values. No qualifications were required.

LCS sample VBLKRBBS exhibited a high %R value for dichlorodifluoromethane of 137%, however, the associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33003-03 exhibited acceptable %R and RPD values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks VBLKRB (06/20/99), VBLKWN (06/22/99), and VBLKJB (06/24/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Trip blank TB060999 was free of contamination. No qualifications were required.

Trip blank TB061099 was free of contamination. No qualifications were required.

Equipment blank EB060999 exhibited methylene chloride contamination at 0.5 ug/L, however, all associated results are non-detect and no qualifications were required.

Equipment blank EB061099 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the tables below. Acetone has been qualified (J/UJ) in samples BHGLSWMU11001-03 and DUP05. Methylene chloride has been qualified (J/UJ) in samples BHGLSWMU33002-02 and DUP06.

Compound	BHGLSWMU11001-03 ug/kg	DUP05 ug/kg	RPD
Acetone	5U	8	200

Compound	BHGLSWMU33002-02 ug/kg (SDG 9906G729)	DUP06 ug/kg	RPD
Methylene Chloride	4	2U	200

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the field duplicate and TICs sections of this report with the exception of several compounds which were rejected due to calibration problems. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG: 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
BHGLSWMU11001-01	Dichlorodifluoromethane	6	U	6	R
	Bromomethane	6	U	6	R
	p,m-Xylene	6	U	6	R
	Styrene	2	U	2	R
BHGLSWMU11001-02	Dichlorodifluoromethane	5	U	5	R
	Bromomethane	5	U	5	R
	p,m-Xylene	5	U	5	R
	Styrene	2	U	2	R
BHGLSWMU11001-03	Dichlorodifluoromethane	5	U	5	R

Qualification Summary Table - Volatiles SDG. 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Bromomethane	5	U	5	R
	Acetone	5	U	5	UJ
	p,m-Xylene	5	U	5	R
	Styrene	2	U	2	R
BHGLSWMU11001-04	Dichlorodifluoromethane	4	U	4	R
	Bromomethane	4	U	4	R
	p,m-Xylene	4	U	4	R
	Styrene	2	U	2	R
BHGLSWMU11002-01	Dichlorodifluoromethane	6	U	6	R
	Bromomethane	6	U	6	R
	p,m-Xylene	6	U	6	R
	Styrene	2	U	2	R
BHGLSWMU11002-02	Dichlorodifluoromethane	5	U	5	R
	Bromomethane	5	U	5	R
	p,m-Xylene	5	U	5	R
	Styrene	2	U	2	R
BHGLSWMU11002-03	Dichlorodifluoromethane	5	U	5	R
	Bromomethane	5	U	5	R
	p,m-Xylene	5	U	5	R
	Styrene	2	U	2	R
DUP05	Acetone	8	-	8	J
DUP06	Methylene Chloride	2	U	2	UJ
TB060999	Dichlorodifluoromethane	0 5	U	0.5	R
	Chloromethane	0.5	U	0 5	R
EB060999	Dichlorodifluoromethane	0.5	U	0.5	R
	Chloromethane	0 5	U	0 5	R
EB061099	Dichlorodifluoromethane	0.5	U	0.5	R
	Chloromethane	0.5	U	0 5	R
TB061099	Dichlorodifluoromethane	0.5	U	0.5	R
	Chloromethane	0.5	U	0.5	R

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G705

Client: HydroGeoLogic, Inc. Date: September 21, 1999

Laboratory: Severn Trent, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU11001-01	9906G705-001	Soil
BHGLSWMU11001-02	9906G705-002	Soil
BHGLSWMU11001-03	9906G705-003	Soil
BHGLSWMU11001-04	9906G705-004	Soil
BHGLSWMU11002-01	9906G705-005	Soil
BHGLSWMU11002-02	9906G705-006	Soil
BHGLSWMU11002-03	9906G705-007	Soil
DUP05	9906G705-008	Soil
BHGLSWMU39001-01	9906G705-009	Soil
BHGLSWMU39001-02	9906G705-010	Soil
EB060999	9906G705-012	Water
BHGLSWMU33003-03	9906G705-013	Soil
BHGLSWMU33003-03MS	9906G705-013MS	Soil
BHGLSWMU33003-03MSD	9906G705-013MSD	Soil
BHGLSWMU33003-04	9906G705-014	Soil
DUP06	9906G705-015	Soil
EB061099	9906G705-016	Water

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/01/99-06/15/99 and 02/24/99-06/22/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/15/99, 06/24/99, 06/28/99, and 06/29/99 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 06/17/99 exhibited a high %D value for benzoic acid of 40.1%. Benzoic acid has been rejected (R) in sample EB060999.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples SBLKRBBS, SBLKTHBS and SBLKTMBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU33003-03 exhibited acceptable %R and RPD values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks SBLKSR (06/14/99), SBLKTH (06/16/99) and SBLKTM (06/16/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB060999 exhibited di-n-butylphthalate contamination at 2 ug/L, however, all associated results are non-detect and no qualifications were required.

Equipment blank EB061099 exhibited di-n-butylphthalate and acetophenone contamination at 2 ug/L and 1 ug/L, respectively, however, all associated results are non-detect and no qualifications were required.

Field Duplicates - Field duplicate results for samples BHGLSWMU11001-03 and DUP05 are non-detect No qualifications were required.

Field duplicate results for samples BHGLSWMU33002-02 (from SDG 9906G729) and DUP06 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs and compound quantitation sections of this report with the exception of one compound which was rejected in one sample due to calibration probelms. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles SDG. 9906G705					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU39001-01	Bis(2-ethylhexyl)phthalate	53	J	53	F
EB060999	Di-n-butylphthalate	2	J	2	F
	Benzoic Acid	51	U	51	R
EB061099	Di-n-butylphthalate	2	J	2	F
	Acetophenone	1	J	1	F

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METALS
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G705

Client: HydroGeoLogic, Inc Date: September 23, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU11001-01	9906G705-001	Soil
BHGLSWMU11001-02	9906G705-002	Soil
BHGLSWMU11001-03	9906G705-003	Soil
BHGLSWMU11001-04	9906G705-004	Soil
BHGLSWMU11002-01	9906G705-005	Soil
BHGLSWMU11002-02	9906G705-006	Soil
BHGLSWMU11002-03	9906G705-007	Soil
DUP05	9906G705-008	Soil
BHGLSWMU39001-01	9906G705-009	Soil
BHGLSWMU39001-02	9906G705-010	Soil
EB060999	9906G705-012	Water
BHGLSWMU33003-03	9906G705-013	Soil
BHGLSWMU33003-03MS	9906G705-013MS	Soil
BHGLSWMU33003-03MSD	9906G705-013MSD	Soil
BHGLSWMU33003-04	9906G705-014	Soil
DUP06	9906G705-015	Soil
EB061099	9906G705-016	Water

Holding Times - All samples were extracted and analyzed within the recommended holding time of 180 days for all metals except 28 days for mercury as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration - All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks - The water preparation blank PBW (07/09/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic, beryllium, cadmium, cobalt, and nickel have been qualified (UJ) in both water samples. Antimony and zinc have been qualified (U) in both water samples.

The soil preparation blank PBS (07/16/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Antimony has been qualified (U) for positive results in all soil samples. Arsenic has been qualified (J) in samples BHGLSWMU11002-01, BHGLSWMU39001-01, and BHGLSWMU33003-04. Beryllium has been qualified (J) in samples BHGLSWMU11001-04, BHGLSWMU39001-01, and BHGLSWMU33003-04. Silver and tin have been qualified (U) in all soil samples

Field and equipment blank - Equipment blank EB060999 exhibited barium and copper contamination at 0.44 ug/L and 0.88 ug/L, respectively, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

Equipment blank EB061099 was free of contamination. No qualifications were required.

ICP Interference Check Sample - All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS - The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions - An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike - Matrix spike sample BHGLSWMU33003-03 exhibited low %R values for antimony, arsenic, and selenium of 53.9%, 43.1%, and 39.9%, respectively. All three compounds have been qualified (J/UJ) in all soil samples.

Matrix Spike Duplicate - Matrix duplicate sample BHGLSWMU33003-03 exhibited acceptable RPD values. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the following table. No qualifications were required.

Compound	BHGLSWMU11001-03 mg/kg	DUP05 mg/kg	RPD
Arsenic	4.6	4.2	9
Barium	52.9	55.1	4
Beryllium	0.63	0.68	8
Chromium	16.0	16.1	1
Cobalt	4.3	4.1	2
Copper	8 9	8.2	8

Compound	BHGLSWMU11001-03 mg/kg	DUP05 mg/kg	RPD
Lead	16.3	15 4	6
Nickel	9 1	9 6	5
Vanadium	32.2	28 3	13
Zinc	18.2	21.1	15

Compound	BHGLSWMU33002-02 mg/kg (SDG 9906G729)	DUP06 mg/kg	RPD
Arsenic	5.5	5.2	6
Barium	66.6	71.4	7
Beryllium	0.94	0.97	3
Chromium	14 4	17.0	17
Cobalt	4.1	3.4	19
Copper	7.5	7.3	3
Lead	7.6	22.5	99
Mercury	0 02U	0 03	NC
Nickel	10 9	12.6	14
Vanadium	34.9	33 6	4
Zinc	15 6	22 6	37

Graphite Furnace Atomic Absorption (GFAA) Analysis - Several samples exhibited a postdigestion spike for silver, selenium, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ).

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, matrix spike, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals SDG 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU11001-01	Antimony	0.62	BN	~~0.62~~ 3 7	UJ
	Arsenic	3.5	BN	3.5	F
	Selenium	0 12	UWN	~~0.12~~ 0.23	UJ
	Silver	0.17	W	~~0.17~~ 0.15	UJ

Qualification Summary Table - Metals SDG: 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Thallium	0.15	UW	~~0.15~~ 0.77	UJ
	Tin	1.3	B	~~1.3~~ 29.7	U
	Zinc	16 9	B	16.9	F
BHGLSWMU11001-02	Antimony	0.54	BN	~~0.54~~ 3.8	UJ
	Arsenic	4 5	N	4.5	J
	Cobalt	2.9	B	2.9	F
	Copper	6.9	B	6.9	F
	Selenium	0 12	UWN	~~0.12~~ 0.22	UJ
	Silver	0.11	BW	~~0.11~~ 0.15	UJ
	Tin	1.4	B	~~1.4~~ 30.0	U
	Zinc	18 4	B	18.4	F
BHGLSWMU11001-03	Antimony	0.48	BN	~~0.48~~ 3.9	UJ
	Arsenic	4.6	N	4.6	J
	Cobalt	4 3	B	4.3	F
	Selenium	0 14	UWN	~~0.14~~ 0.26	UJ
	Silver	0 10	BW	~~0.10~~ 0.18	UJ
	Tin	1 3	B	~~1.3~~ 31.5	U
	Zinc	18.2	B	18 2	F
BHGLSWMU11001-04	Antimony	0 34	UN	~~0.34~~ 4.4	UJ
	Arsenic	4.7	N	4 7	J
	Beryllium	0 33	-	0.33	J
	Copper	7.5	B	7.5	F
	Selenium	0.13	UWN	~~0.13~~ 0.24	UJ
	Silver	0 11	BW	~~0.11~~ 0.16	UJ
	Tin	1.3	B	~~1.3~~ 35	U
	Vanadium	16 3	B	16.3	F
	Zinc	21 6	B	21 6	F
BHGLSWMU11002-01	Antimony	0.63	BN	~~0.63~~ 4	UJ
	Arsenic	2 9	BN	2.9	JF
	Cobalt	4.6	B	4.6	F
	Nickel	7 8	B	7.8	F
	Selenium	0 14	BWN	0.14	F
	Silver	0.12	BW	~~0.12~~ 0.15	UJ
	Tin	0.95	B	~~0.95~~ 32.2	U
	Zinc	12 9	B	12.9	F
BHGLSWMU11002-02	Antimony	0.29	UN	~~0.29~~ 3.8	UJ
	Arsenic	4.4	N	4.4	J
	Cobalt	4.4	B	4.4	F
	Copper	6.7	B	6.7	F
	Selenium	0 13	UWN	~~0.13~~ 0.25	UJ
	Silver	0 12	BW	~~0.12~~ 0.17	UJ
	Tin	1.0	B	~~1.0~~ 30.2	U
	Zinc	18.7	B	18 7	F
BHGLSWMU11002-03	Antimony	0.50	BN	~~0.50~~ 3.9	UJ
	Arsenic	7.1	N	7.1	J
	Barium	14.2	B	12.7 ~~14.2~~	F
	Selenium	0 12	UN	~~0.12~~ 0.23	UJ
	Silver	0 10	B	~~0.10~~ 0.15	U

Qualification Summary Table - Metals SDG· 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
	Tin	1.3	B	~~1.3~~ 31	U
	Zinc	22.2	B	22.2	F
DUP05	Antimony	0.44	BN	~~0.44~~ 4.1	UJ
	Arsenic	4.2	N	4.2	J
	Cobalt	4.1	B	4.1	~~F~~ get
	Copper	8 2	B	8.2	F
	Selenium	0.14	UWN	~~0.14~~ 0.27	UJ
	Silver	0 09	B	~~0.09~~ 0.12	U
	Tin	1.5	B	~~1.5~~ 32.7	U
	Zinc	21.1	B	21.1	F
BHGLSWMU39001-01	Antimony	0.27	UN	~~0.27~~ 3.5	UJ
	Arsenic	1.5	BN	1.5	JF
	Beryllium	0.16	B	0.16	JF
	Cobalt	3.2	B	3.2	F
	Copper	4.4	B	4 4	F
	Nickel	3 9	B	3 9	F
	Selenium	0 10	UWN	~~0.10~~ 0.13	UJ
	Silver	0.09	B	~~0.09~~ 0.12	U
	Tin	0 76	B	~~0.76~~ 28	U
	Vanadium	10.5	B	10.5	F
	Zinc	7.7	B	7.7	F
BHGLSWMU39001-02	Antimony	0 47	BN	~~0.47~~ 4.3	UJ
	Arsenic	6 0	N	6.0	J
	Cobalt	4.9	B	4.9	F
	Copper	6.7	B	6 7	F
	Selenium	0 13	UWN	~~0.13~~ 0.24	UJ
	Silver	0.11	B	~~0.11~~ 0.16	U
	Tin	1.3	B	~~1.3~~ 31.5	U
	Zinc	22 3	B	22.3	F
EB060999	Antimony	3.0	B	3 0	U
	Arsenic	3.5	U	3 5	UJ
	Barium	0 44	B	0 44	F
	Beryllium	0.30	U	0.30	UJ
	Cadmium	0.30	U	0 30	UJ
	Cobalt	1 0	U	1.0	UJ
	Copper	0.88	B	0.88	F
	Nickel	1.7	U	1.7	UJ
	Zinc	13.4	B	13.4	U
BHGLSWMU3300~~1~~-03 3	Antimony	0.34	UN	~~0.34~~ 4.4	UJ
	Arsenic	5.2	N	5.2	J
	Cobalt	5 2	B	5.2	~~F~~ — stet
	Selenium	0 14	UN	~~0.14~~ 0.26	UJ
	Silver	0.11	B	~~0.11~~ 0.17	U
	Tin	1.3	B	~~1.3~~ 35	U
	Zinc	20.3	B	20.3	F
BHGLSWMU3300~~1~~-04 3	Antimony	0.32	UN	~~0.32~~ 4.1	UJ
	Arsenic	1 3	BN	1.3	JF
	Barium	13 5	B	13 5	F

Qualification Summary Table - Metals SDG· 9906G705					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Beryllium	0.09	B	0 09	RF
	Chromium	4.2	B	4.2	F
	Cobalt	2.7	B	2.7	F
	Copper	3.7	B	3.7	F
	Lead	4.5	B	4.5	F
	Nickel	4.1	B	4.1	F
	Selenium	0.13	UN	0~~.13~~0.25	UJ
	Silver	0.15	B	0~~.15~~0.16	U
	Tin	0.87	B	~~0.87~~32.7	U
	Vanadium	8 0	B	8.0	F
	Zinc	10.2	B	10 2	F
DUP06	Antimony	0.45	BN	~~0.45~~4.2	UJ
	Arsenic	5 2	N	5.2	J
	Cobalt	3.4	B	3 4	F
	Copper	7.3	B	7 3	F
	Mercury	0 03	B	0 03	F
	Selenium	0.15	UWN	~~0.15~~0.27	UJ
	Silver	0.18	B	0.18	U
	Tin	1.8	B	~~1.8~~33.3	U
	Zinc	22.6	B	22.6	F
EB061099	Antimony	2.3	B	2.3	U
	Arsenic	3.5	U	3.5	UJ
	Beryllium	0 30	U	0.30	UJ
	Cadmium	0 30	U	0.30	UJ
	Cobalt	1.0	U	1.0	UJ
	Nickel	1.7	U	1 7	UJ
	Zinc	3 8	B	3.8	U

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ETHYLENE GLYCOL by GC/FID
Method SOP 641 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G728

Client: HydroGeoLogic, Inc. Date: October 24, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU42001-01	906314-001	Soil
BHGLSWMU42001-02	906314-002	Soil
BHGLSWMU42001-03	906314-003	Soil
BHGLSWMU42001-04	906314-004	Soil
BHGLSWMU42002-01	906314-005	Soil
BHGLSWMU42002-02	906314-006	Soil
BHGLSWMU42002-03	906314-007	Soil
BHGLSWMU42002-04	906314-008	Soil
BHGLSWMU42003-01	906314-009	Soil
BHGLSWMU42003-02	906314-010	Soil
DUP09	906314-011	Soil
DUP10	906314-012	Soil
BHGLSWMU42003-03	906314-013	Soil
BHGLSWMU42003-04	906314-014	Soil
BHGLSWMU42004-01	906314-015	Soil
BHGLSWMU42004-02	906314-016	Soil
BHGLSWMU42004-02MS	906314-016MS	Soil
BHGLSWMU42004-02MSD	906314-016MSD	Soil
BHGLSWMU42004-03	906314-017	Soil
BHGLSWMU42004-04	906314-018	Soil

Holding Times - All samples were analyzed within the recommended holding time of 30 days as specified in SOP 641. No qualifications were required.

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

MS/MSD - MS/MSD sample BHGLSWMU42004-02 exhibited acceptable %R and RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

Method Blank - The method blank was free of contamination. No qualifications were required.

Trip, Field and Equipment Blanks - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate results are summarized in the tables below. No qualifications were required.

Compound	BHGLSWMU42002-03 mg/kg	DUP09 mg/kg	RPD
None	ND	ND	--

Compound	BHGLSWMU42003-04 mg/kg	DUP10 mg/kg	RPD
None	ND	ND	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Ethylene Glycol SDG: 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc. ug/L	Qualifier	Conc. ug/L	Qualifier
None Qualified	--	--	--	--	--

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TOTAL PETROLEUM HYDROCARBONS
Texas Method 1005 (Rev. 4/98) - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G728

Client: HydroGeoLogic, Inc. Date: October 24, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU42001-01	9906G728-001	Soil
BHGLSWMU42001-02	9906G728-002	Soil
BHGLSWMU42001-03	9906G728-003	Soil
BHGLSWMU42001-04	9906G728-004	Soil
BHGLSWMU42002-01	9906G728-005	Soil
BHGLSWMU42002-02	9906G728-006	Soil
BHGLSWMU42002-03	9906G728-007	Soil
BHGLSWMU42002-04	9906G728-008	Soil
BHGLSWMU42003-01	9906G728-009	Soil
BHGLSWMU42003-02	9906G728-010	Soil
DUP09	9906G728-011	Soil
DUP10	9906G728-012	Soil
BHGLSWMU42003-03	9906G728-013	Soil
BHGLSWMU42003-04	9906G728-014	Soil
BHGLSWMU42004-01	9906G728-015	Soil
BHGLSWMU42004-02	9906G728-016	Soil
BHGLSWMU42004-02MS	9906G728-016MS	Soil
BHGLSWMU42004-02MSD	9906G728-016MSD	Soil
BHGLSWMU42004-03	9906G728-017	Soil
BHGLSWMU42004-04	9906G728-018	Soil

Holding Times - All samples were analyzed outside the recommended holding time of 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. All results for all samples have been qualified (J/UJ).

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - information not provided by the laboratory.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - The LCS samples exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU42004-02 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - The method blanks were free of contamination. No qualifications were required.

Field, equipment blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate results are summarized in the following tables. No qualifications were required.

Compound	BHGLSWMU42002-03 mg/kg	DUP09 mg/kg	RPD
None	ND	ND	--

Compound	BHGLSWMU42003-04 mg/kg	DUP10 mg/kg	RPD
None	ND	ND	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time section of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - TPH SDG· 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU42001-01	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

Qualification Summary Table - TPH SDG 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU42001-02	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42001-03	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42001-04	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42002-01	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42002-02	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42002-03	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42002-04	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42003-01	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42003-02	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
DUP09	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
DUP10	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42003-03	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42003-04	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42004-01	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42004-02	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ
BHGLSWMU42004-03	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ

Qualification Summary Table - TPH SDG. 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	C6-C28	ND	-	ND	UJ
BHGLSWMU42004-04	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9906G728

Client: HydroGeoLogic, Inc Date: September 23, 1999

Laboratory. Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU42001-01	9906G728-001	Soil
BHGLSWMU42001-02	9906G728-002	Soil
BHGLSWMU42001-03	9906G728-003	Soil
BHGLSWMU42001-04	9906G728-004	Soil
BHGLSWMU42002-01	9906G728-005	Soil
BHGLSWMU42002-02	9906G728-006	Soil
BHGLSWMU42002-03	9906G728-007	Soil
BHGLSWMU42002-04	9906G728-008	Soil
BHGLSWMU42003-01	9906G728-009	Soil
BHGLSWMU42003-02	9906G728-010	Soil
DUP09	9906G728-011	Soil
DUP10	9906G728-012	Soil
BHGLSWMU42003-03	9906G728-013	Soil
BHGLSWMU42003-04	9906G728-014	Soil
BHGLSWMU42004-01	9906G728-015	Soil
BHGLSWMU42004-02	9906G728-016	Soil
BHGLSWMU42004-02MS	9906G728-016MS	Soil
BHGLSWMU42004-02MSD	9906G728-016MSD	Soil
BHGLSWMU42004-03	9906G728-017	Soil
BHGLSWMU42004-04	9906G728-018	Soil

Holding Times - All samples were analyzed within the recommended holding time of 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 05/31/99-06/23/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/24/99 and 06/25/99 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample VBLKWHBS exhibited high %R values for dichlorodifluoromethane and chloromethane of 185% and 142%, respectively, however, all associated results are non-detect and no qualifications were required.

LCS sample VBLKWDBS exhibited a high %R value for dichlorodifluoromethane of 172%, however, all associated results are non-detect and no qualifications were required.

LCS sample VBLKWBBS exhibited a high %R value for dichlorodifluoromethane of 164%, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU42004-02 exhibited low MSD %R values for 1,1,2-trichloroethane, 1,2-dibromoethane, bromoform, and 1,1,2,2-tetrachloroethane of 62%, 60%, 62%, and 59%, respectively, and high MS/MSD %R values for dichlorodifluoromethane of 158%/149%. 1,1,2-Trichloroethane, 1,2-dibromoethane, bromoform, and 1,1,2,2-tetrachloroethane have been qualified (J/UJ) in all samples. Dichlorodifluoromethane is non-detect in all samples and no further qualifications were required.

Internal Standard (IS) Area Performance - Samples BHGLSWMU42004-02, BHGLSWMU42003-03, BHGLSWMU42001-02, BHGLSWMU42001-03, BHGLSWMU42001-04, BHGLSWMU42002-01, and BHGLSWMU42002-02 exhibited low area counts for internal standard 1,4-dichlorobenzene-d4. All associated compounds have been qualified (J/UJ) in these samples.

Method Blank - Method blanks VBLKWH (06/24/99), VBLKWD (06/24/99), and VBLKWB (06/25/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate results are summarized in the tables below. No qualifications were required.

Compound	BHGLSWMU42002-03 ug/kg	DUP09 ug/kg	RPD
None	ND	ND	--

Compound	BHGLSWMU42003-04 ug/kg	DUP10 ug/kg	RPD
None	ND	ND	--

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the MS/MSD, internal standards, and TICs sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU42001-01	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42001-02	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ
	1,2-Dibromo-3-chloropropane	5	U	5	UJ
BHGLSWMU42001-03	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ
	1,2-Dibromo-3-chloropropane	5	U	5	UJ
BHGLSWMU42001-04	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ

Qualification Summary Table - Volatiles SDG 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	1,2-Dibromo-3-chloropropane	5	U	5	UJ
BHGLSWMU42002-01	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ
	1,2-Dibromo-3-chloropropane	5	U	5	UJ
BHGLSWMU42002-02	1,1,2-Trichloroethane	6	U	6	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	6	U	6	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	6	U	6	UJ
	1,2-Dibromo-3-chloropropane	6	U	6	UJ
BHGLSWMU42002-03	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42002-04	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42003-01	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42003-02	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
DUP09	1,1,2-Trichloroethane	4	U	4	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	4	U	4	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
DUP10	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42003-03	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ
	1,2-Dibromo-3-chloropropane	5	U	5	UJ
BHGLSWMU42003-04	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42004-01	1,1,2-Trichloroethane	5	U	5	UJ

Qualification Summary Table - Volatiles SDG: 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42004-02	1,1,2-Trichloroethane	6	U	6	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	6	U	6	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	6	U	6	UJ
	1,2-Dibromo-3-chloropropane	6	U	6	UJ
BHGLSWMU42004-03	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
BHGLSWMU42004-04	1,1,2-Trichloroethane	5	U	5	UJ
	1,2-Dibromoethane	3	U	3	UJ
	Bromoform	5	U	5	UJ
	1,1,2,2-Tetrachloroethane	2	U	2	UJ

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G728

Client. HydroGeoLogic, Inc. Date: September 21, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU42001-01	9906G728-001	Soil
BHGLSWMU42001-02	9906G728-002	Soil
BHGLSWMU42001-03	9906G728-003	Soil
BHGLSWMU42001-04	9906G728-004	Soil
BHGLSWMU42002-01	9906G728-005	Soil
BHGLSWMU42002-02	9906G728-006	Soil
BHGLSWMU42002-03	9906G728-007	Soil
BHGLSWMU42002-04	9906G728-008	Soil
BHGLSWMU42003-01	9906G728-009	Soil
BHGLSWMU42003-02	9906G728-010	Soil
DUP09	9906G728-011	Soil
DUP10	9906G728-012	Soil
BHGLSWMU42003-03	9906G728-013	Soil
BHGLSWMU42003-04	9906G728-014	Soil
BHGLSWMU42004-01	9906G728-015	Soil
BHGLSWMU42004-02	9906G728-016	Soil
BHGLSWMU42004-02MS	9906G728-016MS	Soil
BHGLSWMU42004-02MSD	9906G728-016MSD	Soil
BHGLSWMU42004-03	9906G728-017	Soil
BHGLSWMU42004-04	9906G728-018	Soil

Holding Times - All samples were extracted within 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/01/99-06/24/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/28/99, 06/29/99, and 06/30/99 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS sample SBLKTQBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU42004-02 exhibited a high RPD value for hexachlorocyclopentadiene of 46%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank SBLKTQ (06/22/99) was free of contamination. No qualifications were required.

Field, equipment blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate results for samples BHGLSWMU42002-03 and DUP09 are non-detect. No qualifications were required.

Field duplicate results for samples BHGLSWMU42003-04 and DUP10 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles SDG· 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU42002-01	Bis(2-ethylhexyl)phthalate	45	J	45	F
	Benzoic Acid	470	J	470	F
BHGLSWMU42002-03	Benzoic Acid	~~470~~ 420	J	~~470~~ 420	F
BHGLSWMU42002-04	Benzoic Acid	390	J	390	F
BHGLSWMU42003-01	Bis(2-ethylhexyl)phthalate	57	J	57	F
BHGLSWMU42003-03	Bis(2-ethylhexyl)phthalate	50	J	50	F

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SEP 28 1999

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METALS
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G728

Client: HydroGeoLogic, Inc. Date: September 23, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU42001-01	9906G728-001	Soil
BHGLSWMU42001-02	9906G728-002	Soil
BHGLSWMU42001-03	9906G728-003	Soil
BHGLSWMU42001-04	9906G728-004	Soil
BHGLSWMU42002-01	9906G728-005	Soil
BHGLSWMU42002-02	9906G728-006	Soil
BHGLSWMU42002-03	9906G728-007	Soil
BHGLSWMU42002-04	9906G728-008	Soil
BHGLSWMU42003-01	9906G728-009	Soil
BHGLSWMU42003-02	9906G728-010	Soil
DUP09	9906G728-011	Soil
DUP10	9906G728-012	Soil
BHGLSWMU42003-03	9906G728-013	Soil
BHGLSWMU42003-04	9906G728-014	Soil
BHGLSWMU42004-01	9906G728-015	Soil
BHGLSWMU42004-02	9906G728-016	Soil
BHGLSWMU42004-02MS	9906G728-016MS	Soil
BHGLSWMU42004-02MSD	9906G728-016MSD	Soil
BHGLSWMU42004-03	9906G728-017	Soil
BHGLSWMU42004-04	9906G728-018	Soil

Holding Times - All samples were extracted and analyzed within the recommended holding time of 180 days for all metals except 28 days for mercury as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration - All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks - The soil preparation blank PBS (07/17/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic has been qualified (J) in all samples except BHGLSWMU42001-03 and

BHGLSWMU42002-03. Beryllium has been qualified (J) in samples BHGLSWMU42001-04, BHGLSWMU42002-03, BHGLSWMU42002-04, DUP09, DUP10, BHGLSWMU42003-04, and BHGLSWMU42004-04. Cadmium has been qualified (J) for positive results in all samples. Silver and tin have been qualified (U) for positive results in all samples.

Field and equipment blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS - The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions - An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike - Matrix spike sample BHGLSWMU42002-04 exhibited low %R values for antimony, barium, and selenium of 63.9%, 58.0%, and 35.6%, respectively. All three compounds have been qualified (J/UJ) in all samples unless already qualified (F).

Matrix Spike Duplicate - Matrix duplicate sample BHGLSWMU42002-04 exhibited acceptable RPD values. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the following table. No qualifications were required.

Compound	BHGLSWMU42002-03 mg/kg	DUP09 mg/kg	RPD
Antimony	0 69	0.58	17
Arsenic	6.1	4.1	39
Barium	21.9	27.1	21
Beryllium	0.43	0.34	23
Cadmium	0.05	0.04	22
Chromium	8 0	8.3	4
Cobalt	4.2	4.6	9
Copper	8.5	6.1	33
Lead	6.2	5 4	14
Nickel	11 3	10 4	8
Vanadium	25.2	19 1	28
Zinc	17.5	16.3	7

Compound	BHGLSWMU42003-04 mg/kg	DUP10 mg/kg	RPD
Arsenic	3.3	2 7	20
Barium	11 4	15 4	30
Beryllium	0.13	0.20	42
Chromium	4.3	4 7	9
Cobalt	2.4	1.9	23
Copper	5 0	4 3	15
Lead	3.9	4.0	3
Nickel	4.8	4.8	0
Vanadium	11 8	11.5	3
Zinc	9 9	10.4	5

Graphite Furnace Atomic Absorption (GFAA) Analysis - Several samples exhibited a postdigestion spike for selenium, silver, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ).

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, matrix spike, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals SDG: 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
BHGLSWMU42001-01	Antimony	0.43	BN	0 43	F
	Arsenic	2 3	B	2.3	J
	Barium	73.8	N	73.8	J
	Copper	6.5	B	6.5	F
	Mercury	0 02	B	0 02	F
	Selenium	0.12	UWN	0.12	UJ
	Silver	0.19	-	0.19	U
	Thallium	0 19	B	0.19	F
	Tin	1.1	B	1.1	U
	Vanadium	19.7	B	19 7	F
	Zinc	14.0	B	14.0	F

Qualification Summary Table - Metals SDG 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU42001-02	Antimony	0.40	BN	0 40	F
	Arsenic	3.7	B	3.7	J
	Barium	37.4	N	37.4	J
	Cadmium	0 08	B	0.08	J
	Cobalt	4.2	B	4.2	F
	Copper	5.3	B	5.3	F
	Selenium	0 15	UWN	0 15	UJ
	Silver	0 13	BW	0.13	U
	Thallium	0 18	UW	0.18	UJ
	Tin	1.4	B	1 4	U
	Vanadium	19 1	B	19.1	F
	Zinc	14.5	B	14.5	F
BHGLSWMU42001-03	Antimony	0.32	BN	0 32	F
	Barium	46 9	N	46.9	J
	Selenium	0 12	UWN	0.12	UJ
	Silver	0 07	UW	0.07	UJ
	Thallium	0 14	UW	0.14	UJ
	Tin	1 3	B	1 3	U
BHGLSWMU42001-04	Antimony	0.28	BN	0.28	F
	Arsenic	1 2	B	1.2	J
	Barium	11.7	BN	11 7	F
	Beryllium	0.22	-	0 22	J
	Chromium	5.0	B	5 0	F
	Cobalt	1.7	B	1.7	F
	Copper	3.2	B	3.2	F
	Nickel	4.9	B	4.9	F
	Selenium	0 12	UWN	0.12	UJ
	Silver	0 10	BW	0 10	U
	Thallium	0 14	UW	0.14	UJ
	Tin	0 96	B	0 96	U
	Vanadium	7.8	B	7.8	F
	Zinc	11.7	B	11.7	F
BHGLSWMU42002-01	Antimony	0 37	BN	0.37	F
	Arsenic	2 8	B	2.8	J
	Barium	65.9	N	65 9	J
	Selenium	0.12	UWN	0.12	UJ
	Silver	0.14	B	0 14	U
	Thallium	0.24	B	0.24	F
	Tin	2.0	B	2.0	U
	Zinc	19.6	B	19.6	F
BHGLSWMU42002-02	Antimony	0.32	BN	0.32	F
	Arsenic	3 0	B	3.0	J
	Barium	26 7	BN	26.7	F
	Copper	7.0	B	7 0	F
	Selenium	0.12	UWN	0.12	UJ
	Silver	0 10	BW	0.10	U
	Thallium	0.27	B	0.27	F
	Tin	1.6	B	1.6	U
	Vanadium	19.6	B	19.6	F

Qualification Summary Table - Metals SDG 9906G728					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU42002-03	Antimony	0.69	BN	0.69	F
	Barium	21.9	BN	21 9	F
	Beryllium	0 43	-	0.43	J
	Cadmium	0.05	B	0.05	J
	Selenium	0.57	UN	0.57	UJ
	Silver	0.07	BW	0.07	U
	Thallium	0 13	UW	0 13	UJ
	Tin	1 5	B	1.5	U
	Zinc	17 5	B	17.5	F
BHGLSWMU42002-04	Antimony	0 24	UN	0.24	UJ
	Arsenic	2.7	B	2.7	J
	Barium	6.6	BN	6.6	F
	Beryllium	0.14	B	0 14	J
	Chromium	3 8	B	3.8	F
	Cobalt	2.1	B	2 1	F
	Copper	3 6	B	3.6	F
	Nickel	4.4	B	4.4	F
	Selenium	0 11	UWN	0.11	UJ
	Silver	0 09	BW	0.09	U
	Thallium	0.14	UW	0.14	UJ
	Tin	1 1	B	1.1	U
	Vanadium	10 3	B	10.3	F
	Zinc	7.8	B	7 8	F
BHGLSWMU42003-01	Antimony	0 31	BN	0 31	F
	Arsenic	3.8	-	3 8	J
	Barium	56 7	N	56.7	J
	Selenium	0 11	UWN	0.11	UJ
	Silver	0.12	B	0.12	U
	Thallium	0 23	B	0 23	F
	Tin	1 9	B	1.9	U
	Zinc	20 9	B	20.9	F
BHGLSWMU42003-02	Antimony	0 51	BN	0.51	F
	Arsenic	3.8	-	3.8	J
	Barium	46.4	N	46.4	J
	Selenium	0.15	UWN	0.15	UJ
	Silver	0 14	BW	0.14	U
	Thallium	0 23	B	0 23	F
	Tin	1 8	B	1.8	U
	Zinc	21.6	B	21.6	F
DUP09	Antimony	0 58	BN	0.58	F
	Arsenic	4.1	-	4 1	J
	Barium	27.1	BN	27 1	F
	Beryllium	0 34	-	0.34	J
	Cadmium	0.04	B	0.04	J
	Copper	6.1	B	6 1	F
	Selenium	0 68	UN	~~0.68~~ 1.3	UJ
	Thallium	0 16	UW	~~0.16~~ .85	UJ
	Tin	1.5	B	1.5	U
	Vanadium	19.1	B	19.1	F

Qualification Summary Table - Metals SDG. 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Zinc	16 3	B	16.3	F
DUP10	Antimony	0.28	UN	0.28	UJ
	Arsenic	2 7	B	2.7	J
	Barium	15.4	BN	15.4	F
	Beryllium	0.20	B	0.20	J
	Chromium	4.7	B	4.7	F
	Cobalt	1.9	B	1.9	F
	Copper	4 3	B	4.3	F
	Nickel	4.8	B	4.8	F
	Selenium	0 13	UWN	0.13	UJ
	Silver	0.10	BW	0 10	U
	Thallium	0.15	UW	0.15	UJ
	Tin	0.93	B	0 93	U
	Vanadium	11.5	B	11.5	F
	Zinc	10.4	B	10 4	F
BHGLSWMU42003-03	Antimony	0.33	BN	0.33	F
	Arsenic	3.2	B	3.2	J
	Barium	40.5	N	40 5	J
	Cadmium	0.04	B	0.04	J
	Cobalt	3.8	B	3.8	F
	Copper	6 4	B	6 4	F
	Selenium	0.11	UWN	0 11	UJ
	Silver	0.09	BW	0.09	U
	Thallium	0.13	UW	0.13	UJ
	Tin	1.3	B	1 3	U
BHGLSWMU42003-04	Antimony	0.64	BN	0.64	F
	Arsenic	3.3	B	3.3	J
	Barium	11 4	BN	11.4	F
	Beryllium	0.13	B	0 13	J
	Chromium	4 3	B	4.3	F
	Cobalt	2.4	B	2 4	F
	Copper	5.0	B	5.0	F
	Nickel	4 8	B	4.8	F
	Selenium	0 13	UWN	0 13	UJ
	Silver	0.10	BW	0.10	U
	Thallium	0.15	UW	0.15	UJ
	Tin	0.92	B	0.92	U
	Vanadium	11.8	B	11.8	F
	Zinc	9 9	B	9 9	F
BHGLSWMU42004-01	Antimony	0.39	BN	0.39	F
	Arsenic	3.1	B	3.1	J
	Barium	107	N	107	J
	Selenium	0.12	UWN	0.12	UJ
	Silver	0.08	B	0.08	U
	Thallium	0.24	B	0.24	F
	Tin	1.8	B	1.8	U
	Zinc	17.6	B	17.6	F
BHGLSWMU42004-02	Antimony	0.71	BN	0.71	F

Qualification Summary Table - Metals SDG· 9906G728					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
	Arsenic	2.2	B	2.2	J
	Barium	74.9	N	74 9	J
	Copper	7.1	B	7 1	F
	Selenium	0 14	UWN	0 14	UJ
	Silver	0.13	BW	0.13	U
	Thallium	0 18	B	0 18	F
	Tin	1.3	B	1.3	U
	Vanadium	18.6	B	18.6	F
	Zinc	19.3	B	19.3	F
BHGLSWMU42004-03	Antimony	0.57	BN	0.57	F
	Arsenic	4.1	-	4.1	J
	Barium	38.0	N	38 0	J
	Cadmium	0.07	B	0.07	J
	Cobalt	3.6	B	3.6	F
	Selenium	0 13	UWN	0 13	UJ
	Silver	0.08	BW	0 08	U
	Thallium	0.15	UW	0.15	UJ
	Tin	1 5	B	1.5	U
	Zinc	18.9	B	18.9	F
BHGLSWMU42004-04	Antimony	0.53	BN	0.53	F
	Arsenic	4 1	-	4.1	J
	Barium	38 8	N	38.8	J
	Beryllium	0 46	-	0.46	J
	Selenium	0 12	UWN	0.12	UJ
	Silver	0 11	BW	0.11	U
	Thallium	0 15	UW	0.15	UJ
	Tin	1.2	B	1 2	U
	Vanadium	19.7	B	19.7	F

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ETHYLENE GLYCOL by GC/FID
Method SOP 641 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G597

Client: HydroGeoLogic, Inc. Date: October 25, 1999

Laboratory: Severn Trent Laboratories, Pensacola, FL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
EB060299	906099-001	Water
BHGLAOC006001-01	906099-002	Soil
BHGLAOC006001-02	906099-003	Soil
BHGLAOC006002-01	906099-004	Soil
BHGLAOC006002-02	906099-005	Soil
BHGLAOC006003-01	906099-006	Soil
BHGLAOC006003-02	906099-007	Soil
BHGLAOC006003-02MS	906099-007MS	Soil
BHGLAOC006003-02MSD	906099-007MSD	Soil
BHGLAOC006004-01	906099-008	Soil
BHGLAOC006004-02	906099-009	Soil
DUP1	906099-010	Soil

Holding Times - All samples were analyzed within the recommended holding time of 30 days as specified in SOP 641. No qualifications were required.

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

MS/MSD - MS/MSD sample BHGLAOC006003-02 exhibited acceptable %R and RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

Method Blank - The method blank was free of contamination. No qualifications were required.

Trip, Field and Equipment Blanks - Equipment blank EB060299 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the table below. No qualifications were required.

Compound	BHGLAOC006001-02 mg/kg	DUP1 mg/kg	RPD
Ethylene Glycol	23	5U	NC

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Ethylene Glycol SDG. 9906G597					
Sample No.	Compound(s)	Reported		Validated	
		Conc. ug/L	Qualifier	Conc. ug/L	Qualifier
None Qualified	--	--	--	--	--

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TOTAL PETROLEUM HYDROCARBONS
Texas Method 1005 (Rev. 4/98) - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G597

Client: HydroGeoLogic, Inc. Date: October 25, 1999

Laboratory: Severn Trent Laboratories, Baltimore, MD Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
EB060299	906099-001	Water
BHGLAOC006001-01	906099-002	Soil
BHGLAOC006001-02	906099-003	Soil
BHGLAOC006002-01	906099-004	Soil
BHGLAOC006002-02	906099-005	Soil
BHGLAOC006003-01	906099-006	Soil
BHGLAOC006003-02	906099-007	Soil
BHGLAOC006003-02MS	906099-007MS	Soil
BHGLAOC006003-02MSD	906099-007MSD	Soil
BHGLAOC006004-01	906099-008	Soil
BHGLAOC006004-02	906099-009	Soil
DUP1	906099-010	Soil

Holding Times - All samples were analyzed outside the recommended holding time of 7 days for water samples and 14 days for soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998 with the exception of samples EB060299. All results for this sample have been qualified (J/UJ).

Initial Calibration - Information not provided by the laboratory.

Continuing Calibration - Information not provided by the laboratory.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - The LCS samples exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLAOC006003-02 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - The method blanks were free of contamination. No qualifications were required.

Field. equipment blank - Equipment blanks EB060299 was free of contamination.

Field Duplicates - Field duplicate samples DUP1 and BHGLAOC006001-02 were non-detect. No qualifications were required.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time section of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - TPH SDG. 9905G597					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
EB060299	C6-C10	ND	-	ND	UJ
	>C10-C28	ND	-	ND	UJ
	C6-C28	ND	-	ND	UJ

Environmental Data Services, Inc.

SEP 28 1999

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #. 9906G597

Client: HydroGeoLogic, Inc Date: September 22, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU51008-01	9906G597-001	Soil
BHGLSWMU51008-02	9906G597-002	Soil
BHGLSWMU51009-01	9906G597-003	Soil
BHGLSWMU51009-02	9906G597-004	Soil
EB060199	9906G597-005	Water
TB060199	9906G597-006	Water
TB060299	9906G597-007	Water
EB060299	9906G597-008	Water
BHGLAOC006001-01	9906G597-009	Soil
BHGLAOC006001-02	9906G597-010	Soil
BHGLAOC006002-01	9906G597-011	Soil
BHGLAOC006002-02	9906G597-012	Soil
BHGLAOC006003-01	9906G597-013	Soil
BHGLAOC006003-02	9906G597-014	Soil
BHGLAOC006003-02MS	9906G597-014MS	Soil
BHGLAOC006003-02MSD	9906G597-014MSD	Soil
BHGLAOC006004-01	9906G597-015	Soil
BHGLAOC006004-02	9906G597-016	Soil
DUP01	9906G597-017	Soil

Holding Times - All samples were analyzed within the recommended holding time of 14 days for preserved water and soil samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 01/24/99-06/03/99 and 03/09/99-05/31/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/03/99 and 06/08/99 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibrations analyzed on 06/10/99 (0610) exhibited a high %D value for dichlorodifluoromethane of 70.5%. Dichlorodifluoromethane has been rejected (R) in samples 51008-01 and 51008-02.

The continuing calibrations analyzed on 06/10/99 (1817) exhibited a high %D value for dichlorodifluoromethane of 80.5%. Dichlorodifluoromethane has been rejected (R) in samples 51009-01, 06001-01, 06002-02, 06003-01, and 06003-02.

The continuing calibrations analyzed on 06/11/99 exhibited a high %D value for dichlorodifluoromethane of 71.2%. Dichlorodifluoromethane has been rejected (R) in samples 51009-02, 06001-02, 06002-01, 06004-01, 06004-02, and DUP01.

Surrogates - Samples EB060199 and TB060199 exhibited high %R values for dibromofluoromethane of 138% and 126%, respectively. All positive results have been qualified (J).

Laboratory Control Samples - LCS samples VBLKAABS, VBLKCKBA, VBLG2MBS, and VBLKHTBS exhibited acceptable %R values. No qualifications were required.

LCS sample VBLKHRBS exhibited a high %R value for dichlorodifluoromethane of 148%, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU06003-02 exhibited high MS/MSD %R values for dichlorodifluoromethane and 1,2,3-trichloropropane of 144%/145% and 136%/ok, respectively, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks VBLKAA (06/03/99), VBLKCK (06/09/99), VBLKG2 (06/09/99), VBLKHT (06/10/99), and VBLKHR (06/11/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Trip blank TB060199 was free of contamination. No qualifications were required.

Trip blank TB060299 was free of contamination. No qualifications were required.

Equipment blank EB060199 exhibited methylene chloride contamination at 0.5 ug/L, however, all associated results are non-detect and no qualifications were required.

Equipment blank EB060299 exhibited acetone and methylene chloride contamination at 5 ug/L and 0.6 ug/L, respectively. Acetone has been qualified (U) in sample BHGLSWMU06004-02.

Field Duplicates - Field duplicate results for samples BHGLSWMU06001-02 and DUP01 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the field blank and TICs sections of this report with the exception of one compound which was rejected due to calibration problems in all soil samples. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG: 9906G597					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU51008-01	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU51008-02	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU51009-01	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU51009-02	Dichlorodifluoromethane	5	U	5	R
EB060199	Acetone Methylene Chloride	5 0 6	- -	5 0.6	J J
BHGLAOC006001-01	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006001-02	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006002-01	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006002-02	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006003-01	Dichlorodifluoromethane	5	U	5	R

Qualification Summary Table - Volatiles SDG 9906G597					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
BHGLAOC006003-02	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006004-01	Dichlorodifluoromethane	5	U	5	R
BHGLAOC006004-02	Dichlorodifluoromethane Acetone	5 6	U U	5 6	R U
DUP01	Dichlorodifluoromethane	5	U	5	R

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9906G597

Client: HydroGeoLogic, Inc. Date: September 23, 1999

Laboratory: Severn Trent, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU51008-01	9906G597-001	Soil
BHGLSWMU51008-02	9906G597-002	Soil
BHGLSWMU51009-01	9906G597-003	Soil
BHGLSWMU51009-02	9906G597-004	Soil
EB060199	9906G597-005	Water
EB060299	9906G597-008	Water
BHGLAOC006001-01	9906G597-009	Soil
BHGLAOC006001-02	9906G597-010	Soil
BHGLAOC006002-01	9906G597-011	Soil
BHGLAOC006002-02	9906G597-012	Soil
BHGLAOC006003-01	9906G597-013	Soil
BHGLAOC006003-02	9906G597-014	Soil
BHGLAOC006003-02MS	9906G597-014MS	Soil
BHGLAOC006003-02MSD	9906G597-014MSD	Soil
BHGLAOC006004-01	9906G597-015	Soil
BHGLAOC006004-02	9906G597-016	Soil
DUP01	9906G597-017	Soil

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/24/99-05/26/99 and 02/24/99-06/22/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/14/99 exhibited acceptable %D values. No qualifications were required.

The continuing calibration analyzed on 06/15/99 exhibited high %D values for 4,6-dinitro-2-methylphenol, benzoic acid, and 2,2'-oxybis(1-chloropropane) of 36.2%, 27.4%, and 40.1%, respectively. All three compounds have been rejected (R) in samples EB060299, 51008-01, 51008-02, 51009-01, 51009-02, 06001-01, 06001-02, 06002-01, 06003-01, 06004-02, and 06003-02.

The continuing calibration analyzed on 06/23/99 exhibited a high %D value for benzoic acid of 26.4%. Benzoic acid has been rejected (R) in samples 06002-02, 06004-01, and DUP01.

Surrogates - Sample EB060199 exhibited a high %R value for surrogate compound terphenyl-d14 of 139%, however, no qualifications are required for only one surrogate outside of QC limits.

Laboratory Control Samples - LCS sample SBLKSNBS exhibited acceptable %R values. No qualifications were required.

LCS sample SBLKSDBS exhibited high %R values for pyrene and di-n-octylphthalate of 164% and 128%, respectively, however, all associated results are non-detect and no qualifications were required.

LCS sample SBLKSGBS exhibited high %R values for pyrene and di-n-octylphthalate of 151% and 131%, respectively, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU06003-02 exhibited high RPD values for 4-chloroaniline, 3,3'-dichlorobenzidine, and benzoic acid of 52%, 35%, and 36%, respectively, however, all associated results are non-detect or have already been qualified and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks SBLKSD (06/03/99), SBLKSG (06/07/99) and SBLKSN (06/10/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB060199 was free of contamination. No qualifications were required.

Equipment blank EB060299 exhibited benzoic acid contamination at 12 ug/L, however, all associated samples are non-detect and no qualifications were required.

Field Duplicates - Field duplicate results for samples BHGLSWMU06001-02 and DUP01 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs and compound quantitation sections of this report with the exception of several compounds which were rejected due to calibration problems. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles
SDG 9906G597

Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
BHGLSWMU51008-01	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R
	2,2'-oxybis(1-Chloropropane)	400	U	400	R
BHGLSWMU51008-02	4,6-Dinitro-2-methylphenol	1900	U	1900	R
	Benzoic Acid	1900	U	1900	R
	2,2'-oxybis(1-Chloropropane)	380	U	380	R
BHGLSWMU51009-01	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R
	2,2'-oxybis(1-Chloropropane)	400	U	400	R
BHGLSWMU51009-02	4,6-Dinitro-2-methylphenol	1900	U	1900	R
	Benzoic Acid	1900	U	1900	R
	2,2'-oxybis(1-Chloropropane)	370	U	370	R
EB060299	4,6-Dinitro-2-methylphenol	50	U	50	R
	Benzoic Acid	12	U	12	R
	2,2'-oxybis(1-Chloropropane)	10	U	10	R
BHGLAOC006001-01	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R

Qualification Summary Table - Semivolatiles SDG: 9906G597					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	2,2'-oxybis(1-Chloropropane)	390	U	390	R
BHGLAOC006001-02	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R
	2,2'-oxybis(1-Chloropropane)	390	U	390	R
BHGLAOC006002-01	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R
	2,2'-oxybis(1-Chloropropane)	390	U	390	R
BHGLAOC006002-02	Benzoic Acid	1900	U	1900	R
BHGLAOC006003-01	4,6-Dinitro-2-methylphenol	2000	U	2000	R
	Benzoic Acid	2000	U	2000	R
	2,2'-oxybis(1-Chloropropane)	370	U	370	R
BHGLAOC006003-02	4,6-Dinitro-2-methylphenol	1800	U	1800	R
	Benzoic Acid	1800	U	1800	R
	2,2'-oxybis(1-Chloropropane)	370	U	370	R
BHGLAOC006004-01	Butylbenzylphthalate	310	J	310	F
	Benzoic Acid	2000	U	2000	R
BHGLAOC006004-02	4,6-Dinitro-2-methylphenol	1900	U	1900	R
	Benzoic Acid	1900	U	1900	R
	2,2'-oxybis(1-Chloropropane)	380	U	380	R
DUP01	Benzoic Acid	1900	U	1900	R

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TAL METALS & CYANIDE
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9906G597

Client: HydroGeoLogic, Inc. Date: September 22, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU51008-01	9906G597-001	Soil
BHGLSWMU51008-02	9906G597-002	Soil
BHGLSWMU51009-01	9906G597-003	Soil
BHGLSWMU51009-02	9906G597-004	Soil
EB060199	9906G597-005	Water
EB060299	9906G597-008	Water
BHGLAOC006001-01	9906G597-009	Soil
BHGLAOC006001-02	9906G597-010	Soil
BHGLAOC006002-01	9906G597-011	Soil
BHGLAOC006002-02	9906G597-012	Soil
BHGLAOC006003-01	9906G597-013	Soil
BHGLAOC006003-02	9906G597-014	Soil
BHGLAOC006003-02MS	9906G597-014MS	Soil
BHGLAOC006003-02MSD	9906G597-014MSD	Soil
BHGLAOC006004-01	9906G597-015	Soil
BHGLAOC006004-02	9906G597-016	Soil
DUP01	9906G597-017	Soil

Holding Times: All samples were extracted and analyzed within the recommended holding time of 28 days for mercury, 180 days for all other metals, and 14 days for cyanide as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration: All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks: The water preparation blank PBW (06/23/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Antimony, arsenic, beryllium, cobalt, and nickel have been qualified (UJ) in both water samples. Copper and zinc have been qualified (U) in both water samples.

The soil preparation blank PBS (06/26/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Tin has been qualified (U) in all soil samples.

Field and equipment blank: Equipment blank EB060199 exhibited barium contamination at 0.55 ug/L, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

Equipment blank EB060299 exhibited barium contamination at 0.55 ug/L, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

ICP Interference Check Sample: All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS. The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions: An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike: Matrix spike sample BHGLAOC006003-02 exhibited low %R values for antimony, selenium, silver, and thallium of 32.1%, 50.9%, 66.7%, and 52.8%, respectively, and a high %R value for lead of 134.5%. Antimony selenium, silver, and thallium have been qualified (J/UJ) in all soil samples. Lead has been qualified (J) for positive results in all soil samples.

Matrix Spike Duplicate: Matrix duplicate sample BHGLAOC006003-02 exhibited acceptable RPD values. No qualifications were required.

Field Duplicates: Field duplicate results are summarized in the table below. No qualifications were required.

Compound	BHGLAOC006001-02 mg/kg	DUP01 mg/kg	RPD
Arsenic	1 8	3.8	71
Barium	129	139	7
Beryllium	0.47	0.50	6
Cadmium	0.24	0.36	40
Chromium	10.4	11 2	7
Cobalt	2.6	3.2	21

Compound	BHGLAOC006001-02 mg/kg	DUP01 mg/kg	RPD
Copper	5.3	6.1	14
Lead	5 4	5.4	0
Nickel	6.0	7.0	15
Vanadium	15 5	23.2	40
Zinc	24 8	24.3	2

Graphite Furnace Atomic Absorption (GFAA) Analysis: Several samples exhibited a postdigestion spike for selenium, silver, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W), however, all results have already been qualified due to matrix spike problems and no further qualifications were required.

Compound Quantitation: All results between the MDL and the PQL have been qualified (F).

Comments: The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, matrix spike, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Metals/Cyanide SDG 9906G597					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
BHGLSWMU51008-01	Antimony	0 36	UN	~~0.36~~ 4.6	UJ
	Arsenic	3 5	B	3.5	F
	Cadmium	0.25	B	0.25	F
	Cobalt	5.1	B	5.1	F
	Lead	15.3	N	15.3	J
	Selenium	0 14	UWN	~~0.14~~ 6.26	UJ
	Silver	0.09	UWN	~~0.09~~ 0.17	UJ
	Thallium	0.19	BN	0.19	YF
	Tin	2.1	B	~~2.1~~ 36.6	U
BHGLSWMU51008-02	Antimony	0 32	UN	~~0.32~~ 4.1	UJ
	Arsenic	3 3	B	3.3	F
	Cadmium	0.31	B	0.31	F
	Cobalt	3.3	B	3.3	F
	Copper	7.8	B	7.8	F
	Lead	9.4	N	9.4	J
	Selenium	0 15	BWN	0.15	YF

Qualification Summary Table - Metals/Cyanide SDG 9906G597					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Silver	0.08	UWN	~~0.08~~ 0.16	UJ
	Thallium	0.15	UWN	~~0.15~~ 0.79	UJ
	Tin	1.8	B	~~1.8~~ 32.7	U
BHGLSWMU51009-01	Antimony	0.30	UN	~~0.30~~ 5.9	UJ
	Cadmium	0.24	B	0.24	F
	Lead	11.4	N	11.4	J
	Selenium	0.13	UWN	~~0.13~~ 0.24	UJ
	Silver	0.08	UWN	~~0.08~~ 0.14	UJ
	Thallium	0.22	BWN	0.22	~~J~~ F
	Tin	1.6	B	~~1.6~~ 31.1	U
BHGLSWMU51009-02	Antimony	0.29	UN	~~0.29~~ 3.7	UJ
	Lead	10.7	N	10.7	J
	Selenium	0.14	UN	~~0.14~~ 0.25	UJ
	Silver	0.08	UWN	~~0.08~~ 0.17	UJ
	Thallium	0.16	UWN	~~0.16~~ 0.85	UJ
	Tin	1.7	B	~~1.7~~ 29.1	U
EB060199	Antimony	2.2	U	2.2	UJ
	Arsenic	3.5	U	3.5	UJ
	Barium	0.55	B	0.55	F
	Beryllium	0.30	U	0.30	UJ
	Cobalt	1.0	U	1.0	UJ
	Copper	5.0	B	5.0	U
	Nickel	1.7	U	1.7	UJ
	Zinc	6.2	B	6.2	U
EB060299	Antimony	2.2	U	2.2	UJ
	Arsenic	3.5	U	3.5	UJ
	Barium	0.55	B	0.55	F
	Beryllium	0.30	U	0.30	UJ
	Cobalt	1.0	U	1.0	UJ
	Copper	4.0	B	4.0	U
	Nickel	1.7	U	1.7	UJ
	Selenium	1.7	UW	1.7	UJ
	Zinc	4.8	B	4.8	U
BHGLAOC006001-01	Antimony	0.33	UN	~~0.33~~ 4.2	UJ
	Arsenic	2.4	B	2.4	F
	Cadmium	0.16	B	0.16	F
	Cobalt	4.6	B	4.6	F
	Lead	8.3	N	8.3	J
	Selenium	0.18	BWN	0.18	~~J~~ F
	Silver	0.09	UWN	~~0.09~~ 0.17	UJ
	Thallium	0.16	UN	~~0.16~~ 0.85	UJ
	Tin	1.3	B	~~1.3~~ 33.5	U
	Vanadium	22.7	B	22.7	F
BHGLAOC006001-02	Antimony	0.30	UN	~~0.30~~ 3.8	UJ
	Arsenic	1.8	B	1.8	F
	Cadmium	0.24	B	0.24	F
	Cobalt	2.6	B	2.6	F
	Copper	5.3	B	5.3	F

Qualification Summary Table - Metals/Cyanide SDG 9906G597					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Lead	5.4	N	5.4	J
	Nickel	6.0	B	6.0	F
	Selenium	0.66	UN	~~0.66~~ 1.2	UJ
	Silver	0 08	UWN	~~0.08~~ 0.16	UJ
	Thallium	0.16	UWN	~~0.16~~ 0.92	UJ
	Tin	1 4	B	~~1.4~~ 30.6	U
	Vanadium	15 5	B	15.5	F
BHGLAOC006002-01	Antimony	0.31	UN	~~0.31~~ 4	UJ
	Arsenic	2 7	B	2 7	F
	Cadmium	0.16	B	0.16	F
	Lead	8 8	N	8.8	J
	Selenium	0 13	UN	~~0.13~~ 0.24	UJ
	Silver	0 08	UWN	~~0.08~~ 0.16	UJ
	Thallium	0.15	UWN	~~0.15~~ 0.8	UJ
	Tin	1.6	B	~~1.6~~ 32.2	U
BHGLAOC006002-02	Antimony	0.30	UN	~~0.30~~ 3.9	UJ
	Arsenic	1.2	B	1.2	F
	Cadmium	0.16	B	0 16	F
	Chromium	6 1	B	6.1	F
	Cobalt	1 6	B	1.6	F
	Copper	3.1	B	3.1	F
	Lead	4.1	N	4.1	J
	Nickel	3.9	B	3.9	F
	Selenium	0.12	UWN	~~0.12~~ 0.23	UJ
	Silver	0.08	UWN	~~0.08~~ 0.15	UJ
	Thallium	0.15	UWN	~~0.15~~ 0.76	UJ
	Tin	1.4	B	~~1.4~~ 31.2	U
	Vanadium	9.9	B	9 9	F
	Zinc	11.3	B	11.3	F
BHGLAOC006003-01	Antimony	0.30	UN	~~0.30~~ 3.9	UJ
	Arsenic	1.7	B	1.7	F
	Cadmium	0 15	B	0 15	F
	Cobalt	3 5	B	3.5	F
	Copper	7.6	B	7.6	F
	Lead	6.9	N	6.9	J
	Nickel	6 3	B	6 3	F
	Selenium	0.12	BN	0.12	J
	Silver	0.07	UWN	~~0.07~~ 0.15	UJ
	Thallium	0.14	UN	~~0.14~~ 0.73	UJ
	Tin	1.4	B	~~1.4~~ 31.2	U
	Vanadium	14.4	B	14.4	F
	Zinc	20.4	B	20.4	F
BHGLAOC006003-02	Antimony	0.32	UN	~~0.32~~ 4.1	UJ
	Arsenic	3.3	B	3.3	F
	Cadmium	0 20	B	0.20	F
	Cobalt	3 6	B	3.6	F
	Copper	3.9	B	3.9	F
	Lead	4 3	N	4 3	J
	Nickel	6.8	B	6 8	F

Qualification Summary Table - Metals/Cyanide SDG. 9906G597					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Selenium	0.12	UWN	~~0.12~~ 0.23	UJ
	Silver	0.08	UWN	~~0.08~~ 0.15	UJ
	Thallium	0.14	UWN	~~0.14~~ 0.76	UJ
	Tin	1.5	B	~~1.5~~ 32.5	U
	Vanadium	18.5	B	18.5	F
	Zinc	14 5	B	14.5	F
BHGLAOC006004-01	Antimony	0.33	UN	~~0.33~~ 4.2	UJ
	Arsenic	2.7	B	2.7	F
	Cadmium	0.13	B	0.13	F
	Chromium	7 3	B	7.3	F
	Cobalt	2 5	B	2 5	F
	Copper	4.7	B	4.7	F
	Lead	6.4	N	6.4	J
	Nickel	5.3	B	5.3	F
	Selenium	0.16	BWN	~~0.16~~ sbt	RF
	Silver	0 09	UWN	~~0.09~~ 0.17	UJ
	Thallium	0.17	UWN	~~0.17~~ 0.37	UJ
	Tin	1 3	B	~~1.3~~ 33.5	U
	Vanadium	15.4	B	15.4	F
	Zinc	16.4	B	16 4	F
BHGLAOC006004-02	Antimony	0.30	UN	~~0.30~~ 3.9	UJ
	Arsenic	3.1	B	3.1	F
	Cadmium	0.17	B	0.17	F
	Cobalt	3.1	B	3.1	F
	Copper	5.6	B	5 6	F
	Lead	8.5	N	8.5	J
	Nickel	6.9	B	6.9	F
	Selenium	0.12	UWN	~~0.12~~ 23	UJ
	Silver	0 08	UWN	~~0.08~~ 0.15	UJ
	Thallium	0 15	UWN	~~0.15~~ ~~31~~ 0.77	UJ
	Tin	1.4	B	~~1.4~~ 31	U
	Vanadium	21 3	B	21.3	F
	Zinc	21 3	B	21.3	F
DUP01	Antimony	0.32	UN	~~0.32~~ 4.1	UJ
	Arsenic	3.8	B	3.8	F
	Cadmium	0.36	B	0 36	F
	Cobalt	3.2	B	3 2	F
	Copper	6.1	B	6.1	F
	Lead	5.4	N	5.4	J
	Nickel	7.0	B	7 0	F
	Selenium	0 66	UN	~~0.66~~ 1.2	UJ
	Silver	0 08	UWN	~~0.08~~ 0.16	UJ
	Thallium	0.16	UWN	~~0.16~~ 0.32	UJ
	Tin	1.6	B	~~1.6~~ 32.8	U
	Vanadium	23 2	B	23.2	F
	Zinc	24.3	B	24.3	F

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SULFIDE
USEPA SW846 Method 9030 - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 13, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times - All samples were analyzed within the recommended holding times as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Method and Calibration Blanks - The method blanks were free of contamination. No qualifications were required.

Field and Equipment Blank - Equipment blank EB052499 was free of contamination No qualifications were required.

LCS - The LCS samples exhibited acceptable %R values. No qualifications were required.

Matrix Spike/Duplicate - A MS/MSD sample was not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Sulfide SDG. 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
None Qualified	--	--	--	--	--

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HERBICIDES
USEPA SW846 Method 8150B - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 12, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/08/99 exhibited acceptable %RSD values less than 20%. No qualifications were required.

Continuing Calibration Verification - The continuing calibration verifications analyzed on 06/08/99, 06/09/99 and 06/10/99 exhibited acceptable %D values. No qualifications were required.

Method Blank - Method blanks PBLKOE (06/04/99) and PBLKMM (05/28/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB052499 was free of contamination. No qualifications were required.

Surrogates - The sample exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples PBLKMMBS and PBLKOEBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - A MS/MSD sample was not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Identification - The retention times met the QC acceptance criteria. No qualifications were required.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Herbicides SDG. 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
None Qualified	--	--	--	--	--

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2,3,7,8-TCDD & 2,3,7,8-TCDF
USEPA SW846 Method 8280 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 13, 1999

Laboratory: RECRA LabNet - Philadelphia Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times: All samples were extracted within 30 days of collection and analyzed within the recommended holding time of 45 days as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Initial Calibration: The initial calibrations analyzed on 12/29/98, 12/30/98 and 12/31/98 exhibited acceptable %RSD values of less than 15% for the RFs. All ICAL ion abundance ratios met QC acceptance criteria. No qualifications were required.

Continuing Calibration: The continuing calibrations analyzed on 06/16/98 exhibited acceptable %D values and ion abundance ratios within QC acceptance criteria and no qualifications were required.

Column Performance Check: Resolution check criteria were met since the valley was less than 25%.

Surrogates: All surrogate recovery values met QC acceptance criteria and no qualifications were required.

Method Blanks: The water and soil method blanks were free of contamination and no qualifications were required.

Field. equipment blanks: Equipment blank EB052499 was free of contamination. No qualifications were required.

Internal Standards: The internal standards met QC acceptance criteria and no qualifications were required.

MS/MSD: A MS/MSD sample was not associated with the samples in this data package.

Laboratory Control Sample/Duplicate: The water and soil LCS samples exhibited acceptable %R values within the QC acceptance criteria and no qualifications were required.

Field Duplicates: Field duplicate samples were not analyzed with this data package.

Compound Quantitation: No discrepancies were identified. All sample results were non-detect.

Comments: The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table: The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Dioxin/Furans SDG: 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
None Qualified	--	--	--	--	--

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ORGANOPHOPHORUS PESTICIDES
USEPA SW846 Method 8141 - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 9, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLA0C015001-01	9905G510-012	Soil
BHGLA0C015001-02	9905G510-013	Soil
BHGLA0C015001-03	9905G510-014	Soil
BHGLA0C015001-04	9905G510-015	Soil
BHGLA0C015001-05	9905G510-016	Soil
BHGLA0C015001-05RE	9905G510-016RE	Soil
EB052499	99C5G510-017	Water

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998 with the exception of sample BHGLAOC015001-05RE which was extracted outside of holding times. All results for this sample have been qualified (UJ).

Initial Calibration - The initial calibrations analyzed on 6/10/99, 6/11/99 and 6/15/99 exhibited acceptable %RSD values of less than 20% and/or correlation coefficients of >0.995. No qualifications were required.

Continuing Calibration Verification - The continuing calibration verifications analyzed on 6/10/99, 6/11/99, 6/12/99 and 6/16/99 exhibited acceptable %D values. No qualifications were required.

Method Blank - Method blanks PBLKMN (6/10/99), PBLKOH (6/11/99), PBLKPN (6/16/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB052499 was free of contamination. No qualifications were required.

Surrogates - Sample BHGLAOC015001-05 exhibited low %R values for surrogate compounds TBP and TPP of 26% and 36%, respectively All results for this sample have been qualified (J/UJ).

Laboratory Control Samples - LCS samples PBLKMNBS, PBLKOHBS, and PBLKPMBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - A MS/MSD sample was not associated with the sample in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Identification - Several compounds exhibited a slight RT shift during the 06/16/99 calibration verification, however, none of the data were affected and no qualifications were required.

Compound Quantitation - All results between the MDL and the PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time and surrogate sections of this report. The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - OP Pesticides SDG: 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
BHGLA0C015001-05	Disulfoton	73	U	73	UJ
	Methyl parathion	73	U	73	UJ
	Phorate	73	U	73	UJ
	o.o.o-Triethylphosphorothioat	73	U	73	UJ
	Thionazin	21	J	21	F
	Sulfotep	73	U	73	UJ
	Dimethoate	73	U	73	UJ
	Parathion	73	U	73	UJ

Qualification Summary Table - OP Pesticides SDG 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Famphur	73	U	73	UJ
BHGLA0C015001-05	Disulfoton	74	U	74	UJ
	Methyl parathion	74	U	74	UJ
	Phorate	74	U	74	UJ
	o o.o-Triethylphosphorothioat	74	U	74	UJ
	Thionazin	74	U	74	UJ
	Sulfotep	74	U	74	UJ
	Dimethoate	74	U	74	UJ
	Parathion	74	U	74	UJ
	Famphur	74	U	74	UJ

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APPENDIX IX PESTICIDES/PCBs
USEPA SW846 Method 8080A - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 14, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times - All samples were extracted within 7 days for water and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1 2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 06/07/99 and 06/08/99 exhibited acceptable %RSD values of less than 20%. No qualifications were required.

Continuing Calibration Verification - The continuing calibrations analyzed 06/09/99, 06/10/99 and 06/11/99 exhibited acceptable %D values. No qualifications were required.

Method Blank - Method blanks PBLKMC (05/28/99) and PBLKNY (06/04/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB052499 was free of contamination. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate %R values. No qualifications were required.

Laboratory Control Samples - LCS samples PBLKMCBS, PBLKMDBS, PBLKNYBS and PBLKNZBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - A MS/MSD sample was not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Identification - The retention times met the QC acceptance criteria and no qualifications were required.

Compound Quantitation - No discrepancies were identified

Comments - The analyses of environmental samples and quality control samples are valid. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Pesticide/PCBs SDG: 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
None Qualified	--	--	--	--	--

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APPENDIX IX SEMIVOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8270C - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 13, 1999

Laboratory: Severn Trent, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU36001-01	9905G510-001	Soil
BHGLSWMU36001-02	9905G510-002	Soil
BHGLSWMU36001-02MS	9905G510-002MS	Soil
BHGLSWMU36001-02MSD	9905G510-002MSD	Soil
BHGLSWMU36001-03	9905G510-003	Soil
BHGLSWMU36001-04	9905G510-004	Soil
BHGLSWMU36002-01	9905G510-005	Soil
BHGLSWMU36002-02	9905G510-006	Soil
BHGLSWMU36002-03	9905G510-007	Soil
BHGLSWMU36003-01	9905G510-008	Soil
BHGLSWMU36003-02	9905G510-009	Soil
BHGLSWMU36003-03	9905G510-010	Soil
DUP13	9905G510-011	Soil
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within the recommended holding time of 40 days for all samples as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed 02/01/99-06/15/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

The initial calibrations analyzed 02/19/99-6/9/99 exhibited a high %RSD value for benzyl alcohol of 36.1%. Benzyl alcohol has been rejected (R) in all samples except BHGLSWMU36001-02 and EB052499.

Continuing Calibration - The continuing calibrations analyzed on 06/01/99, 06/14/99, 06/15/99 and 06/16/99 exhibited acceptable %D values. No qualifications were required.

The continuing calibration analyzed on 06/10/99 exhibited high %D values for 2,4,5-trichlorophenol and benzyl alcohol of 26.6% and 31.4%, respectively. 2,4,5-Trichlorophenol has been rejected (R) in samples BHGLSWMU36001-03, BHGLSWMU36001-04, BHGLSWMU36002-02, BHGLSWMU36002-03, BHGLSWMU36003-01, BHGLSWMU36003-02, DUP13, BHGLAOC015001-02, BHGLAOC015001-03, BHGLAOC015001-04 and BHGLAOC015001-05. All associated benzyl alcohol results have already been rejected due to the initial calibration and no further qualifications were required.

Surrogates - Sample BHGLSWMU36002-02 exhibited a low %R value for surrogate compound 2,4,6-tribromophenol of 13%, however, no qualifications are required for only surrogate outside of QC limits.

Laboratory Control Samples - LCS sample SBLKRUBS exhibited acceptable %R values. No qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU36001-02 exhibited a low MSD %R value for hexachlorocyclopentadiene of 1%, and high RPD values for bis(2-chloroethyl)ether, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, hexachloroethane, 4-chloroaniline, hexachlorocyclopentadiene, 2,6-dinitrotoluene, dimethylphthalate, diethylphthalate, 3,3'-dichlorobenzidene and benzoic acid of 31%, 46%, 43%, 35%, 38%, 84%, 169%, 31%, 40%, 40%, 45% and 33%, respectively. Hexachlorocyclopentadiene has been qualified (J) for positive results and (UJ) for non-detects in all samples. All other above compounds are non-detect in all samples and no further qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks SBLKRU (05/28/99) and SBLKSF (06/7/99) were free of contamination. No qualifications were required.

Field, equipment blank - Equipment blank EB052499 exhibited di-n-butylphthalate, bis(2-ethylhexylphthalate), and acetophenone at 2 ug/L, 7 ug/L, and 1 ug/L, respectively. Bis(2-ethylhexylphthalate) has been qualified (U) in samples BHGLSWMU36001-02, BHGLSWMU36003-03 and BHGLAOC15001-05.

Field Duplicates - Field duplicate results for samples DUP13 and BHGLSWMU36003-02 are non-detect No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - All results between the MDL and PQL have been qualified (F).

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the MS/MSD, Field Blank, TICs, and compound quantitation sections of this report with the exception of two compounds which were rejected due to calibration problems in most samples. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Semivolatiles SDG 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
BHGLSWMU36001-01	Hexachlorocyclopentadiene	410	U	410	UJ
	Benzyl alcohol	410	U	410	R
BHGLSWMU36001-02	Hexachlorocyclopentadiene	380	U	380	UJ
	Bis(2-Ethylhexyl)phthalate	51	J	380	U
BHGLSWMU-36001-03	Hexachlorocyclopentadiene	390	U	390	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Benzyl alcohol	390	U	390	R
BHGLSWMU-36001-04	Hexachlorocyclopentadiene	410	U	410	UJ
	2,4,5-Trichlorophenol	2100	U	2100	R
	Benzyl alcohol	410	U	410	R
BHGLSWMU-36002-01	Hexachlorocyclopentadiene	390	U	390	UJ
	Benzyl alcohol	390	U	390	R
BHGLSWMU-36002-02	Hexachlorocyclopentadiene	390	U	390	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Benzyl alcohol	390	U	390	R
BHGLSWMU-36002-03	Hexachlorocyclopentadiene	400	U	400	UJ

Qualification Summary Table - Semivolatiles SDG: 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	2,4,5-Trichlorophenol	2000	U	2000	R
	Benzyl alcohol	400	U	400	R
BHGLSWMU-36003-01	Hexachlorocyclopentadiene	400	U	400	UJ
	2,4,5-Trichlorophenol	2000	U	2000	R
	Benzyl alcohol	400	U	400	R
BHGLSWMU-36003-02	Hexachlorocyclopentadiene	400	U	400	UJ
	2,4,5-Trichlorophenol	2000	U	2000	R
	Benzyl alcohol	400	U	400	R
BHGLSWMU-36003-03	Hexachlorocyclopentadiene	400	U	400	UJ
	Bis(2-ethylhexyl)phthalate	140	J	400	U
	Benzyl alcohol	400	U	400	R
DUP13	Hexachlorocyclopentadiene	380	U	380	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Benzyl alcohol	380	U	380	R
BHGLA0C015001-01	Naphthalene	41	J	41	F
	Hexachlorocyclopentadiene	380	U	380	UJ
	Acenaphthene	300	J	300	F
	Dibenzofuran	180	J	180	F
	Fluorene	310	J	310	F
	Dibenzo(a,h)anthracene	160	J	160	F
	Benzyl alcohol	380	U	380	R
BHGLA0C015001-02	Hexachlorocyclopentadiene	380	U	380	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Benzyl alcohol	380	U	380	R
BHGLA0C015001-03	Hexachlorocyclopentadiene	380	U	380	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Fluoranthene	40	J	40	F
	Benzyl alcohol	380	U	380	R
BHGLA0C015001-04	Hexachlorocyclopentadiene	380	U	380	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Benzyl alcohol	380	U	380	R
BHGLA0C015001-05	Hexachlorocyclopentadiene	370	U	370	UJ
	2,4,5-Trichlorophenol	1900	U	1900	R
	Bis(2-ethylhexyl)phthalate	42	J	370	U
	Benzyl alcohol	370	U	370	R
EB052499	Hexachlorocyclopentadiene	10	U	10	UJ
	Di-n-butylphthalate	2	J	2	F
	Bis(2-ethylhexyl)phthalate	7	J	7	F
	Acetophenone	1	J	1	F

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APPENDIX IX VOLATILE ORGANIC COMPOUNDS
USEPA SW846 Method 8260B - Level III Review

Site: Naval Air Station Fort Worth - D015 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 13, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Cathy Shelby

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU36001-01	9905G510-001	Soil
BHGLSWMU36001-02	9905G510-002	Soil
BHGLSWMU36001-02MS	9905G510-002MS	Soil
BHGLSWMU36001-02MSD	9905G510-002MSD	Soil
BHGLSWMU36001-03	9905G510-003	Soil
BHGLSWMU36001-04	9905G510-004	Soil
BHGLSWMU36002-01	9905G510-005	Soil
BHGLSWMU36002-02	9905G510-006	Soil
BHGLSWMU36002-03	9905G510-007	Soil
BHGLSWMU36003-01	9905G510-008	Soil
BHGLSWMU36003-02	9905G510-009	Soil
BHGLSWMU36003-03	9905G510-010	Soil
DUP13	9905G510-011	Soil
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water
TB052499	9905G510-018	Water

Holding Times - All samples were analyzed within the recommended holding time of 14 days for preserved water and soil samples as specified in Table 5 1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 01/24/99-06/3/99 and 03/09/99-05/31/99 exhibited acceptable %RSD and mean RRF values. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/03/99 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 06/03/99 (1039) exhibited a high %D value for dichlorodifluoromethane of 93.4%. Dichlorodifluoromethane has been rejected (R) in sample BHGLSWMU36001-01.

The continuing calibration analyzed on 06/04/99 exhibited a high %D value for dichlorodifluoromethane of 75.7%. Dichlorodifluoromethane has been rejected (R) in samples BHGLSWMU36001-02, BHGLSWMU36001-03, BHGLSWMU36001-04, and BHGLSWMU36002-03.

The continuing calibration analyzed on 06/06/99 exhibited a high %D value for dichlorodifluoromethane of 53.2%. Dichlorodifluoromethane has been rejected (R) in samples BHGLSWMU36002-01, BHGLSWMU36002-02, BHGLSWMU36003-01, BHGLSWMU36003-02, BHGLSWMU36003-03, DUP13, BHGLAOC015001-02, BHGLAOC015001-03.

The continuing calibration analyzed on 06/07/99 exhibited a high %D value for dichlorodifluoromethane and 1,1,2-trichloroethane of 53.1% and 25.8%, respectively. Both compounds have been rejected (R) in samples BHGLAOC015001-01, BHGLAOC015001-04 and BHGLAOC015001-05.

Surrogates - Samples TB052499 and EB052499 exhibited high %R values for dibromofluoromethane of 127% and 129%, respectively, however, this compound is not a reported analyte and no qualifications were required.

Laboratory Control Samples - LCS samples VBLKAABS, VBLKA1BA, and VBLKAGBS exhibited acceptable %R values. No qualifications were required.

LCS sample VBLKAEBS exhibited a high %R value for dichlorodifluoromethane of 147%, however, all associated results are non-detect and no qualifications were required.

MS/MSD - MS/MSD sample BHGLSWMU36001-02 exhibited acceptable %R and RPD values. No qualifications were required.

Internal Standard (IS) Area Performance - Samples BHGLAOF015001-02 and BHGLAOC015001-03 exhibited low area counts for internal standard 1,4-dichlorobenzene-d4. All associated compounds have been qualified (J/UJ).

Method Blank - Method blanks VBLKAI (06/03/99), VBLKAE (06/04/99), VBLKAG (06/06/99), VBLKAC (06/07/99) and VBLKAA (06/03/99) were free of contamination. No qualifications were required.

Trip, field, equipment blank - Trip blank TB052499 was free of contamination. No qualifications were required.

Equipment blank EB052499 exhibited acetone, methylene chloride, and toluene contamination at 4 ug/L, 0.6 ug/L, and 0.6 ug/L, respectively. Toluene has been qualified (U) in sample BHGLSWMU36002-01.

Field Duplicates - Field duplicate results for samples BHGLSWMU36003-02 and DUP13 are non-detect. No qualifications were required.

Tentatively Identified Compounds (TICs) - All TICs were qualified (T).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the internal standard and field blank section of this report with the exception of one compound which was rejected due to calibration problems in most samples. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table - The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table - Volatiles SDG. 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc.	Qualifier
BHGLSWMU36001-01	Dichlorodifluoromethane	6	U	6	R
BHGLSWMU36001-02	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU36001-03	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU36001-04	Dichlorodifluoromethane	6	U	6	R
BHGLSWMU36002-01	Dichlorodifluoromethane	6	U	6	R
	Toluene	5	J	6	U

Qualification Summary Table - Volatiles SDG. 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
BHGLSWMU36002-02	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU36002-03	Dichlorodifluoromethane	6	U	6	R
BHGLSWMU36003-01	Dichlorodifluoromethane	6	U	6	R
BHGLSWMU36003-02	Dichlorodifluoromethane	5	U	5	R
BHGLSWMU-36003-03	Dichlorodifluoromethane	5	U	5	R
DUP13	Dichlorodifluoromethane	5	U	5	R
BHGLA0C015001-01	Dichlorodifluoromethane	5	U	5	R
	1,1,2-Trichloroethane	5	U	5	R
BHGLA0C015001-02	Dichlorodifluoromethane	4	U	4	R
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	4	U	4	UJ
	1,2-Dibromo-3-Chloropropane	4	U	4	UJ
BHGLA0C015001-03	Dichlorodifluoromethane	5	U	5	R
	1,1,2,2-Tetrachloroethane	2	U	2	UJ
	1,2,3-Trichloropropane	5	U	5	UJ
	1,2-Dibromo-3-Chloropropane	5	U	5	UJ
BHGLA0C015001-04	Dichlorodifluoromethane	5	U	5	R
	1,1,2-Tetrachloroethane	5	U	5	R
BHGLA0C015001-05	Dichlorodifluoromethane	4	U	4	R
	1,1,2-Tetrachloroethane	4	U	4	R

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TAL METALS & CYANIDE
USEPA SW846 Methods 6010A, 7471 - Level III Review

Site: Naval Air Station Fort Worth - DO15 SDG #: 9905G510

Client: HydroGeoLogic, Inc. Date: September 12, 1999

Laboratory: Severn Trent Laboratories, Chicago, IL Reviewer: Nancy Weaver

Client Sample ID	Laboratory Sample ID	Matrix
BHGLSWMU36001-01	9905G510-001	Soil
BHGLSWMU36001-02	9905G510-002	Soil
BHGLSWMU36001-02MS	9905G510-002MS	Soil
BHGLSWMU36001-02MSD	9905G510-002MSD	Soil
BHGLSWMU36001-03	9905G510-003	Soil
BHGLSWMU36001-04	9905G510-004	Soil
BHGLSWMU36002-01	9905G510-005	Soil
BHGLSWMU36002-02	9905G510-006	Soil
BHGLSWMU36002-03	9905G510-007	Soil
BHGLSWMU36003-01	9905G510-008	Soil
BHGLSWMU36003-02	9905G510-009	Soil
BHGLSWMU36003-03	9905G510-010	Soil
DUP13	9905G510-011	Soil
BHGLAOC015001-01	9905G510-012	Soil
BHGLAOC015001-02	9905G510-013	Soil
BHGLAOC015001-03	9905G510-014	Soil
BHGLAOC015001-04	9905G510-015	Soil
BHGLAOC015001-05	9905G510-016	Soil
EB052499	9905G510-017	Water

Holding Times: All samples were extracted and analyzed within the recommended holding time of 28 days for mercury, 180 days for all other metals, and 14 days for cyanide as specified in Table 5.1.2-1 of the NAS Fort Worth JRB Basewide Quality Assurance Project Plan (QAPP), February, 1998. No qualifications were required.

Calibration: All initial and continuing calibration verifications exhibited acceptable %R values. No qualifications were required.

Method Blanks: The water preparation blank PBW (06/10/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic, cadmium, nickel, and tin have been qualified (UJ) in sample EB052499. Copper, vanadium, and zinc have been qualified (U) in sample EB052499.

The soil preparation blank PBS (06/14/99), initial and continuing calibration blanks exhibited contamination for several compounds which warranted the following qualifications. Arsenic has been qualified (J) in samples BHGLSWMU36001-04, BHGLAOC015001-03, and BHGLAOC015001-05. Beryllium has been qualified (J) in samples BHGLSWMU36001-04, BHGLAOC015001-04, and BHGLAOC015001-05. Cadmium has been qualified (J/UJ) in all soil samples. Tin has been qualified (U) in sample BHGLSWMU36003-02.

Field and equipment blanks: Equipment blank EB052499 exhibited barium contamination at 0.80 ug/L, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

ICP Interference Check Sample: All % recovery values met the QC acceptance criteria. No qualifications were required.

LCS: The LCS analysis met the QC acceptance criteria of as specified in the QAPP. No qualifications were required.

ICP Serial Dilutions: An ICP serial dilution sample was not analyzed with this data package.

Matrix Spike: Matrix spike sample BHGLSWMU36001-02 exhibited low %R values for antimony, copper, selenium, and silver of 28.7%, 41.6%, 63.3%, and 72.6%, respectively. All four compounds have been qualified (J/UJ) in all soil samples.

Matrix Spike Duplicate: Matrix duplicate sample BHGLSWMU36001-02 exhibited acceptable RPD values. No qualifications were required.

Field Duplicates: Field duplicate results are summarized in the following table. Beryllium, cadmium, and lead have been qualified (J) in both samples.

Compound	DUP13 mg/kg	BHGLSWMU36003-02 mg/kg	RPD
Arsenic	3 7	3.9	5
Barium	67.6	80.4	17
Beryllium	0.61	0 86	34*
Cadmium	0 09	0 05	57*
Chromium	18 2	14.2	25
Cobalt	4 4	5.1	15

Compound	DUP13 mg/kg	BHGLSWMU36003-02 mg/kg	RPD
Copper	8.1	10.2	23
Lead	46 7	10 2	128*
Nickel	8.6	10.7	22
Tin	1.5	1.9	24
Vanadium	22.7	26.7	16
Zinc	21.1	25.0	17

Graphite Furnace Atomic Absorption (GFAA) Analysis: Several samples exhibited a postdigestion spike for selenium, silver, and thallium analysis out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance. The laboratory flagged these results (W) and the reviewer further qualified these results (J/UJ).

Compound Quantitation: All results between the MDL and the PQL have been qualified (F).

Comments: The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, matrix spike, field duplicates, GFAA, and compound quantitation sections of this report. The NAS Fort Worth JRB Basewide Quality Assurance Project Plan, February, 1998, data validation criteria were used in evaluating the data in this summary report.

Data Validation Summary Table: The following table summarizes all qualifications as described in this data validation summary report.

Qualification Summary Table – Metals/Cyanide SDG: 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
BHGLSWMU36001-01	Antimony	.42	UN	.42	UJ
	Arsenic	3 3	B	3.3	F
	Cadmium	16	B	.16	~~J~~ F
	Cobalt	4.0	B	4.0	F
	Copper	8 8	BN	8.8	~~J~~ F
	Nickel	9.2	B	9.2	F
	Selenium	.79	UN	.79	UJ
	Silver	.10	UN	.10	UJ
	Thallium	.19	UW	.19	UJ
	Tin	2 4	B	2.4	F
	Vanadium	27.6	B	27.6	F
	Zinc	24 3	B	24.3	F
BHGLSWMU36001-02	Antimony	.37	UN	.37	UJ
	Arsenic	4.2	B	4.2	F

Qualification Summary Table – Metals/Cyanide SDG. 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc	Qualifier
	Cadmium	.21	B	21	~~J~~ F
	Cobalt	4.7	B	4.7	F
	Copper	23.3	N	23.3	J
	Nickel	9.5	B	9 5	F
	Selenium	.16	UWN	16	UJ
	Silver	.10	UWN	.10	UJ
	Tin	2 0	B	2 0	F
	Vanadium	23.8	B	23.8	F
BHGLSWMU36001-03	Antimony	36	UN	.36	UJ
	Arsenic	4 2	B	4.2	F
	Cadmium	.07	B	07	J
	Copper	9 9	N	9.9	J
	Selenium	17	UWN	.17	UJ
	Silver	.10	UWN	.10	UJ
	Thallium	.20	UW	.20	UJ
	Tin	1.8	B	1 8	F
	Zinc	23 6	B	23.6	F
BHGLSWMU36001-04	Antimony	.43	UN	.43	UJ
	Arsenic	1.5	B	1.5	~~J~~ F
	Beryllium	.26	B	.26	~~J~~ F
	Cadmium	.18	B	.18	~~J~~ F
	Chromium	6.8	B	6.8	F
	Cobalt	2.0	B	2.0	F
	Copper	4.3	BN	4.3	~~J~~ F
	Nickel	4.6	B	4.6	F
	Selenium	18	UWN	.18	UJ
	Silver	.11	UN	.11	UJ
	Thallium	21	UW	.21	UJ
	Tin	1.8	B	1 8	F
	Vanadium	11 8	B	11.8	F
	Zinc	15 8	B	15.8	F
BHGLSWMU36002-01	Antimony	41	UN	41	UJ
	Arsenic	3.9	B	3 9	F
	Cadmium	.10	B	.10	~~J~~ F
	Cobalt	3.9	B	3.9	F
	Copper	7.4	BN	7.4	~~J~~ F
	Nickel	8.3	B	8.3	F
	Selenium	.17	UWN	.17	UJ
	Silver	.11	UWN	.11	UJ
	Tin	2.0	B	2.0	F
	Vanadium	25.7	B	25.7	F
	Zinc	21.4	B	21.4	F
BHGLSWMU36002-02	Antimony	.40	UN	.40	UJ
	Arsenic	3.5	B	3.5	F
	Cadmium	.09	B	.09	~~J~~ F
	Cobalt	3.5	B	3 5	F
	Copper	8.7	BN	8.7	~~J~~ F
	Nickel	8.7	B	8.7	F
	Selenium	.16	UWN	.16	UJ

Qualification Summary Table – Metals/Cyanide SDG 9905G510					
Sample No	Compound(s)	Reported		Validated	
		Conc	Qualifier	Conc	Qualifier
	Silver	.10	UWN	10	UJ
	Tin	1.7	B	1 7	F
	Vanadium	21.4	B	21.4	F
	Zinc	21.2	B	21.2	F
BHGLSWMU36002-03	Antimony	.38	UN	.38	UJ
	Arsenic	3.7	B	3.7	F
	Cadmium	.05	U	.05	UJ
	Copper	10.3	N	10.3	J
	Selenium	15	UWN	15	UJ
	Silver	10	UWN	10	UJ
	Tin	1 7	B	1.7	F
	Vanadium	27 5	B	27 5	F
	Zinc	20 8	B	20 8	F
BHGLSWMU36003-01	Antimony	.38	UN	38	UJ
	Arsenic	3.8	B	3 8	F
	Cadmium	.11	B	.11	~~J~~ F
	Cobalt	4.7	B	4 7	F
	Copper	7 3	BN	7 3	~~J~~ F
	Nickel	9.3	B	9.3	F
	Selenium	.16	UWN	.16	UJ
	Silver	.10	UWN	.10	UJ
	Thallium	.18	UW	.18	UJ
	Tin	1.6	B	1.6	F
	Vanadium	23.3	B	23.3	F
	Zinc	27.4	B	27 4	F
BHGLSWMU36003-02	Antimony	.46	BN	.46	~~U~~ F
	Arsenic	3.9	B	3 9	F
	Beryllium	86		.86	J
	Cadmium	.05	B	05	~~J~~ F
	Cobalt	5 1	B	5.1	F
	Copper	10.2	N	10.2	J
	Lead	10.2		10.2	J
	Selenium	16	UWN	.16	UJ
	Silver	.10	UWN	.10	UJ
	Thallium	20	UW	.20	UJ
	Tin	1 9	B	1.9	F
	Vanadium	26.7	B	26.7	F
	Zinc	25 0	B	25 0	F
BHGLSWMU36003-03	Antimony	.38	UN	.38	UJ
	Arsenic	3.7	B	3.7	F
	Cadmium	.15	B	.15	~~J~~ F
	Cobalt	5.1	B	5 1	F
	Copper	10 5	N	10.5	J
	Selenium	14	UWN	.14	UJ
	Silver	.09	UWN	.09	UJ
	Thallium	.16	UW	16	UJ
	Tin	1.9	B	1.9	F
	Vanadium	26.7	B	26.7	F

Qualification Summary Table – Metals/Cyanide SDG: 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
DUP13	Antimony	38	UN	.38	UJ
	Arsenic	3.7	B	3.7	F
	Beryllium	.61		61	J
	Cadmium	.09	B	.09	J F
	Cobalt	4.4	B	4.4	F
	Copper	8.1	BN	8 1	J F
	Lead	46.7		46.7	J
	Nickel	8.6	B	8.6	F
	Selenium	.16	UWN	.16	UJ
	Silver	.10	UWN	10	UJ
	Tin	1.5	B	1.5	F
	Vanadium	22 7	B	22.7	F
	Zinc	21 1	B	21 1	F
BHGLAOC015001-01	Antimony	37	UN	.37	UJ
	Arsenic	4.2	B	4.2	F
	Cadmium	05	U	05	UJ
	Copper	7 4	BN	7.4	J F
	Selenium	16	UWN	.16	UJ
	Silver	10	UWN	.10	UJ
	Tin	1 8	B	1.8	F
	Zinc	21.7	B	21 7	F
BHGLAOC015001-02	Antimony	.39	UN	.39	UJ
	Arsenic	4 6	B	4.6	F
	Cadmium	.13	B	.13	J F
	Cobalt	4 5	B	4 5	F
	Copper	6.8	BN	6 8	J F
	Nickel	8.9	B	8.9	F
	Selenium	16	UWN	.16	UJ
	Silver	.10	UWN	.10	UJ
	Thallium	.19	UW	.19	UJ
	Tin	1 5	B	1.5	F
	Vanadium	27.2	B	27 2	F
	Zinc	20 5	B	20.5	F
BHGLAOC015001-03	Antimony	.35	UN	.35	UJ
	Arsenic	2.7	B	2.7	J F
	Cadmium	08	B	.08	J F
	Cobalt	2.8	B	2 8	F
	Copper	5.5	BN	5.5	J F
	Nickel	6.3	B	6.3	F
	Selenium	.16	UWN	.16	UJ
	Silver	10	UWN	.10	UJ
	Tin	1.5	B	1 5	F
	Vanadium	17 8	B	17.8	F
	Zinc	16 0	B	16.0	F
BHGLAOC015001-04	Antimony	.39	UN	.39	UJ
	Arsenic	3.1	B	3.1	F
	Cadmium	.09	B	09	J F
	Chromium	8 1	B	8 1	J F
	Cobalt	3.1	B	3.1	F

Qualification Summary Table – Metals/Cyanide SDG· 9905G510					
Sample No.	Compound(s)	Reported		Validated	
		Conc.	Qualifier	Conc.	Qualifier
	Copper	3.1	BN	3 1	F
	Nickel	6.4	B	6 4	~~J~~ F
	Selenium	.16	UWN	.16	F
	Silver	.10	UN	.10	UJ
	Thallium	.19	UW	.19	UJ
	Tin	1.3	B	1.3	UJ
	Vanadium	15.1	B	15.1	F
	Zinc	13.6	B	13.6	F
BHGLAOC015001-05	Antimony	.36	UN	.36	UJ
	Arsenic	2 6	B	2 6	~~J~~ F
	Beryllium	.16	B	16	~~J~~ F
	Cadmium	.07	B	07	~~J~~ F
	Chromium	5.3	B	5.3	F
	Cobalt	2.8	B	2.8	F
	Copper	2.4	BN	2.4	~~J~~ F
	Nickel	4.6	B	4 6	F
	Selenium	.15	UWN	15	UJ
	Silver	.09	UN	.09	UJ
	Thallium	18	UW	.18	UJ
	Tin	1.2	B	1.2	F
	Vanadium	11.2	B	11.2	F
	Zinc	9.8	B	9.8	F
EB052499	Arsenic	3 5	U	3.5	UJ
	Barium	.80	B	.80	F
	Cadmium	.30	U	.30	UJ
	Copper	2.0	B	2.0	URL
	Nickel	1.7	U	1.7	UJ
	Tin	4.4	U	4.4	UJ
	Vanadium	1.0	B	1.0	URL
	Zinc	11 4	B	11.4	URL

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ADMINISTRATIVE RECORD

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