U.S. Army Corps
of Engineers

FINAL
CORRECTIVE ACTION PLAN - PART A

PHASE I SITE INVESTIGATION OF THE AIRPORT HYDRANT SYSTEM (BUILDING 728)
FACILITY ID: 9025035 and 9025049

at

HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA

under

Contract No. DACA21-93-D-0049
Delivery Order No. 11

August 1996

Submitted to:

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH, GEORGIA

Prepared by:

METCALF & EDDY, INC.
ATLANTA, GEORGIA

DOCUMENT 3

This Final CAP - Part A was prepared in accordance with the Statement of Work (SOW) prepared by the United States Army Corps of Engineers (USACE) for the investigation of Building 728, Pipeline A, and Pipeline B at Hunter Army Airfield. This Document was prepared under the supervision of David Wilderman, P.G., Project Manager. Requests for the document must be referred to Commander, U.S. Army Corps of Engineers, CESAS-PM-H, 100 West Oglethorpe Avenue, Savannah, Georgia 31401-3640.

This document was reviewed and approved by:

David M. Wilderman, P.G.

Project Manager
Title

8.7.96
Date

Georgia Department of Natural Resources

Environmental Protection Division

Underground Storage Tank Management Program
4244 International Parkway, Suite 104, Atlanta, Georgia 30354
Lonice C. Barrett, Commissioner
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CORRECTIVE ACTION PLAN
PART A

Facility Name: Hunter Army Airfield

Street Address: Building 728 and Northern Fuel Battery

City: Savannah County Chatham	Facility ID: 9025035 and 9025049
Submitted by UST Owner/Operator:	**Prepared by:**
Name: Mr. John Spears (DEH-AFZP-DEV)	Name: David Wilderman
Company: U.S. Army Corps of Engineers	Company: Metcalf & Eddy, Inc.
Address: Building 1139	Address: 1201 Peachtree Street, NE
	400 Colony Square, Suite 1101
City: Ft. Stewart State: GA	City: Atlanta State: GA
Zip Code: 31314-5000	Zip Code: 30361

I. PLAN CERTIFICATION:

A. UST Owner/Operator

I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and complete, and the plan satisfies all criteria and requirements of Rule 391-3-15-.09 of the Georgia Rules for Underground Storage Tank Management.

Name: ____________________

Signature: ____________________ Date: ____________________

B. Professional Engineer or Professional Geologist

I hereby certify that I have directed the field work and preparation of this plan, in accordance with State Rules and Regulations. As a registered geologist and/or engineer, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: David M. Wilderman, PG

Signature:

Date: 8-7-96

Georgia Stamp or Seal

Please complete the following form, check all of the boxes below that apply, and attach supporting documentation (such as narrative, figures, tables, maps, boring/well logs, etc.) where specified and applicable. Supporting documentation should be three-hole punched and prepared in conformity with the attached guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan - Part A (CAP-A Content," GUST-7A.)

II. INITIAL RESPONSE REPORT:

A. Initial Abatement:

☐ No Action Required

■ Further Release or Migration of Contaminants Prevented - See supporting documentation SECTION II.A.

☐ Fire and Safety Hazards from Vapors and/or Free Product Monitored and Mitigated

☐ Other (specify) ____________________

____

B. Free Product Removal:

☐ No Free Product Identified as Originating from Release

■ Free Product (Non-Aqueous Phase Hydrocarbons) Removed by:

- ☐ Manual Bailing
- ☐ Passive Skimming
- ■ Automated Skimming. See supporting documentation, Section II.B.
- ☐ Automated Total Fluids Pumping, with Treatment System and Approved Wastewater Discharge
- ☐ Other (specify) ____________________

  ____

C. Tank History

■ Site Map Attached Identifying Former and/or Existing USTs - See Figures 1 and 2

☐ Not Applicable

D. Initial Site Characterization:

■ Site Map: include the following items on an attached site map. See supporting documentation Section II.D and Plates 1A and 1B.

- Tank Pit Area
- Piping Trenches
- Dispensers
- Sewer Lines (if present)
- Water Lines
- North Arrow
- Sample Locations (with sample numbers and depths)
- Tanks with ID#s, corresponding to Notification Form 7530-1
- Scale __1__ in = __100__ ft

1. Regulated Substance Released - See supporting documentation SECTION II.D.1

■ Gasoline ☐ Diesel ■ Kerosene ☐ Waste Oil

☐ Other ____________________

2. Source of Contamination - See supporting documentation SECTION II.D.2

Number of USTs: in use __0__; closed/removed __25__

☐ Existing UST System(s): ☐ piping ☐ Tank ☐ other

■ Former UST System(s): ☐ piping ☐ Tank ☐ other

3. Impacted Environmental Media - See supporting documentation SECTION II.D.3.

■ Groundwater (see Plates 3A and 3B)

  ■ Free product

  ■ Dissolved (BTEX and/or PAH) contamination exceeding:

    ■ In-stream water quality standards

    ☐ Drinking Water Maximum Contaminant Levels (MCLs)

■ Soil Exceeding: (see Plates 2A and 2B)

  ☐ Laboratory Detection Limits, but TPH is vertically delineated to Below Detection Limits (BDL) above the groundwater table or a groundwater sample from the worst-case location has BTEX and/or PAHs below applicable Drinking and/or In-stream water quality standards.

  ☐ Thresholds listed in Table A, Rule 391-3-15-.09

  ■ Thresholds listed in Table B, Rule 391-3-15-.09

  ■ Alternate Threshold Levels (ATLs) (Reference GUST-CAPA Appendix I)

D. Initial Site Characterization (continued):

- ☐ Drinking Water Supply Impacted
- ☐ Surface Water Impacted
- ■ Attach Laboratory Analytical Data: the following items must be included - See Appendix J
  - Laboratory Method
  - Date of Sampling
  - Date of Analysis
  - Detection Limits
  - Signed Chain of Custody
  - Quality Control Data

4. Local Water Resources - See supporting documentation SECTION II.D.4.

- ■ Drinking Water Supplies Located In:

  High or average groundwater pollution susceptibility area:*

  - ■ Public water systems within 2.0 miles
  - ☐ Non-public water systems within 0.5 mile

  Low groundwater pollution susceptibility area:*

  - ☐ Public water systems within 1.0 mile
  - ☐ Non-public water systems within 0.25 mile

* As defined by the Groundwater Pollution Susceptibility Map of Georgia.

- ■ Surface Water Bodies: Distance (nearest) 300 feet (regardless of hydraulic gradient)
- ■ Attach Documentation of Water Supply Survey and Field Reconnaissance - see Table 13

5. Other Hydrogeologic Data (specify values) - See supporting documentation SECTION II.D.5.

- ■ Depth to Groundwater (shallowest) 1.2 feet
- ■ Groundwater Flow Direction Northwest
- ■ Hydraulic Gradient 0.010 (average)

6. Corrective Action Completed Or In-Progress - See supporting documentation SECTION II.D.6.

- ☐ USTs/Source Removed (after confirmed release)
- ■ Excavation and Treatment/Disposal of Contaminated Backfill Material & Native Soils
  - ☐ Attach manifests of proper soil disposal
- ■ Other (specify) Automated Free Product Recovery system installed and operated since January 1996.

D. Initial Site Characterization (continued):

7. Conclusions and Recommendations - See supporting documentation SECTION II.D.7.

☐ No Further Action Required, including the preparation or implementation of a Site Investigation Plan

OR

■ Prepare Corrective Action Plan - Part B, with a schedule for SIP implementation and submittal of CAP-Part B

8. Site Ranking

Environmental Sensitivity Score: 152,520,000
(see Appendix II)

III. SITE INVESTIGATION PLAN: - See supporting documentation SECTION III.

A. Horizontal and Vertical Extent of Contaminants In:

■ Soil

■ Groundwater

■ Free product

■ Dissolved phase

■ Surface Water

B. Vadose Zone and Aquifer Characteristics:

■ Vertical Soil Permeability (Optional)

☐ Infiltration Rate (Optional)

■ Saturated Horizontal Hydraulic Conductivity

■ Total Organic Carbon (Optional)

■ Dissolved Iron (Optional)

■ Effective Porosity

■ Seepage Velocity

■ Grain-size Distribution (Optional)

☐ Total Petroleum Hydrocarbons (Optional)

☐ Pilot Test(s) (Optional)

☐ Other (specify) ______

IV. PUBLIC NOTICE:

☐ Certified Letters to Adjacent and Potentially Affected Property Owners and Local Officials

☐ Legal Notice in Newspaper, as pre-approved by EPD

■ Other EPD Approved Method (specify): See supporting documentation, Section IV.

V. CLAIM FOR REIMBURSEMENT: (For GUST Trust Fund sites only) N/A

☐ GUST Trust Fund Application (GUST-36), must be attached if applicable

☐ Cost Proposal

☐ Non-Reimbursable Costs

OR

☐ Reimbursable Costs

☐ Invoices and Proofs-of-Payment, per GUST-91

☐ Total Projected Costs to implement the Site Investigation Report (SIR) and prepare data for the Site Investigation Review Meeting, per GUST-91

☐ Payment Schedule for Reimbursement

SITE RANKING FORM

1. Soil Contamination

a. Total PAHs -
Maximum Concentration

■ > 10 mg/kg = 50

☐ 1 - 10 mg/kg = 25

☐ 0.66 - 0.99 mg/kg= 10

* < 0.660 = 0

b. Total BTEX -
Maximum Concentration

☐ > 150 mg/kg = 50

☐ 50 - 149.9 mg/kg = 40

☐ 10 - 49.9 mg/kg = 25

■ 0.5 - 9.9 mg/kg = 10

☐ 0.005 - .499 mg/kg = 1

< 0.005 mg/kg = 0

c. Depth to Groundwater (bls = Below Land Surface)

■ < 10' bls = 10

☐ 10' - 25' bls = 5

☐ 25' - 50' bls = 2

☐ > 50' bls = 1

2. Groundwater Contamination

a. Free Product (Nonaqueous-phase liquid hydrocarbons)

■ > 6" = 2,000

☐ 1/8" = 6" = 1,500

☐ Sheen - 1/8" = 250

☐ No free product = 0

b. Dissolved Benzene -
Maximum Concentration

☐ > 10,000 μg/L = 250

☐ 1,000 - 10,000 μg/L= 100

■ 100 - 1,000 μg/L = 50
(MW11 290)

☐ 5 - 100 μg/L = 10

☐ <5 μg/L = 0

If (1.a.) + 1.b.) + (2.a.) + 2.b) is <1, and the CAP is complete, then no further action is required. Go to summary.

3. Distance from Contaminant Plume to Point of Withdrawal for Water Supply

A. Public *				B. Non-public			
Category	Number Identified	Score	Total	Category	Number Identified	Score	Total
Impacted	0 X	100 =	0	Impacted	0 X	100 =	0
< 500'	1 x 0.5 x	50 =	50	< 100'	0 x 0.5 x	26 =	0
500' - 1/4 mi.	0 x 0.5 x	20 =	0	100' - 500'	0 x 0.5 x	10 =	0
1/4 mi - 1 mi	2 x 0.5 x	10=	20	500' - 1/4 mi	0 x 0.5 x	6 =	0
1 mi - 2 mi	7 x 0.5 x	6 =	42	1/4 - 1/2 mi	0 x 0.5 x	4 =	0
> 3 mi	N/A	0 =	0	> 1/2 mi	N/A	0 =	0
		A. Subtotal*	112			B. Subtotal	0

Note: If site is in lower susceptibility area, do not use the shaded area.

4. Distance from Contaminant Plume to Surface-Waters or Utility Trenches Below the Water Table

- ☐ Impacted = 100
- ■ < 500' = 12
- ☐ 500' - 1,000' = 6
- ☐ > 1,000 = 1

5. Susceptibility Area Multiplier

- ☐ If site is located in a Low Ground Water Pollution Susceptibility Area, and no points of withdrawal for water supply lie within 500' and no surface water bodies or submerged utility trenches lie within 500' of the source: = 0.5
- ■ All other sites = 1

SUMMARY

[(1.a. + 1.b.) X (1.c.) + (2.a. + 2.b.) X (3.a. + 3.b. + 4.)] X [(5.)] = 152,520,000
Environmental Sensitivity Score

[(50 + 10)x(10) + (2000 + 50) X (112 + 0 + 12)] X (1)
(60) (10) + (2050) (124) (1)
600 + 254,200
152,520,000

* This score does not reflect that all public potable wells located within 1 mile of the study site develop water from a confined aquifer that is hydraulically isolated from contact with the impacted shallow aquifer at former Building 728. No private wells were identified within 0.5 mile of Building 728.

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SUPPORTING DOCUMENTATION
CORRECTIVE ACTION PLAN - PART A
EPD FACILITY ID No. 9025035 and 9025049

HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
CONTRACT NO. DACA21-93-D-0049
DELIVERY ORDER NO. 0011

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LIST OF ACRONYMS

ACE	Anderson Columbia Environmental, Inc.
AES	Applied Engineering & Science
ARAR	Applicable or Relevant and Appropriate Requirements
ASTM	American Society of Testing and Materials
AT&E	Atlanta Testing & Engineering
bls	below land surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
CCWE	Constituent Concentration in Waste Extract
CDAP	Chemical Data Acquisition Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COE	Corps of Engineers
DIOF	Deionized organic-free
DNR	Department of Natural Resources
DO	Delivery Order
DOT	Department of Transportation
DQO	Data Quality Objectives
DRO	Diesel Range Organics
EM	Engineer Manual
EPA	Environmental Protection Agency
EPD	Environmental Protection Division (State of Georgia, Department of Natural Resources)
ER	Equipment Rinsates
FID	Flame ionization detector
ft/day	feet per day
ft/ft	feet per feet
°F	degrees fahrenheit
GC	Gas chromatograph
GPR	Ground-Penetrating Radar
GRO	Gasoline Range Organics
GUST	Georgia Underground Storage Tank
HA	Hand Auger
HAAF	Hunter Army Airfield
HP-II	Hydropunch II
HQ	Headquarters
HSA	Hollow Stem Auger
ID	Inside diameter
IDW	Investigation-derived waste
MCL	Maximum Contaminant Level
M&E	Metcalf & Eddy, Inc.
mg/L	Milligrams per liter
msl	mean sea level

ACRONYMS (Continued)

MS/MSD	Matrix spike/matrix spike duplicate
MW	Monitoring Well
NAVD	North American Vertical Data
NGVD	National Geodetic Vertical Datum
NIST	National Institute of Sciences and Technology
NSF	National Sanitation Foundation
OD	Outside diameter
OVA	Organic Vapor Analyzer
PAH	Polynuclear Aromatic Hydrocarbons
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
ppb	Parts per billion
ppm	Parts per million
PRP	Potentially Responsible Party
PVC	Polyvinyl chloride
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Control
QCSR	Chemical data invalidation report
QM	Quarterly monitoring
QPR	Quarterly Progress Report
RCRA	Resource Conservation and Recovery Act
RF	Response Factor
RPD	Relative Percent Difference
SADL	South Atlantic Division Laboratory
SAV	Savannah District
SDG	Sample Delivery Group
SCS	Soil Conservation Service
SDWA	Safe Drinking Water Act
SI	Site Investigation
SL	Savannah Laboratories
SSI	Sensors & Software, Inc.
SOW	Scope of Work
SPH	Separate Phase Hydrocarbons
SSS	Split Spoon Sample
SPT	Standard Penetration Test
SVOC	Semivolatile organic compound
TAT	Technical Advisory Team
TB	Trip Blanks
TCLP	Toxicity Characteristic Leaching Procedure
TOC	Top of Casing
TRPH	Total Recoverable Petroleum Hydrocarbons
TVHC	Total Volatile Hydrocarbon Compounds

ACRONYMS (Continued)

UST	Underground storage tank
USACE	United States Army Corps of Engineers
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compound
WQS	Water Quality Standards

LIST OF REFERENCES

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Miller, James A., 1986, Hydrogeologic Framework of the Floridan Aquifer System in Florida and in parts of Georgia, Alabama, and South Carolina, U.S. Geological Survey Professional Paper 1403-B, 91p.

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United States Department of Agriculture, Soil Conservation Service, March 1974, Soil Survey of Bryan and Chatham Counties, Georgia, U.S. Government Printing Office, Washington, D.C.

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INTRODUCTION

Information presented in the following sections of this Supporting Documentation are arranged in the order they are referenced in the "GUST-CAPA.FOR" form, dated November 1995. The section titles in this Supporting Documentation are identical to the section titles on the form for simplicity of reference. Information required by the Georgia Environmental Protection Division is presented herein. Metcalf & Eddy, Inc. (M&E) was retained by the U.S. Army Corps of Engineers to conduct an investigation of the Building 728 and former Northern Fuel Battery Area at Hunter Army Airfield (HAAF). Also included in the investigation were the pipelines that serviced the Northern Fuel Battery; Pipeline A and Pipeline B. The layout of the investigation area is provided on **Figure 1**. The EPD Facility number for the four tanks at Building 728 is 9025035. Additional tanks associated with Building 728 include the Northern Fuel Battery Tanks which have an EPD Facility number of 9025049. All references to "the study area" in this CAP-Part A include storage tanks and the gathering pipelines associated with both EPD Facility 9025035 and 9025049.

Section II.A. Initial Abatement

The U.S. Army Corps of Engineers (USACE) directed the removal of all underground storage tanks at the Northern Fuel Battery and Building 728 in June 1994. The location of all underground storage tanks at these facilities is illustrated on **Figure 2**. Anderson Columbia Environmental, Inc. (ACE) was retained by the USACE to close 17 underground storage tanks (USTs) near the Northern Fuel Battery. During initial tank removal activities it was determined that 8 additional USTs were present and would require removal. A total of 25 USTs were removed by ACE under their contract. ACE prepared a report as required under Title 40 Part 280.72 of the Code of Federal Regulation and Georgia Underground Storage Tank Rule Chapter 391-3-15.11. A brief summary of ACE activities is provided in the following excerpt from their Delivery Order #33 Field Report.

On December 29, 1992, ACE personnel arrived on-site to sample the contents of the USTs. A product sample was collected from each tank and analyzed for EPA Methods 239.2 (Total Lead), 1010 (Flash Point), and 602 (BETX). These analyses provide ACE with a hazardous waste determination for the contents of the tank. A reconnaissance of the tank pit areas was made to help determine the sizes of the tanks and to provide ACE with information needed for proper tank removal and closure. The tank contents were removed and disposed of by the facility and not by ACE.

On June 20, 1994, ACE personnel arrived on-site to begin the removal of the tanks on Delivery Order #0033. This work was performed according to the approved site-specific work plan under the field supervision of Mr. Ricky White (ACE) and Mr. Fred Gotthardt (COE). At this time, eight more tanks were discovered in a concrete vault located in the center of the area containing the twelve 25,000 gal. USTs in the vicinity of Building 728. The contents of these additional tanks were sampled.

During the tank removals, a total of 2623.91 tons of contaminated soil was removed, transported and incinerated. Manifests and a Certificate of Incineration can be found in Collection 7 [provided in the ACE Field Report].

On October 10, 1994, ACE personnel completed the work described in D.O. 0033 and demobilized from the site.

Section II.B. Free Product Removal

Metcalf and Eddy, Inc. (M&E) identified free product in one well, MW-8, at former Building 728 on August 3, 1995. Free product was measured at an initial thickness of 1.1 feet. M&E installed an automated free product recovery system in MW-8 in January 1996. Approximately 90 gallons of free product have been recovered as of July 1996. All recovered product and groundwater is stored on-site in a 275 gallon recovery tank. A schematic drawing of the recovery system and specification sheets for system components is provided in **Appendix A**. All recovered product will be reclaimed by a licensed non-hazardous waste hauler as soon as half of the capacity of the recovery tank is reached. Copies of the waste manifests will be available from the USACE project manager within 30 days of removing the recovered product from the site.

Section II.C. Tank History

BUILDING 728 UST AND PIPELINE LOCATIONS AND PAST USE

Hunter Army Airfield (HAAF) occupies approximately 5400 acres of land on the southwest side of Savannah, Chatham County, Georgia (see **Figure 1**). Information provided in the following sections pertains to M&E's investigation of the Building 728 area, Pipeline A, and Pipeline B. The Building 728 site, also referred to as the northern battery, consisted of a group of twelve 25,000-gallon tanks. Tanks were located within a fenced field near Buildings 728 and 723. The tanks were arranged in two parallel rows, each containing six tanks. Eight oil/water separators were located near the center of the "tank farm." A water control pit was also present within the northern portion of the fenced area. Four additional tanks were located approximately 100 feet southeast of the fenced area, next to Building 728 (see **Figure 2**). These 12,000-gallon tanks held aviation fuel and appear to have been part of the hydrant system. A total of 25 tanks and separators were removed in 1992 by ACE: 12 - 25,000 gallon; 4 - 12,000 gallon; 8 - 500 gallon; and 1 - 150 gallon tanks.

The fuel hydrant system at HAAF is comprised of Pipeline A and Pipeline B. Metcalf & Eddy obtained copies of a 1941 facility plan showing the location and layout of Pipelines A and B. The plan showed Pipeline A originating from the Northern Fuel Battery and extending southwest approximately 2,000 feet, where it splits forming a "Y" junction. The eastern split then continued an additional 580 feet where it terminated at a perpendicular angle into a line of five fueling pits. M&E's investigation was originally based on these 1941 facility plans. Field confirmation of the Pipeline A layout was conducted using ground penetrating radar and magnetometer surveys. The surveys confirmed the location of the pipeline in all areas except the western leg of the "Y" and its accompanying fueling pits.

However, another pipe was discovered extending approximately 350 feet west off the main pipeline in front of the existing hangars. The location of Pipeline A is provided on **Figure 2.** Pipeline A is reported to be 12-inch diameter and constructed of steel. The total length of Pipeline A was reported to be about 4,900 feet but only approximately 3,850 feet was confirmed by geophysics.

Pipeline B originates at a transfer pump house and is connected to fill couplings in the center of the railroad tracks adjacent to former Building 728. Pipeline B is shown on **Figure 2.** The pipeline extends southeast to the former eastern battery and then southwest past Hangar 860 terminating in the ramp area. Ten fueling pits were reported along the last segment of the pipeline. Pipeline B was reported to be 8-inch diameter and constructed of steel. The total length of Pipeline B is approximately 5,850 feet.

Historical Fuel System Use

During the 1940s, the underground storage tanks held aviation fuel which was reportedly pumped via Pipeline A to ten fueling pits at the runway. Pipeline A was a 12-inch line which entered the tank farm area on the southern side. Truck fill stand No. 2 was located on the opposite side of the railroad track from the northern battery. Communications with HAAF and Fort Stewart personnel indicate that fuel trucks were filled here with fuel brought to this location by rail (USACE, 1994).

Old drawings (1941) show eight fill couplings in the center of the railroad track which runs parallel to the site. Four of the couplings were connected to a pipeline which leads to a transfer pumphouse. Communications with HAAF and Fort Stewart personnel indicate that a pipeline, shown as Pipeline B on **Figure 2**, connected the transfer pumphouse to another tank farm (the eastern battery) near the airfield hangars. The drawings also show 10 fueling pits associated with the eastern battery. The pits were located south of the battery and were apparently oriented in linear fashion. However, no aerial photographs were available to document the exact number of fuel pits or their orientation.

Around 1957, the entire system was converted to store an alcohol/water mixture used as an aircraft de-icer. Later, some of the tanks near Building 728 were used to store waste oil. UST removal activities were completed in January 1994 by ACE in the Building 728 area. A total of 25 tanks were removed. Soil and groundwater samples were collected below the tank excavations in accordance with Georgia Environmental Protection Division (EPD) UST closure requirements. Contamination in soil and groundwater has been confirmed by the sampling. However no free product was found at this site.

The tanks in the Building 728 fenced area contained water and petroleum-contaminated water during the tank removal efforts. Two of the tanks adjacent to Building 728 contained water and waste oil, and the other two contained petroleum-contaminated water. No other investigations have been performed at this site. During tank removal activities, approximately 2634 tons of soil was removed and transported to Laidlaw Environmental Services for incineration. Tank excavations were backfilled with off-site borrow material. Prior to tank removal activities, the contents of each tank were sampled to obtain a waste characterization for disposal. A total of 43,140 gallons of hazardous and non-hazardous waste water was disposed of by Industrial Water Services, Inc. A UST closure report was previously submitted to the Georgia EPD by Ft. Stewart personnel (the responsible entity for reporting requirements at the Ft. Stewart/Hunter Army Airfield Complex).

Section II.D Initial Site Characterization

A methodical approach to conducting the field investigation was utilized to increase the accuracy of sample location selection. A thorough review of available historical information was conducted prior to any field activities. Drawings and historical records were used to identify the approximate location of the fuel pipelines associated with Building 728. Ground penetrating radar (GPR) and Electromagnetic (EM) surveys were then used to locate underground fuel pipelines and utility trenches that might influence contaminant migration. Accurate location of the pipelines was necessary to ensure that sampling was conducted as closes as possible to the potential sources of contamination. These geophysical surveys were followed by collecting soil samples using a hand auger and groundwater samples using direct-push (geoprobe) technology. The soil samples were analyzed by a laboratory using EPA methods and the geoprobe samples were analyzed in the field using a field gas chromatograph. These sample results were then used to locate permanent groundwater monitoring wells for the definition of soil and groundwater contamination. The results of the field effort are discussed in the following sections.

Electromagnetic, ground conductivity, and ground-penetrating radar (GPR) equipment was used to locate the pipelines. The geophysical surveys were conducted by Applied Engineering & Science, Inc. (AES). The scope of work involved locating approximately 10,800 total feet of pipeline. Shallow EM surveys measure ground conductivity and are capable of locating buried metallic objects, such as the steel pipelines at HAAF, due to the contrast in electrical properties with surrounding geologic materials. Shallow EM surveys are relatively easy, fast and inexpensive to complete. However, this type of EM equipment tends to be sensitive to surface and near-surface interferences such as buried materials, power lines, fences, buildings and other objects or generators of electromagnetic fields. Furthermore, resolution of the location of buried metallic objects decreases rapidly as the depth of burial increases. For these reasons, M&E conducted the EM survey first to locate as much of the pipelines as possible. In areas where interferences were too great to accurately locate the pipelines, the GPR survey was used.

Both pipelines were initially located with the EM-31 instrument. Despite interferences, the majority of Pipelines A and B were accurately located by the EM-31. Traverses were made at right angles across the pipelines (with the operator ensuring that the instrument length was maintained parallel to the pipeline and at an equal height above the ground). Generally, the EM-31 was carried at a height 6 inches above the ground surface. This provided additional sensitivity and resolution to the normal practice of carrying the instrument at waist height. The pipeline locations were marked in the field using survey flagging and paint marks. Generally, the traverses were made at 25-foot intervals along the pipelines. Exceptions were areas of interferences (buildings, fences, parked vehicles, etc.) over which the location of the pipelines was interpolated from reliable instrument locations on either side of the interference. Because the purpose of the survey was field locating of the target pipelines, the EM-31 data were not recorded.

Geophysical Investigation - Pipeline A

The geophysical survey of Pipeline A was conducted during June 5-10, 1995. Pipeline A was located using both the EM-31 and GPR geophysical surveys. The layout of Pipeline A is provided on **Plates 1A and 1B.** A complete copy of the AES geophysical report is provided in **Appendix B.** A few areas where interference was noted include: short sections of the pipeline near buildings, fences, parked vehicles, a 100-foot section of the pipeline immediately north of the hangers adjacent to the airfield, and the western "T" branch of the pipeline on the tarmac. The sections of pipeline with building, fence, and vehicle interference were readily located with the GPR survey. The section of pipeline north of the hangers was covered with concrete containing steel bar reinforcement. This prevented the EM-31 from locating Pipeline A, but the GPR was effective.

The western "T" branch of Pipeline A could not be located with either the EM-31 or GPR. Multiple geophysical test lines were conducted covering not only the location of the western "T" branch as shown on HAAF base maps, but also the entire section of the tarmac in case the 1941 hydrant system map was incorrect (**Appendix B, Plate 1**). Although the GPR parameters for Pipeline A were clear in other locations, it is possible that the pipeline on this branch is significantly different than the rest of Pipeline A (i.e. different diameter, different depth and/or different material of construction). Therefore, multiple tests were conducted with the GPR in an attempt to locate a different target. These tests included different antenna frequencies, adjustments to signal gains, signal stacking, and recording time intervals. None of these efforts were successful in locating a pipeline in the area of the western "T" branch of Pipeline A (as shown on the 1941 HAAF site maps). There are three possible explanations for the absence of a geophysical response to the pipeline in this area:

1. The pipeline is not situated as shown on the 1941 HAAF site maps. This possibility seems unlikely because the mapped location of the pipeline was otherwise relatively accurate. In addition, the geophysical survey was conducted to cover an area which would include likely locations of this branch.

2. The western "T" branch of Pipeline A is not present (i.e. this part of the pipeline was never built or was built and later removed). M&E's review of available information on the pipeline did not indicate any alternative construction diagrams (as-built drawings) or removal plans for this branch of Pipeline A.

3. This branch of Pipeline A is of significantly different construction (depth, diameter, or materials) than the rest of the pipeline and for this reason cannot be located using the geophysical methods employed for this project. This possibility also seems unlikely, assuming that this branch of Pipeline A was constructed at the same time as the rest of the pipeline. Additional review of HAAF and Corps of Engineers records may provide information to support or refute this possibility.

While searching for the western "T" branch of Pipeline A, another geophysical target was located which runs parallel to the line of hangers on the tarmac (**Appendix B, Plate 1**). This target had a response on the GPR survey similar to a buried metallic pipeline, but the source was not confirmed by digging. This target extends from the location of the Pipeline A "Y" intersection northwest approximately 300 feet where the GPR signal for this target ended.

In general, the mapped location of Pipeline A was accurate. In addition to the discrepancies discussed above, the northeast-southwest section of the eastern "T" branch of Pipeline A was found to be slightly shorter (75 to 100 feet on each end) than shown on site maps.

Geophysical Investigation - Pipeline B

Pipeline B was also located with both the EM-31 and GPR geophysical surveys. In general, the EM-31 accurately located the pipeline with the exception of interference from buildings, fences, other buried metallic objects and parked vehicles. The EM-31 response to Pipeline B, which is a smaller diameter than Pipeline A, was also very weak on the final northeast-southwest section of the pipeline on the airfield tarmac. On this approximately 1,000-foot section of Pipeline B, the EM-31 was inaccurate by several feet and the pipeline location was marked using the GPR data.

The location of Pipeline B, shown on historical (1941) HAAF site maps, is generally accurate with only minor exceptions. The first deviation is immediately southeast of the former Northern Tank Battery. The location of Pipeline B is slightly different than shown on the 1941 HAAF maps, as indicated in **Appendix B, Plate 1**. The second deviation is approximately at the mid-point of the northwest-southeast section of the pipe as it approaches the former Eastern Battery near the profile marked "Huntab 6". Instead of being straight in this area as the site map shows, the pipeline actually makes a slight offset to miss a small building at the edge of the tarmac. The correct location is marked on this plate. The third deviation from the mapped location is on the final northeast-southwest section of the pipeline on the tarmac. This section of the pipeline was found to be approximately 200 feet shorter than originally mapped.

No geophysical surveys were required for the former Building 728 area. Historical records and previous reports generated for the facility were sufficient to locate former tanks, lines, and potentially contaminated areas. All sampling locations associated with the former Building 728 are illustrated on **Plate 1A.**

A Geoprobe sampling tool was used to collect groundwater samples for rapid chemical screening during the investigation. Groundwater sampling probes consisted of 4-foot sections, 3/4-inch outer diameter, of hardened drill steel attached to a Geoprobe screen point groundwater sampler. Groundwater samples were collected at depths of 5 to 15 feet bls.

The hollow probes with detachable drive points were advanced below the water table by hydraulically pushing and/or hammering the probes to the desired depths using truck-mounted hydraulics. Depth to the water table was estimated using nearby hand-auger data. If required, an air compressor and rock drill were used to drill through any asphalt or concrete. Once the sample was collected, the rods and screenpoint sampler were retrieved, disassembled, and decontaminated before being used at another location.

The geoprobe sampling rods were driven below the water table. Once at the desired depth, the rods were pulled back about 6 inches to expose the screen and water was allowed to collect in the probe. Water samples were collected using a stainless steel check valve attached to 1/4-inch inner diameter (ID) polytubing that was inserted into the sample probe. The water was retrieved by raising and lowering the check valve apparatus into the groundwater table, forcing a column of water up into the tubing.

Groundwater samples were collected in 40 mL VOA vials that were filled to exclude air and capped with Teflon-lined septa caps. In the analytical van, approximately half of the liquid in the bottle was decanted. The vials were then shaken vigorously and a sample of the headspace from the container was injected into the gas chromatograph (GC) in volumes of 1 to 1,000 mL depending on the VOC concentrations in the sample.

Indirect (headspace) analysis was used because of the large number of water and/or soil samples are to be analyzed daily. The method is more time efficient for the measurement of volatile organics than direct injection of the water or soil sample into the GC because there is less chance of semi-volatile and non-volatile contamination of the system. Depending upon the partitioning coefficient of a given compound, the indirect analysis method may be more sensitive than the direct injection method. The precision and accuracy of both methods are similar.

Section II.D.1. Regulated Substance Released

No reported releases have occurred from any of the 25 USTs associated with the Northern Fuel Battery, Building 728, or from Pipelines A and B. The field report generated by ACE indicated that soil removed underneath the tanks contained total benzene, toluene, ethylbenzene, and xylene (BTEX) values greater than 20 ppm and total petroleum hydrocarbons (TPH) values greater than 100 ppm. Groundwater samples collected from the excavation also indicated petroleum contamination with benzene levels exceeding the 5 part per billion (ppb) maximum contaminant level (MCL).

Section II.D.2. Source of Contamination

The ACE field report did not indicate which component of the fuel storage and dispensing system may have resulted in a loss of fuel to the environment. All USTs and piping associated with the Northern Fuel Battery and Building 728 have been removed. Pipelines A and B remain in place.

Section II.D.3. Impacted Environmental Media

Field Investigation Overview

A total of 110 hand auger soil borings, 44 geoprobe groundwater sampling points, and 30 groundwater monitoring wells were installed during the SI conducted at Pipeline A, Pipeline B, and Building 728. Although three separate areas were investigated, the approach was similar. Consequently, backup documentation such as soil boring logs, well development sheets, equipment calibration logs, etc. are grouped into appendices with information from each area. The geotechnical data are provided in **Appendix C.** All soil boring logs are provided in **Appendix D.** Field equipment calibration sheets are provided in **Appendix E.** Soil and groundwater sampling sheets are provided in **Appendix F.** All monitoring well schematics and monitoring well development sheets are provided in **Appendix G and H,** respectively. Groundwater monitoring well and soil boring survey data can be found in **Appendix I.** Analytical data are presented in **Appendix J.**

Criteria for Evaluation of Groundwater

The State of Georgia Department of Natural Resources (DNR) Environmental Protection Division (EPD) has promulgated Instream Water Quality Standards (WQS) under Chapter 391-3-6. These standards, listed in **Table 1**, may be more stringent than the federal MCLs, as is the case for some metals and one PAH. The State Instream WQS are the criteria used to determine if contamination exists in the fresh waters of the State and may be applied as clean-up goals for surface water and groundwater which is not used for drinking water purposes. These standards will be used to evaluate the data collected on surface waters and groundwater collected at the HAAF. Federal standards such as the maximum contaminant level (MCL) or secondary drinking water standards will not be used to evaluate groundwater data because the shallow aquifer is not in contact with aquifers used locally for potable water supply.

Criteria for Evaluation of Soil

The State of Georgia DNR EPD has promulgated Soil Threshold Levels (STLs) under the Underground Storage Tank (UST) Management program, Chapter 391-3-15. These threshold levels are based on groundwater pollution susceptibility, the distance to drinking water sources, and the distances between the contaminated media and surface water bodies. As mentioned, the site is within a higher groundwater pollution susceptibility area (as defined by the EPD 1992 Geologic Survey Map). Although public water supply wells were identified within 2 miles of the study area, these wells are not believed to be hydraulically connected to the shallow aquifer. Therefore, Table B Soil Threshold Levels (391-3-15-.09) which are based on distance to surface water are used. Springfield Canal (locally known as Lamar Canal), is located within 500 feet of the petroleum contaminated soil identified at the Building 728 area. No surface water bodies exist within 500 feet of either Pipeline A or Pipeline B. Criteria for sites where surface water bodies exist less than 500 feet from the petroleum contaminant source were selected for evaluating soil analyses from the Building 728 area. Alternatively, criteria for sites where surface water bodies are greater than 500 feet away from the petroleum contaminant source were selected for evaluating soil data from Pipeline A and Pipeline B investigations. **Table 2** provides a list of applicable soil Georgia STLs.

Additional soil screening criteria often used by regulatory agencies to assess contamination are also presented in **Table 2**. These screening criteria will be used to evaluate soil data where no soil threshold level is available. Soil screening criteria include use of 100 times the MCLs, 20 times the Toxicity Characteristics Leaching Procedure (TCLP) leachate concentrations, and proposed RCRA action levels.

TCLP regulatory limits are based on laboratory generated leachate. Regulatory levels in soil were developed by applying a factor of 20 times the TCLP extract limit. The resultant concentration serves as a guidance for determining if the actual soil concentration could potentially exceed regulatory levels if TCLP is applied to the soil. This is based on the dry weight of the solid extracted and the weight of the extraction fluid (1:20 ratio) as described in the TCLP, 40 CFR part 261, Appendix II. RCRA action levels were obtained from the Proposed Rule on Corrective Action for Solid Waste Management Units (SWMU) at Hazardous Waste Management Facilities (FR 30798 Vol.55, July 27, 1990). These action levels are based on several criteria including health-based levels and are provided as guidelines for assessing health risks of environmental contaminants. The proposed rule has not yet been finalized.

Soil Screening Level (SSL) values are derived from proposed draft guidance from the EPA Office of Solid Waste and Emergency Response Soil Screening Guidance Document (December 1994). The listed SSL values are generic and are based on hypothetical site models that were developed for specific contaminants and exposure pathways at a site under a residential land use scenario. The resulting SSL values are expected to be protective for most site conditions across the nation. The SSL values represent concentrations of contaminants capable of migrating from soil to groundwater. Since the SSL values are proposed and may eventually be used as preliminary remediation goals (PRG) or clean-up levels, they are listed where available.

Site-specific soil results were compared to the STLs for the volatile organic compounds (BTEX) listed by GA DNR EPD. Due to the absence of State threshold levels for metals and some PAH compounds, a range of screening criteria; 100 times the MCL, 20 times TCLP, proposed RCRA action levels and SSL values, were used in evaluating metals and PAHs in soils.

Background Soil and Groundwater Conditions

Background conditions are generally characterized by naturally occurring soil and groundwater conditions without contamination. Background locations are typically situated beyond plume boundaries and are located hydraulically upgradient of known contaminated areas. No specific background soil or groundwater locations were selected for this CAP - Part A investigation because little information was available on groundwater flow directions and the extent of contamination. There are, however, numerous sampling locations along the pipelines and Building 728 area where the sampling results (for BTEX, purgeable and extractable TPH, and PAH) were non-detect, and these results are taken to be representative of background conditions.

Local Geology

The local geology has been documented by the collection of soil samples from over 130 locations along the pipelines, Building 728, and nearby subsurface investigations at other UST sites. Depth of drilling was generally 14 feet below land surface (bls).

The lithology encountered was predominantly a dark gray to dark brown, very fine to medium sand, with variable silt and clay content. Approximately 75 percent of the samples contained less than 10 percent fines which prevented Atterburg limits testing. Moisture content averaged about 22 percent but ranged from 3.6 to 39.7 percent. Generally, the samples with higher silt and clay content were within a few feet of the surface. Less silt and clay content was noted with depth. An area of higher fines and organics content was noted to exist toward the southeast portion of the site. Soil samples from 29 monitoring well locations (Plate 1A, B) were analyzed for grain size distribution and the results are presented in **Table 3.**

Summary of Analyses

The following sections provide analytical results of soil and groundwater samples collected from Pipeline A, Pipeline B, and the former Northern Fuel Battery/Building 728 Area.

PIPELINE A

Subsurface Investigation- Pipeline A

The subsurface investigation of Pipeline A included the installation of 36 hand auger borings, 11 geoprobe groundwater sampling points, and 5 groundwater monitoring wells. These sampling points were identified based on information obtained from the geophysical surveys of the pipeline. Each sampling location was selected with respect to areas which may be prone to fuel losses such as pipeline elbows, fuel pits, and distribution points. The following sections describe the aerial distribution of petroleum hydrocarbons in proximity to Pipeline A.

Soil Quality and Lithology- Pipeline A

Soil samples from 36 hand-auger borings were collected from June 12 to 29, 1995 at intervals along Pipeline A to assess potential pipeline leakage and local shallow geologic conditions. Sample locations were generally spaced 100 feet apart but some allowances were made for cultural interferences (see **Plates 1A and 1B**). The near-surface lithology determined from the hand-auger borings is a fine- to medium-grained sand with variable clay and silt. The clay and silt amount generally decreases with depth. Sample depths were generally 4 feet (first wet sample) but ranged from 0.5 (auger refusal) to 6 feet.

Soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), Gasoline Range Organics (GRO), Diesel Range Organics (DRO) and polynuclear aromatic hydrocarbons (PAHs). Trace concentrations (less than 1 ppm) of TPH were identified in 13 of the 36 soil sampling locations selected along Pipeline A. One sample, H728-HA15, contained 14 ppm extractable TPH. No constituents identified exceeded the State soil threshold levels. A summary of constituents identified in soil samples is provided in **Table 4** and is illustrated on **Plates 2A** and **2B**.

Two hand auger locations, HA35 and HA36, were not advanced to the desired depth due to subsurface obstructions. These two abandoned hand auger locations are positioned along the fuel spur, south of Building 842 and 843. Similar subsurface obstructions were encountered during the advancement of hand auger borings HA28 and HA29. However, soil samples were collected at shallow depths above the groundwater table for laboratory analyses from these two locations (HA28 and HA29 are located north of Strachan Drive directly adjacent to the pipeline). A geoprobe sampling tool was used to collect a subsurface soil sample near the two areas along the pipeline where hand auger borings could not be completed to desired depths. The geoprobe samples were collected near the water table at HA29 and HA36. These geoprobe sample results are discussed in the following section. No significant concentrations of hydrocarbon components were identified in either HP26 (located adjacent to HA29) or HP12 (located adjacent to HA36).

Geoprobe Groundwater Sampling- Pipeline A

Eleven geoprobe groundwater samples were collected during July 10-15, 1995 along Pipeline A to assess potential pipeline leakage (see **Plates 1A and 1B**). The spacing between geoprobe locations was approximately 500 feet along the pipeline and 200 feet apart along the fueling pits (one geoprobe at each fueling pit). Sample depths were generally 10 to 15 feet bls. Four locations were also sampled for soil screening using the field GC since a hand-auger sample was not collected or was collected at a depth shallower than desired. These locations are hand-auger locations H728-HA31, 32, 35, and 36 and all were sampled at a depth of 5 feet. Of the four samples where a soil sample was analyzed, only H728-HPS36 reported a benzene concentration, at 2 μg/L. All other BTEX analyses were non-detect.

The results of the geoprobe sampling are presented in **Table 5**. The majority of the analyses indicate no impact by BTEX or heavy volatile hydrocarbons (total volatile hydrocarbon compounds, TVHC C10-CX). The light fraction of TVHC (C1-C9) is probably methane. Two locations, H728-HP12 and H728-HP13, had benzene concentrations of 2 and 0.5 μg/L, respectively.

Monitoring Well Installation - Pipeline A

Five monitoring wells (H728-MW7, 15, 16, 17, and 18) were installed along Pipeline A August 4-9, 1995. The locations were based upon the geoprobe results. No contaminated areas were identified using the Geoprobe or hand auger data. The wells were placed in areas where leaks or spills were likely, i.e. at fueling pits and a valve box. The location of all wells installed along Pipeline A is provided on **Plates 1A and 1B.**

Monitoring well depths range from 13.0 to 13.5 feet bls and are constructed with a 10-foot screen. The screen interval was placed in an attempt to bracket the water table.

Groundwater Quality - Pipeline A

Soil samples from hand auger borings and geoprobe groundwater samples were used in selecting locations for permanent groundwater monitoring wells along Pipeline A. Both soil analyses and in-field screening of geoprobe water samples suggest little petroleum contamination exists along Pipeline A. M&E selected five locations along the pipeline for the installation of permanent groundwater monitoring wells. These locations are provided on **Plates 3A and 3B.** Groundwater samples collected from each of the five monitoring wells indicate no compounds above detection limits. Analytical laboratory reports for groundwater samples from these wells are summarized on **Table 6.**

PIPELINE B

Subsurface Investigation - Pipeline B

M&E personnel installed and sampled 54 hand auger borings, 18 geoprobe groundwater sampling points, and 12 groundwater wells during the investigation of Pipeline B. Laboratory analytical results of soil and groundwater samples collected along Pipeline B indicate petroleum compounds are present in both soil and groundwater. The pipeline originates from the rail spur near Building 728 and terminates approximately 2100 feet under the airfield tarmac, south of Building 860. A summary of the areal distribution of hydrocarbons identified in both soil and groundwater is provided in the following sections.

Soil Quality and Lithology - Pipeline B

Soil samples from 54 hand-auger borings were collected from June 12 to 29, 1995 at intervals along Pipeline B to assess potential leakage. Sample locations were generally spaced 100 feet apart but some allowances were made for interferences (see **Plates 1A and 1B**). Sample depths were generally 4 feet (first wet sample) but ranged from 1.0 (auger refusal) to 8 feet. The near-surface lithology determined from the hand-auger borings is a fine- to medium-grained sand with variable clay and silt. The clay and silt amount generally decreases with depth.

Soil samples were analyzed for BTEX, GRO, DRO, and PAHs. Petroleum hydrocarbons were identified in soil samples at several locations and depths along Pipeline B. Soil results are illustrated on **Plates 2A** and **2B.**

As shown in **Table 7**, TPH levels were elevated in two locations (H728-HA88 and H728-HA89 at concentrations of 2200 and 1200 ppm, respectively). However, no individual constituents exceeded health-based screening levels or Georgia thresholds in these samples, and consequently the general indicator TPH would not dictate the need for remediation.

No Georgia threshold levels were exceeded in any samples. Several PAHs were identified in selected locations including: H728-SB25 (9-foot depth), H728-SB26 (5-foot depth), H728-HA77 (4-foot depth), H728-HA78 (6-foot depth), H728-HA79 (6-foot depth), H728-HA85 (2-foot depth), H728-HA88 (2-foot depth), H728-HA90 (2-foot depth), H728-HA91 (2-foot depth), H728-HA98 (3-foot depth), H728-HA99 (3-foot depth), and H728-HA102 (1-foot depth). PAHs at these locations are significantly above background but are below the State threshold levels since the source is greater than 500 feet from a surface water body.

Geoprobe Groundwater Results - Pipeline B

Eighteen geoprobe locations were sampled for groundwater during July 10-15, 1995 with direct-push technology along Pipeline B to assess potential leakage (see **Plates 1A and 1B**). Spacings were approximately 500 feet apart along the pipeline and 200 feet apart along the fueling pits (one geoprobe at each fueling pit). Sample depths were generally 10 feet bls and the results were used to position permanent monitoring wells.

The results of the geoprobe sampling are presented in **Table 8.** From the table, location H728-HP34 is noted as having elevated benzene (5500 μg/L). This location is downgradient of the former Eastern UST Battery. At a lower concentration, location H728-HP36 exhibited a benzene concentration of 55 μg/L. Numerous other locations contained benzene concentrations of 7 μg/L or less. The toluene, ethylbenzene, and xylene concentrations were non-detect for all samples. Elevated light fraction of TVHC (C1-C9) somewhat corresponds to elevated benzene but not in all cases, indicating possible presence of methane.

Monitoring Well Installation - Pipeline B

Twelve monitoring wells (H728-MW19 to H728-MW30) were installed along Pipeline B during August 6 to 15, 1995 (see **Plates 1A and 1B**). The locations were based upon the geoprobe results and were placed at areas where leaks or spills were likely, i.e. at fueling pits and a UST area.

Monitoring well depths ranged from 12.5 to 14.1 feet deep and were constructed with a 10-foot screen. The screen interval was placed in an attempt to bracket the water table.

Groundwater Quality - Pipeline B

Groundwater sampling of all monitoring wells occurred September 5-9, 1995. Twelve locations were selected for the installation of permanent groundwater monitoring wells along Pipeline B. The 12 monitoring wells located along Pipeline B were sampled and analyzed for BTEX and PAHs. The results of soil sampling and geoprobe groundwater sampling were used in determining the location of groundwater monitoring wells. No elevated concentrations of soluble petroleum hydrocarbons were identified in the northernmost 1200 feet of the pipeline shown on **Plate 3A.** Soluble hydrocarbons were detected in monitoring wells illustrated on **Plate 3B.** **Table 9** provides a summary of groundwater sample analyses along the pipeline. Two sample locations (H728-MW25 and 26) exceeded the Georgia In-stream Water Quality Standard of 0.0311 μg/L for certain PAH compounds. Location H728-MW26 contained four PAHs exceeding standards while location H728-MW25 contained only one. The four PAH compounds coelute in Method 8100 and cannot be quantified individually. Groundwater remediation would not be based on this fairly isolated occurrence.

BUILDING 728

Subsurface Investigation - Building 728

M&E personnel installed and sampled 20 hand auger borings, 15 geoprobe groundwater sampling points, and 13 permanent groundwater monitoring wells during the investigation of the Building 728 area. Petroleum fuel constituents were identified in subsurface soil and groundwater samples collected near the former northern battery underground fuel storage tanks located near Building 728. Elevated hydrocarbons and PAH concentrations were identified in soil samples. Elevated metals and volatiles were identified in groundwater samples. In addition, free product was identified in MW-8; located near the northwest corner of the former northern battery USTs. The areal extent of hydrocarbons in both soil and groundwater is discussed in the following sections.

Soil Quality and Lithology - Building 728

Soil samples from 20 hand-auger borings were collected from June 12 to 29, 1995 at Building 728 Area to assess potential leakage around the USTs and railcar fueling pits (see **Plate 1A**). Sample locations were generally placed around former UST locations and railcar fueling pits. Sample depths were generally 3 feet (first wet sample) but ranged from 2 to 5 feet. The near-surface lithology determined from the hand-auger borings is a fine- to medium-grained sand with variable clay and silt. The clay and silt amount generally decreases with depth.

M&E personnel collected soil samples for analysis of volatile and semi-volatile organic compounds, and total petroleum hydrocarbons at Building 728. Samples in proximity to the former used oil tanks were also analyzed for inorganic parameters. Soil samples were analyzed for BTEX, GRO, DRO, and PAHs. Analytical results of soil samples indicate that both volatile hydrocarbon and PAH concentrations were elevated in several locations. **Table 10** provides a summary of all analytical soil sampling data collected for Building 728. BTEX (the sum of benzene, toluene, ethylbenzene and xylene) ranged from non-detect (U) to 65 parts per million (ppm). One sample (HA9, 3 ft) exceeded the State threshold for benzene. PAHs ranged in concentration from U to 64.2 ppm. State thresholds were exceeded in locations HA2 (4 feet depth), HA9 (3 feet), HA11 (3 feet), HA125 (3 feet), and SB8 (5 feet). Concentrations of purgeable TPH ranged from U to 82,000 J ppm ("J" indicates an estimated quantity). The most common positive analytical results obtained at Building 728 were the purgeable TPH values. **Plate 2A** illustrates the areal distribution of hydrocarbons identified in soil samples. An enlarged plan section of the Building 728 area provides values of total BTEX, total PAH, purgeable TPH, and extractable TPH at each sampling location.

Geoprobe Groundwater - Building 728

Fifteen geoprobe locations (H728-HP1-11, HP19-22) were sampled for groundwater during July 10-15, 1995 with direct-push technology in the area of Building 728 to assess potential UST leakage. Locations were selected to be adjacent to former USTs and in upgradient and downgradient locations in order to define a possible contaminant plume. Sample depths were 10 feet below land surface and the results were used to position permanent monitoring wells.

The results of the geoprobe sampling are presented in **Table 11**. Numerous locations exhibited elevated BTEX concentrations, notably H728-HP6, HP9, and HP20. However, the concentrations decrease two orders-of-magnitude from H728-HP6 to HP20. **Figure 3** shows a benzene isopleth map with the highest concentrations centered at H728-HP6. Contouring other compounds, i.e., toluene, ethylbenzene, or xylenes yielded similar results since location H728-HP6 had the highest concentration and H728-HP9 had the second highest concentration.

Monitoring Well Installation - Building 728

Thirteen monitoring wells (H728-MW1 to 14 except H728-MW7) were installed at the Building 728 area during August 4-9, 1995. The locations were based upon the geoprobe results and former UST locations. The well locations were selected to confirm geoprobe results, to fill in data gaps, and in downgradient positions to further define the extent of hydrocarbon contamination.

Monitoring well depths ranged from 12.3 to 14.0 feet and were constructed with a 10-foot screen. The screen interval was placed in an attempt to bracket the water table.

Groundwater Quality - Building 728

Groundwater sampling of all monitoring wells occurred September 5-9, 1995. The 13 monitoring wells located at the Building 728 area were sampled and analyzed for volatile hydrocarbons and semi-volatile hydrocarbons using EPA methods 8020 and 8100, respectively, and in some locations (MW1 through MW5) 8 RCRA metals. Free product was identified in MW8 at an initial level of 1.1 feet and was therefore not sampled. Benzene and metals were identified in groundwater samples collected near Building 728. The unfiltered groundwater samples from MW1, MW2, MW3, MW4, and MW5 were analyzed for Resource Conservation and Recovery Act (RCRA) metals due to their close proximity to former used oil storage tanks.

Table 12 presents a summary of constituents identified in groundwater samples at Building 728. Concentrations of benzene, chromium, lead, and mercury exceeded federal maximum contamination limits (MCLs) and Georgia In-stream standards. The majority of wells installed at Building 728 were placed to identify the extent of soluble hydrocarbon contamination in groundwater. Plume definition was accomplished with relative success as the suspected source areas (former fuel tank and railroad spur) are nearly completely encircled by monitoring wells having no petroleum contamination. Analytical values for petroleum hydrocarbons identified in groundwater samples are illustrated on Plate 3A.

Section II.D.4. Local Water Resources

Potable Well Survey

Two potable water supply wells have been identified within a 1/2-mile radius and 14 potable water wells were identified within a 2-mile radius of the pipelines and are listed in **Table 13.** The wells are also plotted on **Figures 4A and 4B.**

Wells 285 and 286 are within the 1/2-mile radius but are not hydraulically connected with the surficial aquifer due to interbedded clay layers at depth (Clarke, et al, 1990). These two wells are cased down to 259 and 260 feet, respectively, and total depths are 504 and 555 feet, respectively. The other wells within the 2-mile radius are also deep with a total depth in excess of 300 feet. **Figure 5** depicts a generalized hydrogeologic stratigraphic column of the Savannah area showing the confining units between potable well intake depths and the surficial aquifer. The residential area located north of Lynes Parkway, Staley Heights, is located within a 1/2 mile radius of Building 728. A windshield survey of Staley Heights conducted by M&E indicated no private potable wells are present.

Surface Water Bodies

Former Building 728 and the Former Northern Battery exist less than 500 feet from a man-made surface water drainage canal. The drainage feature is constructed of several subterranean culverts directly north of the Former Northern Battery. Flow in the system occurs toward the west/northwest and the culverts eventually discharge to an open drainage ditch approximately 300 feet northwest of the Former Northern Battery. An evaluation of nearby surface water bodies was also conducted along the Pipeline A and B study areas. No surface water bodies exist less than 500 feet from Pipelines A or B. One man-made lake, located 510 feet west of Pipeline A, does exist; however, it is used for emergency fire fighting water supply and not for human consumption.

The drainage feature located northwest of Former Building 728 is locally known as Lamar Canal. The canal empties into the Springfield Canal, approximately 1300 feet northwest of Former Building 728. Springfield Canal flows southwest and empties into the Forrest River; a tributary of the Little Ogeechee River.

Section II.D.5. Potentiometric Surface

All monitoring wells were gauged on September 5, 1995, except H728-MW14, which was gauged the next day. **Table 14** lists the water level, elevations of top of casing (TOC) and the ground surface for all wells at Building 728 and Pipelines A and B. **Figure 6** shows the potentiometric surface over the pipeline areas. Groundwater flow is north to north-northwest with a variable gradient. The gradient is 0.002 on the south end of the site, a generally flat area under concrete, but steepens to 0.018 near the northern portion of the study area. Groundwater in the study area is under water table conditions and is encountered between

1.2 to 8.4 feet bls, averaging 5.0. Groundwater flow is toward the northwest with a "site-wide" average gradient of approximately 0.005 ft/ft.

Groundwater flow is generally north-northwest near Building 728 with a gradient of 0.010. A buried culvert (storm drain) located north of Building 728 may affect the local groundwater flow. The culvert was previously an open ditch and could act as a preferential groundwater migration pathway.

Slug test results were reported for two areas on the HAAF property (AT&E 1992, 1993). Sixteen wells were tested with the average hydraulic conductivity (k) result being 2.2 x 10^{-3} cm/s (6.2 ft/day). Using the formula (Fetter, 1988):

$$v = \frac{ki}{n_e}$$

where:

v	=	seepage velocity
k	=	hydraulic conductivity
i	=	gradient
n_e	=	effective porosity (assumed 0.20, Heath, 1987)

the seepage velocity is calculated to be 5.6 x 10^{-5} cm/s (0.16 ft/day).

Section II.D.6 Corrective Action Implemented or In-progress

See Section II.A. of this supporting documentation for a summary of corrective actions completed by ACE. Information on free product recovery operations at Former Building 728 is provided in Section II.B.

Section II.D.7. Conclusions and Recommendations

A total of 110 hand auger borings, 44 geoprobe groundwater sampling points, and 30 groundwater monitoring wells were installed during the investigation of Pipeline A, Pipeline B, and Building 728. A survey of potential receptors was conducted which identified potable wells and surface water bodies in proximity to the investigation areas. A review of potable well records indicated that they were screened at a significant distance below ground surface and are separated from the shallow aquifer by a confining unit. The potable wells, located near Building 728 and the former Eastern Battery, are therefore not considered potential receptors of surficial aquifer contamination. Two surface water bodies were located nearby Pipeline A and Building 728. Lamar Canal is located approximately 300 feet northwest of the Building 728 area, and it is most likely hydraulically connected to the shallow aquifer. A manmade lake was also identified, located approximately 510 feet west of Pipeline A; midway between the Building 728 area and HAAF tarmac pavement. No other potential receptors were identified during the investigation.

The GUST Rule, 391-3-15-.09, provides soil threshold levels for a number of petroleum compounds depending on groundwater susceptibility and location to potential receptors. The receptor survey indicated that two surface water bodies are the most likely receptors of contamination near Pipeline A and Building 728. Two sets of standards listed in Table B of the GUST Rule apply to the investigation areas: More stringent soil threshold levels were used to evaluate soil contamination at Building 728 and the northern reaches of Pipeline A because Springfield Canal is located less than 500 feet from the investigation areas. The southern portion of Pipeline A and the entire section of Pipeline B are greater than 500 feet of surface water bodies; and therefore, hydrocarbon concentrations identified in soil samples from these areas were evaluated using less stringent criteria listed in Table B of the GUST Rules.

No soil constituents exceeded the State soil threshold limits along the entire length of Pipeline A. PAH compounds were identified in three soil samples along the pipeline above background concentrations. However, no direct contact is known or suspected and leachate to groundwater has not occurred as all constituents were undetected in the five groundwater samples. Consequently, no further action is considered appropriate for Pipeline A.

No surface water bodies were found to exist within 500 feet of Pipeline B. Soil contamination was identified in a number of soil boring locations along Pipeline B. Much of the contamination was centered around Building 860, HA77, HA85, and HA99. Although elevated TPH and PAHs were identified in soil, they do not exceed soil threshold concentrations identified in Table B of the GUST Rule. Several groundwater monitoring wells installed along Pipeline B also contained soluble hydrocarbon compounds. In large part, constituents were in the vicinity of Building 860. The instream WQS for chrysene/benzo(a)anthracene was exceeded at two locations (MW25 and MW26). The WQS was also exceeded for three other PAH constituents at MW26. The isolated occurrence of PAH constituents in these two wells is not significant enough to warrant groundwater remediation.

Concentrations of organic and inorganic contaminants in both soil and groundwater samples collected from the Building 728 area exceeded State and Federal regulatory action levels. The more stringent GUST soil threshold limits apply to Building 728 because of its location with respect to Lamar Canal. In addition to soil and groundwater contamination, free product was identified in MW8. The initial thickness of product measured in MW8 was 1.1 feet. Concentrations of dissolved metals, obtained near the former used oil tanks at Building 728, exceeded MCLs and State in-stream WQS.

Although contamination of both volatile and semivolatile hydrocarbons in soil exceeded threshold limits, soil contamination appears to be confined to the Building 728 area. Petroleum hydrocarbons present in groundwater also appear to be relatively confined within the Building 728 area. However, analytical results suggest some contamination migration has occurred toward the northwest; possibly along the drainage culvert located north of Building 728.

M&E recommends that addition soil borings and monitoring wells be installed to define the vertical and horizontal extent of contamination in the Building 728 area. Surface water and sediment samples should also be collected from Lamar Canal and the man-made lake (west of Pipeline A) to determine if hydrocarbon and inorganic contaminants have impacted these media. A Site Investigation Plan (SIP) is provided in Section III.A. of this CAP-Part A Supporting Documentation which outlines additional proposed activities. The objectives of the expanded investigation will be to: (1) fully define the horizontal extent of subsurface hydrocarbon contamination, (2) define the vertical extent of contamination hydraulically downgradient of source areas, (3) determine if nearby receptors have been impacted by migrating petroleum hydrocarbon contaminants, (4) evaluate the potential existence of preferred subsurface migration pathways, and (5) evaluate the possible remedial responses. Information obtained from these additional investigative activities will be summarized in a CAP-Part B as specified in Georgia Rule 391-3-15 and submitted to the Georgia DNR EPD for review.

Section III - Site Investigation Plan

The primary purpose for continued site investigation is to define the horizontal and vertical extent of petroleum contamination in proximity to former Building 728. Nearby surface water features will also be sampled to determine if they have been adversely impacted by petroleum hydrocarbons identified at these two locations. The two locations on Pipeline B (near Building 860) where the In-stream Water Quality Standards for four PAH compounds were exceeded are not significant enough to require continued assessment or groundwater remediation. The following SIP outlines proposed sampling locations, investigative methodologies, and sample site selection rationale. A figure illustrating proposed sampling locations is also provided in the SIP.

Soil Investigation

Additional subsurface investigation is required at former Building 728/Northern Fuel Battery to define the extent of benzene and PAH compounds in soil. Additional monitoring wells will also be required to define the horizontal and vertical extent of contamination in groundwater. **Figure 7** provides an illustration of all proposed soil sampling points. In addition, areas where either benzene or PAH concentrations in soil exceed State threshold levels are indicated using hatch patterns.

A total of 14 hand augered soil borings are proposed with samples being collected at 3 feet below land surface. Hand augering locations are centered in three separate areas over the Building 728 site. Soil borings proposed south of former Building 728 are placed to define the extent of PAH contamination in soil. Two additional areas of PAH soil contamination were identified within the fenced boundary of the former Northern Fuel Battery. A small area on the eastern fence line of the former Fuel Battery will be investigated using three hand auger borings. A larger area located on the west fence line will be defined using six hand auger borings. Noteworthy are the locations of proposed monitoring wells within two of these locations where soil will also be sampled. Power auger soil borings will also be conducted in proximity to HA2; located on the eastern fence boundary of the former Northern Fuel Battery and HA11 on the western fence boundary. Soil samples will be collected above and below the water table (approximately 3 feet and 8 feet bls) at these monitoring well and power auger locations. The horizontal extent of soil containing benzene over the STL will be defined by the three hand augered soil borings located north and west of HA9.

Each soil sample will be analyzed using EPA methods 8020, 8260, and Modified 8015 GRO and DRO. Analytical results will be evaluated along with existing data to determine if the horizontal and vertical extent of petroleum contamination has been identified. These analytical results will also be used to evaluate potential soil treatment alternatives.

Shelby tube samples will be collected from three locations across the former Building 728 area to collect undisturbed soil samples near the water table. These undisturbed samples will be laboratory analyzed for a number of geotechnical parameters including effective porosity, vertical permeability, and grain size distribution. Laboratory analytical methods for determining total organic carbon, dissolved iron, and in situ microbial content will also be performed. These analyses will allow Metcalf & Eddy to evaluate treatment alternatives and options for passive bioremediation.

Groundwater Monitoring Well Installation

Eleven shallow and two deep wells will be installed to define the horizontal and vertical extent of soluble hydrocarbons in groundwater. The monitoring wells will be installed in two main locations: south of former Building 728 and west of contamination identified on the west fence boundary of the former Northern Fuel Battery. The shallow groundwater monitoring wells will be constructed using similar methodologies employed during the CAP-Part A investigation. The locations of the shallow wells have been selected to define the downgradient extent of soluble hydrocarbons and identify the highest contaminated areas (free product). Each shallow well will be installed into the upper 15 feet of the unconfined aquifer.

Two soil samples will be collected from each monitoring well location as mentioned above. Analytical results of soil boring samples will be used to define the horizontal and vertical extent of impacted soil.

The vertical extent of soluble hydrocarbons will be assessed using two deep wells located south and northwest of Monitoring Well 8 (MW8). The southern well placement is between MW8 and the water supply well. The northwest well placement is downgradient of MW8. Each deep well will be completed with a 5-foot section of machine slotted well screen set from 25 to 30 feet bls. The annular space above the sand pack will be sealed using bentonite pellets and bentonite cement grout to the surface. This annular seal should be sufficient to isolate this deeper portion of the shallow aquifer exposed to the well screen from shallower zones. Each of the two deep wells are located at significant distances from suspected high contamination areas. Therefore, direct hollow stem augering methods should be sufficient to place a well screen to a depth of 30 feet while avoiding carrying contaminants from shallow to deeper portions of the surficial aquifer. Soil samples will not be collected from the deep wells for laboratory analysis, only for lithologic description.

Each monitoring well will be developed following procedures outlined in the Phase I Site Investigation Work Plan prepared by Metcalf & Eddy for Building 728. Groundwater samples will be collected from all newly installed and existing monitoring wells following the development and stabilization periods. Each sample will be analyzed for soluble hydrocarbons using EPA method 8020 and 8260. Analytical results of these samples will be compared with previous groundwater sample results to assess the change in hydrocarbon concentration over time and define the vertical and horizontal extent of contamination. Groundwater analytical results will also be used to evaluate appropriate remedial alternatives for contaminated groundwater.

Surface Water and Sediment Investigation

Surface water and sediment samples will be collected from Lamar Canal. Metcalf & Eddy anticipates collecting three surface water and three sediment samples from locations adjacent to and downgradient of the former Northern Fuel Battery. One surface water and sediment sample will be collected from the drainage inlet directly north of the former Fuel Battery. Two surface water and sediment samples will be collected from the open ditch located approximately 300 feet northwest of the former Fuel Battery. Surface water and sediment samples will be analyzed using the same EPA methods as soil and groundwater to identify petroleum contamination.

M&E will perform eight slug tests in proximity to the Northern Fuel Battery to collect hydrogeologic information on the shallow aquifer. Information collected from the slug tests should be sufficient to determine the aquifer's hydraulic conductivity and estimate the aquifer's transmissivity. Values of hydraulic conductivity will be used with the hydraulic gradient to calculate groundwater velocity.

Metcalf & Eddy will prepare a detailed work plan to be used during this continued subsurface contamination assessment. The Work Plan will include sub-plans such as a Geologic Data Acquisition Plan (GDAP), Sampling and Analysis Plan (SAP), and Site Safety

& Health Plan (SSHP). Procedures to be followed during field investigations, data validation, and reporting will be outlined in the Work Plan and supporting plans.

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TABLES

TABLE 1

STATE IN-STREAM STANDARDS FOR GROUNDWATER AND SURFACE WATER

BUILDING 728 AND AIRPORT HYDRANT SYSTEM INVESTIGATION
HUNTER ARMY AIR FIELD

CONTAMINANT	GADNR-WQ STDS (ug/L) 3
INORGANICS	
ARSENIC	50
BARIUM	-
CADMIUM	36
CHROMIUM (Total)	120*
LEAD	1.3*
MERCURY	0.012
SELENIUM	5
SILVER	-
VOLATILE ORGANICS	
BENZENE	71.28
ETHYL BENZENE	28,718
TOLUENE	200,000
TOTAL XYLENES	-
SEMIVOLATILE ORGANICS	
ANTHRACENE	110,000
BENZO(a)ANTHRACENE	0.0311
BENZO(b)FLUORANTHENE	0.0311
BENZO(k)FLUORANTHENE	0.0311
BENZO(a)PYRENE	0.0311
CHRYSENE	0.0311
DIBENZ(a,h)ANTHRACENE	0.0311
FLUORANTHENE	370
FLUORENE	14,000
INDENO(1,2,3-c,d)PYRENE	0.0311
PYRENE	11,000

1 - Georgia DNR, EPD, Chapter 391-3-6.03, Water Quality Control, Instream Water Quality Standards, Section 5(d)(ii)&(iii) 5/29/94
(*) For hardness levels less than 100 mg/L. (Acceptable concentrations increase with increasing hardness).
(-) No criteria exists

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TABLE 2

SCREENING CRITERIA USED FOR EVALUATION OF SOILS

PHASE I SI–BUILDING 728, AIRPORT HYDRANT SYSTEM
HUNTER ARMY AIR FIELD

SOIL CONTAMINANT	TCLP (1) LEVEL (ppm)	RCRA ACTION LEVEL mg/kg (2)	100 X MCL (3) (ppm)	CERCLA SSL (4) (mg/kg)	< 500' TH LEVEL (5) (mg/kg)	> 500' TH LEVEL (6) (mg/kg)
INORGANICS						
ARSENIC	100	80	5	15	–	–
BARIUM	2000	4000 (a)	32	32	–	–
CADMIUM	20	40	6	6	–	–
CHROMIUM	100	400 (a)	19 (*)	19 (*)	–	–
LEAD	100	–	–	–	–	–
MERCURY	4	20	3	3	–	–
SELENIUM	20	–	3	3	–	–
SILVER	100	200	–	–	–	–
VOLATILE ORGANICS						
BENZENE	NA	–	–	NA	0.017	0.12
ETHYLBENZENE	–	NA	–	NA	18	140
TOLUENE	–	NA	–	NA	115	500
TOTAL XYLENES	–	NA	–	NA	700	700
SEMIVOLATILE ORGANICS						
ACENAPHTHENE	–	–	–	–	NA	NA
ANTHRACENE	–	–	–	–	NA	NA
BENZO(a)ANTHRACENE	–	–	–	NA	0.66 (b)	NA
BENZO(a)PYRENE	–	–	NA	NA	0.66 (b)	NA
BENZO(b)FLUORANTHENE	–	–	–	NA	0.66 (b)	NA
BENZO(k)FLUORANTHENE	–	–	–	NA	0.66 (b)	NA
CHRYSENE	–	–	–	NA	0.66 (b)	NA
DIBENZ(a,h)ANTHRACENE	–	–	–	NA	0.66 (b)	NA
FLUORANTHENE	–	–	–	980	NA	NA
FLUORENE	–	–	–	160	NA	NA
INDENO(1,2,3–c,d)PYRENE	–	–	–	NA	0.66 (b)	NA
NAPHTHALENE	–	–	–	30	NA	NA
PHENANTHRENE	–	–	–	NA	NA	NA
PYRENE	–	–	–	1400	NA	NA

1 – TCLP LEVELS; Guidelines for contaminants in soils is based on:
40 CFR Part 268.41 Constituent Concentration in Waste Extract (CCWE) for non–wastewaters.
A factor of 20 X the CCWE is applied to determine if the solid concentration could potentially exceed regulatory levels if TCLP were applied
(20 X TCLP extract limits is a screening criteria often applied to soils)
2 – Examples of Concentrations meeting criteria for Action Levels (appendix A, 40 CFR 264.521) Corrective Action for SWMUs at Hazardous Waste Management Facilities, Proposed Rule FR30798 Vol. 55 no 145, July 27,1990.
(a) Chromium = Hexavalent Chromium, Barium = Ionic Barium
3 – Maximum Contaminant Levels from Drinking Water Standards is multiplied by a factor of 100. Level is listed in ppm.
(*) – Chromium VI and compounds (S) – soil saturation concentration
4 – Proposed CERCLA Draft Soil Screening Levels based on migration from soil to groundwater
(*) – Chromium VI and compounds (S) – soil saturation concentration
5 – Soil Threshold Levels < 500 feet to surface water body – GA DNR, EPD Chapter 391–3–15–.09, UST Management, Table B
(b) – Estimated detection limit, since the calculated health–based threshold is less than the laboratory detection limit.
6 – Soil Threshold Levels > 500 feet to surface water body – GA DNR, EPD Chapter 391–3–15–.09, UST Management, Table B
NA – Not Applicable; the health–based TH level exceeds the expected soil concentration for free product condition.
(–) – No criteria exists

TABLE 3
BUILDING 728 and PIPELINE GRAIN SIZE ANALYSIS

Location	Depth ft,bgs	Grain Size Distribution (%)			USCS
		Gravel	Sand	Silt/Clay	
H728-SB1	1-3	0	95.9	4.1	SP
H728-SB2	11-13	0	99.0	1.0	SP
H728-SB3	11-13	0	97.9	2.1	SP
H728-SB4	9-11	0	95.5	4.5	SP
H728-SB5	1-3	0	79.0	21.0	SM
H728-SB6	3-5	1.4	87.5	11.1	SP-SM
H728-SB7	No Sample Collected				
H728-SB8	11-13	0	96.6	3.4	SP
H728-SB9	3-5	0	58.8	41.2	SC
H728-SB10	9-11	0	93.3	6.7	SP-SM
H728-SB11	5-7	0	66.8	33.2	SC
H728-SB12	5-7	7.7	83.4	8.9	SP-SM
H728-SB13	7-9	0	87.6	12.4	SM
H728-SB14	1-3	0	97.1	2.9	SP
H728-SB15	7-9	0	98.9	1.1	SP
H728-SB16	3-5	0	97.6	2.4	SP
H728-SB17	3-5	0	96.7	3.3	SP
H728-SB18	5-7	0	97.2	2.8	SP
H728-SB19	10-11	0	74.0	26.0	SM
H728-SB20	7-9	0	98.8	1.2	SP
H728-SB21	13	0	40.2	59.8	CL
H728-SB22	9-11	0	92.8	7.2	SP-SM
H728-SB23	9-11	0	94.9	5.1	SP-SM
H728-SB24	11-13	0	93.7	6.3	SP-SM
H728-SB25	5-7	29.0	66.4	4.6	SP
H728-SB26	1-3	0	92.5	7.5	SP-SM
H728-SB27	7-9	0	92.4	7.6	SP-SM
H728-SB28	5-7	0	85.4	14.6	SM
H728-SB29	9-11	0	90.9	9.1	SP-SM
H728-SB30	5-7	0.7	93.3	6.0	SP-SM

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TABLE 4
Pipeline A
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL	H728-HA15	H728-HA16	H728-HA17	H728-HA18	H728-HA19*	H728-HA112*	H728-HA20
SAMPLE DATE	SCREENING	06/14/95	06/14/95	06/14/95	06/15/95	06/15/95	06/15/95	06/15/95
SAMPLE DEPTH	CRITERIA (1)	1.0'	3.0'	4.0'	3.0'	1.0'	1.0'	5.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U J	U J	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U	U
EXTRACTABLE TPH	–	14	U	U	U	U	U	U
PAH	N/A(b)	U	U	U		U	U	U
Chrysene & Benzo(a)anthracene(2)					0.44			

SAMPLE ID	SOIL	H728-HA21	H728-HA22	H728-HA23	H728-HA24	H728-HA25	H728-HA26	H728-HA27*
SAMPLE DATE	SCREENING	06/15/95	06/15/95	06/15/95	06/15/95	06/16/95	06/16/95	06/16/95
SAMPLE DEPTH	CRITERIA (1)	4.0'	5.0'	4.0'	4.0'	4.0'	1.0'	4.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	U	U
PAH	N/A(b)	U		U	U	U	U	U
Benzo(b,k)fluoranthene(2)			0.93					
Benzo(a)pyrene			0.41					
Chrysene & Benzo(a)anthracene(2)			0.40					

SAMPLE ID	SOIL	H728-HA113*	H728-HA28	H728-HA29	H728-HA30	H728-HA31	H728-HA32	H728-HA33
SAMPLE DATE	SCREENING	06/16/95	06/16/95	06/16/95	06/19/95	06/19/95	06/19/95	06/16/95
SAMPLE DEPTH	CRITERIA (1)	4.0'	6.0'	4.0'	4.0'	2.0'	1.0'	3.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	0.66	U
EXTRACTABLE TPH	–	U	U	U	U	U	U	U
PAH		U	U	U	U	U	U	U

(1) – (b) N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

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TABLE 4 (Cont.)
Pipeline A
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–HA34	H728–HA35	H728–HA36	H728–HA37	H728–HA48	H728–HA49	H728–HA50
SAMPLE DATE		06/16/95			06/16/95	06/19/95	06/19/95	06/19/95
SAMPLE DEPTH		1.0'			4.0'	2.0'	5.0'	4.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	NA	NA	U	U	U	U
PURGEABLE TPH	–	U	NA	NA	U	0.52	0.65	0.49
EXTRACTABLE TPH	–	U	NA	NA	U	U	U	U
PAH		U	NA	NA	U	U	U	U

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–HA51*	H728–HA115*	H728–HA52	H728–HA53	H728–HA54	H728–HA55
SAMPLE DATE		06/19/95	06/19/95	06/19/95	06/19/95	06/19/95	06/19/95
SAMPLE DEPTH		4.0'	4.0'	5.0'	3.0'	3.0'	3.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	0.64	0.46	0.57	0.61	0.32	0.43
EXTRACTABLE TPH	–	U	U	U	U	U	U
PAH	N/A(b)		U	U	U	U	U
Benzo(b,k)fluoranthene(2)		91					
Benzo(a)pyrene		54					
Chrysene & Benzo(a)anthracene(2)		89					
Fluoranthene		52					
Pyrene		54					

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–HA56	H728–HA57	H728–HA58	H728–HA59	H728–HA60*	H728–HA116*
SAMPLE DATE		06/19/95	06/19/95	06/19/95	06/20/95	06/20/95	06/20/95
SAMPLE DEPTH		6.0'	5.0'	5.0'	6.0'	3.0'	3.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	0.56	U	0.39	0.32 J	0.23 J	0.27
EXTRACTABLE TPH	–	U	U	U	U J	U J	U
PAH		U	U	U	U	U	U

(1) – (b) N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED
NA – PARAMETER NOT ANALYZED

TABLE 4 (Cont.)
Pipeline A
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-SB7 08/02/95 3.0 - 5.0' SOIL mg/kg	H728-SB15 08/04/95 7.0' SOIL mg/kg	H728-SB16 08/04/95 6.0' SOIL mg/kg	H728-SB17* 08/08/95 7.0' SOIL mg/kg	H728-SB52* 08/08/95 7.0' SOIL mg/kg	H728-SB18** 08/09/95 7.0' SOIL mg/kg	H728-SB54** 08/09/95 7.0' SOIL mg/kg
BTEX		U	U	U	U	U	U	U
PURGEABLE TPH	–	U	U	0.26	U	U	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	U	U
PAH		U	U	U	U	U	U	U

(1) – (a) SOIL SCREENING CRITERIA FOR SOILS
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
U – ALL PARAMETERS ARE UNDETECTED

TABLE 5
PIPELINE A GEOPROBE RESULTS (μg/L)

Groundwater Sample	Benzene	Toluene	Ethyl-Benzene	Xylene	TVHC(C1-C9)	TVHC (C10-CX)
H728-HP14-12'	<1	<2	<2	<5	14	<4
H728-HP15-12'	<0.5	<0.7	<0.9	<2	54	<2
H728-HP16-12'	<0.5	<0.7	<0.9	<2	56	<2
H728-HP17-12'	<0.5	<0.7	<0.9	<2	32	<2
H728-HP12-15'	2	<0.7	<1	<2	680	<2
H728-HP18-12'	<0.8	<1	<2	<3	16	<3
H728-HP13-15'	0.5	0.6	<1	<2	490	<2
H728-HP23-10'	<0.5	<0.7	<1	<2	130	<2
H728-HP24-10'	<0.5	<0.7	<1	<2	310	<2
H728-HP25-10'	<0.5	<0.7	<1	<2	17	<2
H728-HP26-10'	<0.5	<0.7	<1	<2	43	<2
H728-HPS-31-5'	<0.5	<0.7	<1	<2	11	<2
H728-HPS-32-5'	<0.5	0.7	<1	<2	7	<2
H728-HPS-36-5'	2	<0.7	<0.9	<2	11	<2
H728-HPS-35-5'	<0.5	<0.7	<0.9	<2	8	<2

All concentrations are in micrograms per liter (μg/L)

CX - All detectable hydrocarbon compounds with more than 10 carbon bonds identifiable during the field screening activities.

TABLE 6
Pipeline A
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

SAMPLE ID	GADNR	H728–MW7	H728–MW15	H728–MW16	H728–MW17	H728–MW18
SAMPLE DATE	WQS (1)	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95
SAMPLE DEPTH		3.5 – 13.5'	2.9 – 12.9'	3.0 – 13.0'	3.0 – 13.0'	3.0 – 13.0'
MATRIX	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX		U	U	U	U	U
PAH		U	U	U	U	U

(1) – GEORGIA DEPARTMENT OF NATURAL RESOURCES, IN–STREAM WATER QUALITY STANDARDS

(–) – NO REGULATORY OR ACTION LEVEL LISTED

* – DENOTES SAMPLE/DUPLICATE PAIRS
NS – PARAMETER NOT SAMPLED
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728–HA38 06/18/95 2.0' SOIL mg/kg	H728–HA39 06/18/95 3.0' SOIL mg/kg	H728–HA40 06/18/95 3.0' SOIL mg/kg	H728–HA41* 06/18/95 3.0' SOIL mg/kg	H728–HA114* 06/16/95 3.0' SOIL mg/kg	H728–HA42 06/16/95 3.0' SOIL mg/kg
BTEX		U	U	U	U	U	U J
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	35
PAH		U	U	U	U	U	U

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728–HA43 06/16/95 3.0' SOIL mg/kg	H728–HA44 06/16/95 5.0' SOIL mg/kg	H728–HA45 06/18/95 5.0' SOIL mg/kg	H728–HA46 06/18/95 5.0' SOIL mg/kg	H728–HA47 06/18/95 2.0' SOIL mg/kg
BTEX		U J	U	U J	U	U J
PURGEABLE TPH	–	U	U	U	U	U
EXTRACTABLE TPH	–	U	18	U	16	U
PAH		U	U	U	U	U

(1) – (a) SOIL SCREENING CRITERIA FOR SOILS
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA61 06/20/95 4.0' SOIL mg/kg	H728-HA62 06/20/95 5.0' SOIL mg/kg	H728-HA63 06/20/95 6.0' SOIL mg/kg	H728-HA64 06/20/95 3.0' SOIL mg/kg	H728-HA65 06/20/95 8.0' SOIL mg/kg	H728-HA66 06/20/95 2.0' SOIL mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	0.35	0.47	U	0.56	U	0.64
EXTRACTABLE TPH	–	U	U	U	U	U	U
PAH		U	U	U	U	U	U

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA67 06/20/95 6.0' SOIL mg/kg	H728-HA68 06/21/95 4.0' SOIL mg/kg	H728-HA69 06/21/95 3.0' SOIL mg/kg	H728-HA70 06/21/95 6.0' SOIL mg/kg	H728-HA71* 06/21/95 3.0' SOIL mg/kg	H728-HA117* 06/21/95 3.0' SOIL mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	2.0	2.2	U	U	U	U
EXTRACTABLE TPH	–	U	U	U J	U J	U J	U J
PAH		U	U	U	U	U	U

(1) – (a) SOIL SCREENING CRITERIA FOR SOILS
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728–HA72 06/21/95 6.0' SOIL mg/kg	H728–HA73 06/21/95 6.0' SOIL mg/kg	H728–HA74 06/21/95 6.0' SOIL mg/kg	H728–HA75 06/21/95 6.0' SOIL mg/kg	H728–HA76 06/21/95 8.0' SOIL mg/kg	H728–HA77 06/21/95 4.0' SOIL mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U J	U J	U J	U J	12 J	1.7 J
PAH	N/A (b)	U	U	U	U	U	
Benzo(b,k)fluoranthene(2)							91
Benzo(g,h,i)perylene	–						21
Benzo(a)pyrene							46
Chrysene & Benzo(a)anthracene(2)							12
Fluoranthene							130
Fluorene							32
Indeno(1,2,3–cd)pyrene & Dibenzo(ah)anthracene(2)							42
Naphthalene							12
Phenanthracene & Anthracene(2)	–						210
Pyrene							110

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728–HA78 06/16/95 6.0' SOIL mg/kg	H728–HA79* 06/21/95 6.0' SOIL mg/kg	H728–HA118* 06/21/95 6.0' SOIL mg/kg	H728–HA80 06/16/95 6.0' SOIL mg/kg	H728–HA81 06/18/95 4.0' SOIL mg/kg	H728–HA82 06/18/95 2.0' SOIL mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	13 J	15 J	U	U	U
PAH	N/A (b)				U	U	U
Benzo(b,k)fluoranthene(2)		0.42	0.62	0.82			
Pyrene				0.41 J			

(1) – (b) N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL	H728-HA83	H728-HA84	H728-HA85*	H728-HA119*	H728-HA86	H728-HA87
SAMPLE DATE	SCREENING	06/22/95	06/22/95	06/22/95	06/22/95	06/22/95	06/22/95
SAMPLE DEPTH	CRITERIA (1)	3.0'	6.0'	2.0'	2.0'	4.0'	5.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	U
PAH	N/A (b)	U	U		U	U	U
Benzo(b,k)fluoranthene(2)				590			
Chrysene & Benzo(a)anthracene(2)				500			

SAMPLE ID	SOIL	H728-HA88	H728-HA89	H728-HA90	H728-HA91	H728-HA92	H728-HA93
SAMPLE DATE	SCREENING	06/22/95	06/22/95	06/27/95	06/27/95	06/27/95	06/27/95
SAMPLE DEPTH	CRITERIA (1)	2.0'	2.0'	5.0'	2.0'	1.0'	4.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX			U	U J	U	U	U
Ethylbenzene	140 (b)	0.0059					
Xylenes	700 (b)	0.0074					
PURGEABLE TPH	–	2.3	3.6	U	U	0.66	U
EXTRACTABLE TPH	–	2200 J	1200 J	U	22	U	U
PAH	N/A (b)		U			U	U
Acenaphthylene	–				0.44		
Benzo(b,k)fluoranthene(2)					2.1		
Benzo(g,h,i)perylene	–				1.0		
Benzo(a)pyrene					1.3		
Chrysene & Benzo(a)anthracene(2)					2.2		
Fluoranthene		16			1.1		
Indeno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene(2)					1.2		
1-Methylnaphthalene	–			0.82			
2-Methylnaphthalene	–			0.98			
Naphthalene				3.8			
Phenanthrene & Anthracene(2)	–				0.45		
Pyrene		14 J			1.4		

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–HA94	H728–HA95	H728–HA96	H728–HA97	H728–HA98	H728–HA99
SAMPLE DATE		06/27/95	06/27/95	06/27/95	06/27/95	06/27/95	06/27/95
SAMPLE DEPTH		3.0'	4.0'	3.0'	4.0'	3.0'	3.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U J	U
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	62	U	U	14	30
PAH	N/A (b)	U	U	U	U		
Acenaphthylene	–						1.8
Benzo(b,k)fluoranthene(2)						6.41	22
Benzo(g,h,i)perylene	–						5.8
Benzo(a)pyrene						0.48	12
Chrysene & Benzo(a)anthracene(2)						0.84	26
Fluoranthene						0.80	19
Indeno(1,2,3–cd)pyrene & Dibenzo(a,h)anthracene(2)							7.7
Phenanthrene & Anthracene(2)	–					0.61	5.3
Pyrene						0.73	20

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–HA100	H728–HA101	H728–HA102*	H728–HA103	H728–HA104	H728–HA120*
SAMPLE DATE		06/27/95	06/27/95	06/27/95	06/27/95	06/27/95	06/27/95
SAMPLE DEPTH		4.0'	3.0'	1.0'	3.0'	3.0'	1.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	U	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	32
PAH	N/A (b)	U	U	U	U	U	
Benzo(b,k)fluoranthene(2)							5.9
Benzo(g,h,i)perylene	–						1.5
Benzo(a)pyrene							2.9
Chrysene & Benzo(a)anthracene(2)							5.2
Fluoranthene							3.5
Indeno(1,2,3–cd)pyrene & Dibenzo(a,h)anthracene(2)							3.4
Phenanthrene & Anthracene(2)	–						1.1
Pyrene							4.4

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728-SB19	H728-SB20	H728-SB21	H728-SB22	H728-SB23	H728-SB24
SAMPLE DATE		08/06/95	08/06/95	08/08/95	08/08/95	08/06/95	08/06/95
SAMPLE DEPTH		7.0'	7.0'	7.0'	5.0'	5.0'	7.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	U	83	U	U
EXTRACTABLE TPH	–	U	U	U	U	U	U
PAH		U	U	U	U	U	U

NOTE: SOIL BORINGS CORRESPOND TO MONITORING WELL LOCATIONS
(1) – SOIL SCREENING CRITERIA FOR SOILS
(–) – NO CRITERIA EXISTS

U – ALL PARAMETERS ARE UNDETECTED

TABLE 7 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL	H728-SB25	H728-SB26	H728-SB27	H728-SB28	H728-SB29*	H728-SB53*	H728-SB30
SAMPLE DATE	SCREENING	08/07/95	08/07/95	08/07/95	08/07/95	08/07/95	08/07/95	08/15/95
SAMPLE DEPTH	CRITERIA (1)	9.0'	5.0'	3.0'	5.0'	7.0'	7.0'	7.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX				U	U	U	U	U
Benzene	0.12 (b)	0.0067	0.041 J					
Ethylbenzene	140 (b)	0.018	0.034 J					
Toluene	500 (b)	0.0064						
Xylenes	700 (b)	0.0099	0.019 J					
PURGEABLE TPH	–	1.6	20 J	U	U	U	U	U
EXTRACTABLE TPH	–	8000	960	19	U	U	U	U
PAH	N/A (b)			U	U	U	U	U
Acenaphthene	–	61	33					
Acenaphthylene	–	35						
Benzo(b,k)fluoranthene(2)		250	62					
Benzo(g,h,i)perylene	–	68	15					
Benzo(a)pyrene		120	31					
Chrysene & Benzo(a)anthracene(2)		380	110					
Fluoranthene		510	180					
Fluorene		240	82					
Indeno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene(2)		72	19					
1-Methylnaphthalene	–	64	13					
2-Methylnaphthalene	–	100	17					
Naphthalene		81	10					
Phenanthrene & Anthracene(2)	–	880	360					
Pyrene		410	150					

NOTE: SOIL BORINGS CORRESPOND TO MONITORING WELL LOCATIONS

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
N/A – NOT APPLICABLE. THE HEALTH BASED THRESHOLD LEVEL EXCEEDS THE EXPECTED SOIL CONCENTRATION UNDER FREE PRODUCT CONDITIONS.
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED

U – ALL PARAMETERS ARE UNDETECTED

plab728.wk1

TABLE 8

PIPELINE B GEOPROBE RESULTS

Groundwater Sample	Benzene	Toluene	E-Benzene	Xylene	TVHC (C1-C9)	TVHC (C10-CX)
H728-HP28-10'	2	<1	<2	<4	5200	<3
H728-HP27-10'	<1	<2	<2	<5	160	<4
H728-HP29-10'	<0.5	<0.7	<1	<2	46	<2
H728-HP30-10'	2	<0.7	<1	<2	30	<2
H728-HP31-10'	<0.9	<1	<2	<4	11	<3
H728-HP32-10'	<0.5	<0.7	<1	<2	12	<2
H728-HP44-7'	<0.8	<1	<2	<3	5700	<3
H728-HP43-6.5'	7	<1	<2	10	690	<3
H728-HP42-10'	<0.8	<1	<2	<3	300	<3
H728-HP38-7'	<0.8	<1	<2	<3	16	<3
H728-HP35-7'	2	<1	<2	<3	4800	<3
H728-HP34-10'	5500	<70	<91	<200	190000	<170
H728-HP33-10'	1	<1	<2	<3	40	<3
H728-HP36-10'	55	<7	<9	<20	20000	<17
H728-HP37-10'	<2	<4	<5	<10	5300	<9
H728-HP39-10'	5	<1	<2	<3	78	<3
H728-HP40-10'	<0.8	<1	<2	<3	490	<3
H728-HP41-10'	<1	<2	<2	<5	3700	<4

All concentrations are in micrograms per liter (μg/L)

TABLE 9
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

SAMPLE ID	GADNR	H728-MW19	H728-MW20	H728-MW21	H728-MW22	H728-MW23	H728-MW24
SAMPLE DATE	WQS (1)	09/06/95	09/06/95	09/06/95	09/06/95	09/06/95	09/06/95
SAMPLE DEPTH		2.9 - 12.9'	3.0 - 13.0'	3.2 - 13.3'	2.5 - 12.5'	3.0 - 13.0'	3.0 - 13.0'
MATRIX	WATER	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX		U	U	U		U	U
Benzene	71.28				6.6		
PAH		U	U		U	U	U
Fluoranthene	370			14			
Phenanthrene & Anthracene(3)	110,000			24			
Pyrene	11,000			15			

(1) - GEORGIA DEPARTMENT OF NATURAL RESOURCES, IN-STREAM WATER QUALITY STANDARDS
(2) - COMPOUNDS ARE COELUTING, LEVELS ARE CORRESPONDING AS PRESENTED
(-) - NO REGULATORY OR ACTION LEVEL LISTED

* - DENOTES SAMPLE/DUPLICATE PAIRS
NS - PARAMETER NOT SAMPLED
J - RESULT ESTIMATED
U - ALL PARAMETERS ARE UNDETECTED

TABLE 9 (Cont.)
Pipeline B
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

SAMPLE ID	GADNR	H728–MW25*	H728–MW32*	H728–MW26	H728–MW27	H728–MW28	H728–MW29	H728–MW30
SAMPLE DATE	WQS (1)	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95
SAMPLE DEPTH		3.4 – 13.4'	3.4 – 13.4'	4.1 – 14.1'	3.2 – 13.2'	3.8 – 13.8'	2.8 – 12.8'	3.0 – 13.0'
MATRIX	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX						U		U
Benzene	71.28	5.8	5.9	1.9				
Ethylbenzene	28,718	3.5	3.6					
Toluene	200,000	2.6	2.5	1.8	1.4		5.1	
Xylenes	–							
PAH					U	U	U	U
Acenaphthene	–	120	120	27				
Benzo(a)pyrene	0.0311			[32 J]				
Benzo(g,h,i)perylene	–			15				
Benzo(b,k)fluoranthene(2)	0.0311			[140]				
Chrysene & Benzo(a)anthracene(2)	0.0311	[120]	[100]	[200]				
Fluoranthene	370	160	150	150				
Fluorene	14,000	250	270	87				
Indeno(1,2,3–cd)pyrene & Dibenzo(a,h)anthracene(2)	0.0311			[33]				
Naphthalene	–	970	900	110				
Phenanthrene & Anthracene(2)	110,000	120	120	350				
Pyrene	11,000	110	110	120				
1–Methylnaphthalene	–	210	200	34				
2–Methylnaphthalene	–	290	280	57				

(1) – GEORGIA DEPARTMENT OF NATURAL RESOURCES, IN–STREAM WATER QUALITY STANDARDS
(2) – COMPOUNDS ARE COELUTING, LEVELS ARE CORRESPONDING AS PRESENTED
(–) – NO REGULATORY OR ACTION LEVEL LISTED
[ ] – REGULATORY LEVEL EXCEEDED

* – DENOTES SAMPLE/DUPLICATE PAIRS
NS – PARAMETER NOT SAMPLED
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 10
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA1 06/13/95 2.0' SOIL mg/kg	H728-HA2 06/13/95 4.0' SOIL mg/kg	H728-HA3 06/13/95 3.0' SOIL mg/kg	H728-HA4 06/13/95 2.0' SOIL mg/kg	H728-HA5 06/13/95 3.0' SOIL mg/kg
BTEX		U	U	U		U J
Ethylbenzene	18 (b)				0.0087	
Xylenes	700 (b)				0.08	
PURGEABLE TPH	–	230	2600	8400	14	350
EXTRACTABLE TPH	–	190	54	55	12	92
PAH		U			U	
Chrysene & Benzo(a)anthracene(2)	0.66 (b)		[2.1]			
Fluoranthene	980 (c)		4.3			
2-Methylnaphthalene	–			0.5		
Phenanthrene & Anthracene(2)	–		5.6			
Pyrene	1400 (c)		3.2			0.38

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA6 06/13/95 5.0' SOIL mg/kg	H728-HA7 06/13/95 5.0' SOIL mg/kg	H728-HA8 06/14/95 5.0' SOIL mg/kg	H728-HA9 06/14/95 3.0' SOIL mg/kg	H728-HA10* 06/14/95 2.0' SOIL mg/kg
BTEX		U				
Benzene	0.017 (b)				[0.067]	0.010
Ethylbenzene	18 (b)			0.012	0.097	0.0081
Xylenes	700 (b)		1.4	0.015	0.69	0.013
PURGEABLE TPH	–	33,000	1200	3.4	280	570
EXTRACTABLE TPH	–	2700	180	11	16	U
PAH		U	U	U	U	U
Benzo(b,k)fluoranthene(2)	0.66 (b)					
Chrysene & Benzo(a)anthracene(2)	0.66 (b)					
Fluoranthene	980 (c)					
Phenanthrene & Anthracene(2)	–					
Pyrene	1400 (c)					

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
– (c) CERCLA SSL USED BECAUSE NO STATE CRITERIA EXISTS FOR THESE COMPOUNDS
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS
[ ] – REGULATORY CRITERIA EXCEEDED

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

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TABLE 10 (Cont.)
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA111* 06/14/95 2.0' SOIL mg/kg	H728-HA11 06/14/95 3.0' SOIL mg/kg	H728-HA12 06/14/95 4.0' SOIL mg/kg	H728-HA13 06/14/95 2.0' SOIL mg/kg	H728-HA14 06/14/95 3.0' SOIL mg/kg
BTEX				U		
Benzene	0.017 (b)	0.0097	0.011			
Ethylbenzene	18 (b)		0.013		0.036 J	
Toluene	115 (b)					7.1
Xylenes	700 (b)	0.012	0.023		0.059 J	5.8
PURGEABLE TPH	–	2.5	3600	U	100	2100
EXTRACTABLE TPH	–	U	87	U	170	310
PAH		U		U	U	U
Benzo(b,k)fluoranthene(2)	0.66 (b)		0.58			
Chrysene & Benzo(a)anthracene(2)	0.66 (b)		[1.2]			
Fluoranthene	980 (c)		2.0			
Phenanthrene & Anthracene(2)	–		2.4			
Pyrene	1400 (c)		1.4			

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
– (c) CERCLA SSL USED BECAUSE NO STATE CRITERIA EXISTS FOR THESE COMPOUNDS
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS
[ ] – REGULATORY CRITERIA EXCEEDED

J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 12 (Cont.)
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

SAMPLE ID	GADNR	H728-MW12	H728-MW13*	H728-MW33*	H728-MW14
SAMPLE DATE	WQS (1)	09/07/95	09/07/95	09/07/95	09/07/95
SAMPLE DEPTH		2.9 - 12.9'	4.0 - 14.0'	4.0 - 14.0'	4.0 - 14.0'
MATRIX	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX			U	U	U
Ethylbenzene	28,718	3.6			
Xylenes	–	7.5			
PAH			U	U	U
Naphthalene	–	12			
Phenanthrene & Anthracene(2)	110,000				

(1) – GEORGIA DEPARTMENT OF NATURAL RESOURCES, IN-STREAM WATER QUALITY STANDARDS
(2) – COMPOUNDS ARE COELUTING, LEVELS ARE CORRESPONDING AS PRESENTED
(–) – NO REGULATORY OR ACTION LEVEL LISTED

* – DENOTES SAMPLE/DUPLICATE PAIRS
NS – PARAMETER NOT SAMPLED
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 10 (Cont.)
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-HA122 06/20/95 3.0' SOIL mg/kg	H728-HA123 06/20/95 3.0' SOIL mg/kg	H728-HA124 06/20/95 3.0' SOIL mg/kg	H728-HA125 06/20/95 3.0' SOIL mg/kg	H728-HA126 06/20/95 3.0' SOIL mg/kg	H728-HA127 06/20/95 2.0' SOIL mg/kg	H728-HA132 06/20/95 3.0' SOIL mg/kg
BTEX		U	U	U	U	U	U	U
PURGEABLE TPH	–	82,000 J	1400 J	1100 J	2200 J	18 J	3000 J	1200 J
EXTRACTABLE TPH	–	730	59	410	560	19	51	410
TRPH	–	1500 J	3800 J	3200 J	3200 J	210 J	760 J	3100 J
PAH						U	U	
Benzo(b,k)fluoranthene	0.66 (b)				[5.1]			
Benzo(g,h,i)perylene	–				1.2			
Benzo(a)pyrene	0.66 (b)				[2.5]			
Chrysene & Benzo(a)anthracene(2)	0.66 (b)		[0.86]		[5.4]			[0.96]
Fluoranthene	–		0.9		3.1			0.92
Indeno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene(2)	0.66 (b)				[3.7]			
1-Methylnaphthalene	–	0.99			2.4			1.8
2-Methylnaphthalene	–	3.9		1.5	1.2			0.91
Naphthalene	30 (c)	2.5		1.1				
Phenanthrene & Anthracene(2)	–		1.3		3.5			1.2
Pyrene	1400 (c)		0.86		3.1			0.95
PRIORITY POLLUTANT METALS								
Arsenic	5 – 100 (a)			1.7	1.8			2.2
Barium	32 – 4000 (a)	3.2	7.1	18	20	7.3	16	18
Chromium	10 – 400 (a)	1.7	1.9	3.3	3.2	4.3	2.6	4.1
Lead	1.5 – 100 (a)	6.1 J	17 J	28 J	28 J	9.1 J	56 J	32 J
Mercury	0.2 – 20 (a)					0.052		

(1) – (a) SOIL SCREENING CRITERIA FOR INORGANICS IN SOILS
– (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
– (c) CERCLA SSL USED BECAUSE NO STATE CRITERIA EXISTS FOR THESE COMPOUNDS
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED
[ ] – REGULATORY CRITERIA EXCEEDED

TABLE 10 (Cont.)
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN SOIL

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–SB1	H728–SB2	H728–SB3	H728–SB4*	H728–SB50*	H728–SB5
SAMPLE DATE		08/01/95	08/01/95	08/01/95	08/02/95	08/02/95	08/01/95
SAMPLE DEPTH		3.0'	7.0'	3.0 – 5.0'	3.0 – 5.0'	3.0 – 5.0'	5.0 – 7.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U	U
PURGEABLE TPH	–	U	U	0.84	2.2	1.1	U
EXTRACTABLE TPH	–	U	15	U	U	U	U
TRPH	–	21	110	23	26	24	41
PAH		U	U	U	U	U	U
PRIORITY POLLUTANT METALS							NA
Barium	32 – 4000 (a)	11	11	9.4	11	21	
Chromium	10 – 400 (a)	1.9	3.7	7.1	2.5	3.8	
Lead	1.5 – 100 (a)	2.1	7.6	5.7	21	22	
Mercury	0.2 – 20 (a)	0.017	0.036	0.087	0.033	0.041	

SAMPLE ID	SOIL SCREENING CRITERIA (1)	H728–SB6	H728–SB8	H728–SB9	H728–SB10	H728–SB11
SAMPLE DATE		08/02/95	08/02/95	08/03/95	08/03/95	08/03/95
SAMPLE DEPTH		5.0'	5.0'	7.0'	5.0'	7.0'
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BTEX		U	U	U	U	U
PURGEABLE TPH	–	260	46,000	U	U	U
EXTRACTABLE TPH	–	110	1700	U	U	U
PAH				U	U	U
Acenaphthene	–		2.2			
Benzo(b,k)fluoranthene(2)	0.66 (b)		[3.7]			
Chrysene & Benzo(a)anthracene(2)	0.66 (b)		[6.9]			
Fluoranthene	980 (c)	0.73	9.4			
Fluorene	160 (c)		2.1			
1–Methylnaphthalene	–		4.1			
2–Methylnaphthalene	–	0.59	10			
Naphthalene	30 (c)		6.4			
Phenanthrene & Anthracene(2)	–	0.69	12			
Pyrene	1400 (c)	0.59	7.4			

NOTE: SOIL BORINGS CORRESPOND TO MONITORING WELL LOCATIONS
(1) – (a) SOIL SCREENING CRITERIA FOR INORGANICS IN SOILS
– (b) STATE UST CRITERIA FOR ORGANICS IN SOILS
– (c) CERCLA SSL USED BECAUSE NO STATE CRITERIA EXISTS FOR THESE COMPOUNDS
(2) – THESE CONSTITUENTS CANNOT BE INDIVIDUALLY CONFIRMED BECAUSE THEY COELUTE IN METHOD 8100
(–) – NO CRITERIA EXISTS

* – DENOTES SAMPLE/DUPLICATE PAIRS
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED
NA – PARAMETER NOT ANALYZED
[ ] – REGULATORY CRITERIA EXCEEDED

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TABLE 10 (Cont.)
Building 728
Hunter Army Airfield

SAMPLE ID SAMPLE DATE SAMPLE DEPTH MATRIX UNITS	SOIL SCREENING CRITERIA (1) mg/kg	H728-SB12 08/04/95 5.0' SOIL mg/kg	H728-SB13 08/03/95 7.0' SOIL mg/kg	H728-SB14 08/04/95 7.0' SOIL mg/kg
BTEX		U J	U J	U
Xylenes	700 (b)			
PURGEABLE TPH	–	390	U	U
EXTRACTABLE TPH	–	89	U	U
PAH		U	U	U

NOTE: SOIL BORINGS CORRESPOND TO MONITORING WELL LOCATIONS

(1) – (b) STATE UST CRITERIA FOR ORGANICS IN SOILS.
(–) – NO CRITERIA EXISTS

J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

TABLE 12
Building 728
Hunter Army Airfield
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER

SAMPLE ID	GADNR	H728-MW1	H728-MW2	H728-MW3*	H728-MW31*	H728-MW4	H728-MW5
SAMPLE DATE	WQS (1)	09/06/95	09/07/95	09/06/95	09/06/95	09/07/95	09/06/95
SAMPLE DEPTH		3.2 – 13.2'	3.8 – 13.8'	2.6 – 12.6'	2.6 – 12.6'	2.6 – 12.6'	3.3 – 13.3'
MATRIX	WATER	WATER	WATER	WATER	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX		U				U	U
Benzene	71.28		2.4	1.6	1.4		
PAH		U	U	U	U	U	U
RCRA Metals							
Arsenic	50					38	12
Barium	–	290	860	120	250	240	32
Chromium	120	67	[190]	11	36	73	
Lead	1.3	[40]	[180]	[100]	[24]	[110]	
Mercury	0.012		[0.5]	[0.59]	[0.4]		

SAMPLE ID	GADNR	H728-MW6	H728-MW8	H728-MW9	H728-MW10	H728-MW11
SAMPLE DATE	WQS (1)	09/07/95	09/07/95	09/06/95	09/06/95	09/06/95
SAMPLE DEPTH		2.9 – 12.9'	3.5 – 13.5'	3.1 – 13.1'	2.9 – 12.9'	2.3 – 12.3'
MATRIX	WATER	WATER	Free Product	WATER	WATER	WATER
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
BTEX			NS	U	U	
Benzene	71.28	[75]				[290]
Ethylbenzene	28,718	36				34
Toluene	200,000					10
Xylenes	–	22				190
PAH			NS	U	U	U
Acenaphthene	–	22				
Acenaphthalene	–	28				
Phenanthrene & Anthracene(2)	110,000	54				

(1) – GEORGIA DEPARTMENT OF NATURAL RESOURCES, IN-STREAM WATER QUALITY STANDARDS
(2) – COMPOUNDS ARE COELUTING, LEVELS ARE CORRESPONDING AS PRESENTED
(–) – NO REGULATORY OR ACTION LEVEL LISTED
[ ] – REGULATORY LEVEL EXCEEDED

* – DENOTES SAMPLE/DUPLICATE PAIRS
NS – PARAMETER NOT SAMPLED
J – RESULT ESTIMATED
U – ALL PARAMETERS ARE UNDETECTED

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TABLE 11 BUILDING 728 AREA GEOPROBE RESULTS (ug/kg)						
Groundwater Sample	Benzene	Toluene	Ethyl-Benzene	Xylene	TVHC (C1-C9)	TVHC (C10-CX)
H728-HP1-10'	<2	<3	<4	<10	12	<8
H728-HP2-10'	36	4	42	38	13000	<8
H728-HP3-10'	110	<3	<43	620	35000	36
H728-HP4-10'	<2	<3	<4	<10	1400	<8
H728-HP5-10'	27	39	<43	670	3900	<8
H728-HP6-10'	42000	53000	17000	150000	2100000	<8000
H728-HP7-10'	570	22	22	360	11000	<8
H728-HP8-10'	3	<4	<5	<11	1400	<9
H728-HP9-10'	4400	7500	520	8000	130000	<880
H728-HP10-10'	<3	<4	<5	<11	1700	<9
H728-HP11-10'	<51	<72	<97	<210	50000	<180
H728-HP19-10'	8	31	<48	240	38000	39
H728-HP20-10'	440	670	190	1100	54000	350
H728-HP21-10'	<2	<4	<5	<11	220	<9
H728-HP22-10'	<0.5	<0.7	<1	<2	190	<2

TABLE 13
WATER SUPPLY WELLS WITHIN 2-MILE RADIUS

Well I.D.	Quad.	Owner	Total Depth	Casing Depth	Use
017	36O	Howard Johnson Motel	448	294	Commercial
125	36O	McCallan	341	146	Public
302	36O	City of Savannah 25	540	287	Public
112	36O	SCL RR, Shops	508	275	Commercial
285	36O	U.S. Army, Hunter 1	504	259	Public
286	36O	U.S. Army, Hunter 2	555	260	Public
290	36O	U.S. Army, Hunter 4	300	90	Not Used
287	36O	U.S. Army, Hunter 3	370	324	Public
036	36P	City of Savannah 36	414	252	Public
033	37Q	Derst Baking Co.	568	258	Industrial
097	37Q	Reynolds - Manley L1	346	128	Unused
096	37Q	Reynolds - Manley L2	514	258	Industrial
031	37Q	City of Savannah 09	710	267	Public
006	37P	City of Savannah 13	1000	270	Public

Quad: Georgia Grid System. The full well name as in Bulletin 113 is "36O017" but only "017" is listed on the map for brevity.

Sources: Hunter AAF in AT&E, 1993.
GA Geologic Survey, Bulletin 113, 1990.
U.S.G.S. Well Listing, 1991 in AT&E, 1993.

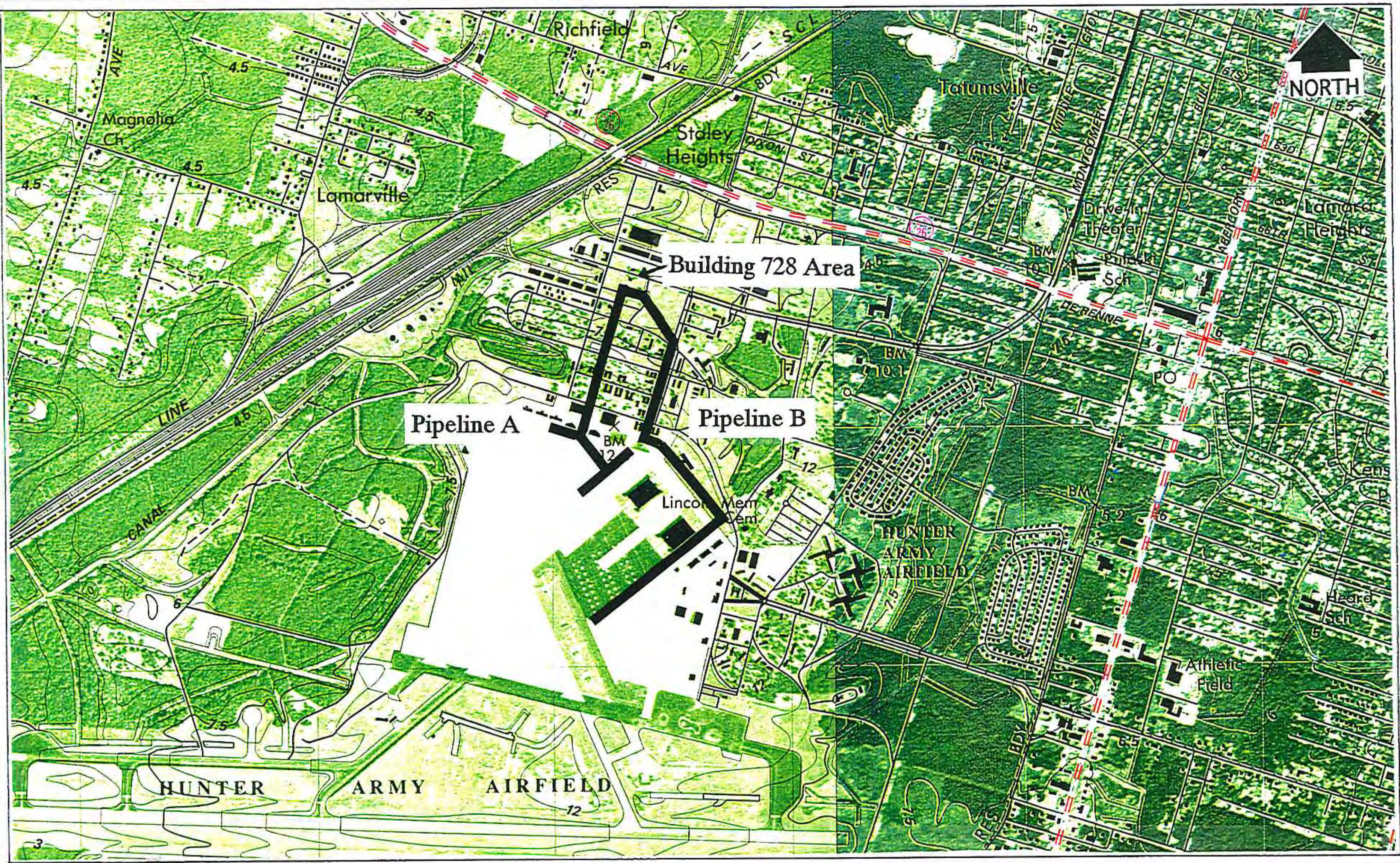
TABLE 14
BUILDING 728 AREA WELL SUMMARY

Location	Screen Interval, ft	Water Depth, TOC	TOC Elevation, msl	Water Level Elevation, msl	Surface Elevation, msl
H728-MW1	3.2-13.2	2.40	19.20	16.80	19.5
H728-MW2	3.8-13.8	4.54	20.51	15.97	20.8
H728-MW3	2.6-12.6	4.97	20.80	15.83	21.1
H728-MW4	3.4-13.4	2.67	18.74	16.07	19.1
H728-MW5	3.3-13.3	4.83	20.37	15.54	20.7
H728-MW6	2.9-12.9	4.09	20.02	15.93	20.4
H728-MW7	3.5-13.5	3.17	19.17	16.00	19.6
H728-MW8	3.5-13.5	3.85*	19.17	15.32	19.6
H728-MW9	3.1-13.1	5.72	20.27	14.55	20.5
H728-MW10	2.9-12.9	5.44	19.11	13.67	19.4
H728-MW11	2.3-12.3	5.59	18.89	13.30	19.3
H728-MW12	2.9-12.9	3.14	18.51	15.37	18.8
H728-MW13	4.0-14.0	5.44	18.39	12.95	18.7
H728-MW14	4.0-14.0	6.17	18.76	12.59	19.0
H728-MW15	2.9-12.9	8.40	37.29	28.89	37.7
H728-MW16	3.0-13.0	6.22	35.43	29.21	35.9
H728-MW17	3.0-13.0	6.69	36.49	29.80	36.9
H728-MW18	3.0-13.0	7.92	36.91	28.99	37.4
H728-MW19	2.9-12.9	5.75	33.02	27.27	33.3
H728-MW20	3.0-13.0	6.74	37.36	30.62	37.9
H728-MW21	3.2-13.2	4.78	35.60	30.82	36.1
H728-MW22	2.5-12.5	2.12	32.22	30.10	32.7
H728-MW23	3.0-13.0	1.16	31.75	30.59	32.1
H728-MW24	3.0-13.0	5.18	37.26	32.08	37.7
H728-MW25	3.4-13.4	5.78	37.98	32.20	38.5
H728-MW26	4.1-14.1	5.75	37.98	32.23	38.4
H728-MW27	3.2-13.2	5.29	37.50	32.21	37.9
H728-MW28	3.8-13.8	4.91	37.23	32.32	37.6
H728-MW29	2.8-12.8	4.73	36.95	32.22	37.4
H728-MW30	3.0-13.0	4.78	37.25	32.47	37.6

Wells measured 9/5/95

* - product

FIGURES



2000 0 2000

SCALE: 1:24000

M&E METCALF & EDDY

SOURCE: GARDEN CITY AND SAVANNAH, GA USGS QUADRANGLE MAPS

AIRFIELD LOCATION MAP
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA

FIGURE 1

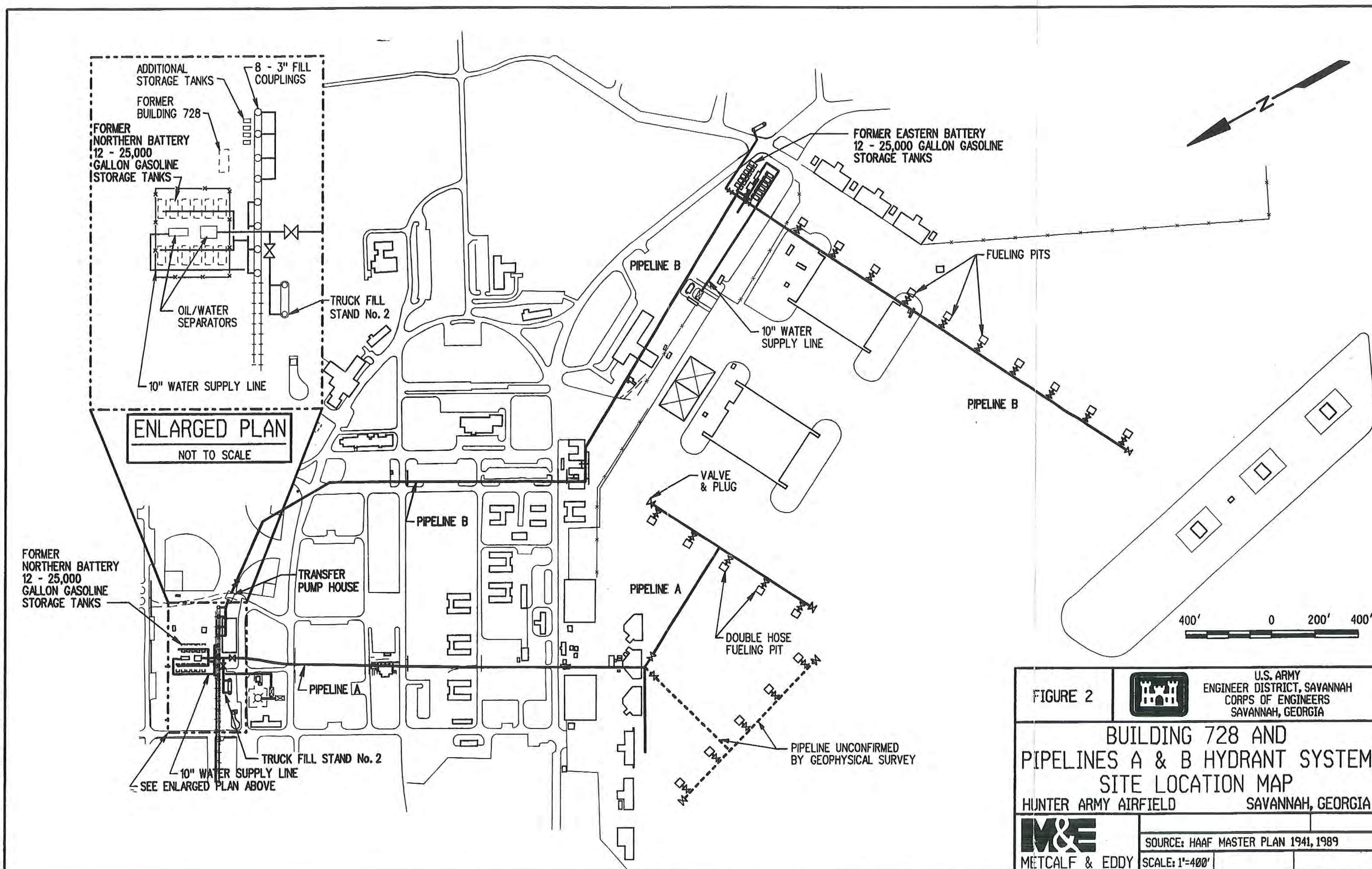


FIGURE 2

U.S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA

BUILDING 728 AND PIPELINES A & B HYDRANT SYSTEM SITE LOCATION MAP

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

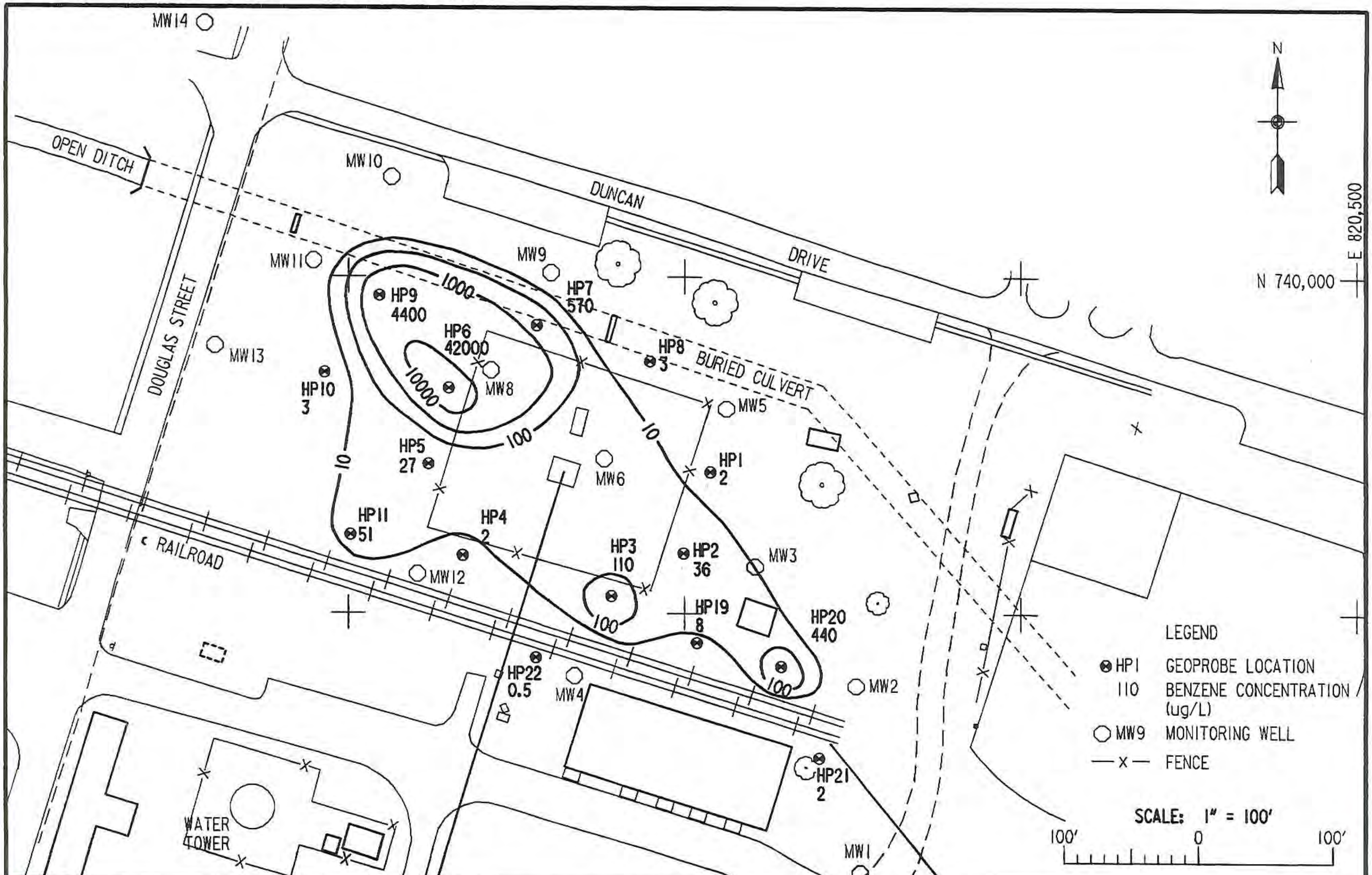
METCALF & EDDY

SOURCE: HAAF MASTER PLAN 1941, 1989

SCALE: 1"=400'

p:\proj\16602hef\c\bldg728a.dgn DATE: 07-31-96 BY: M.A. FRANK

LOC. p:\proj\16602HAF\C\CZHAF001.DGN DATED: 12-29-95 BY: ROS



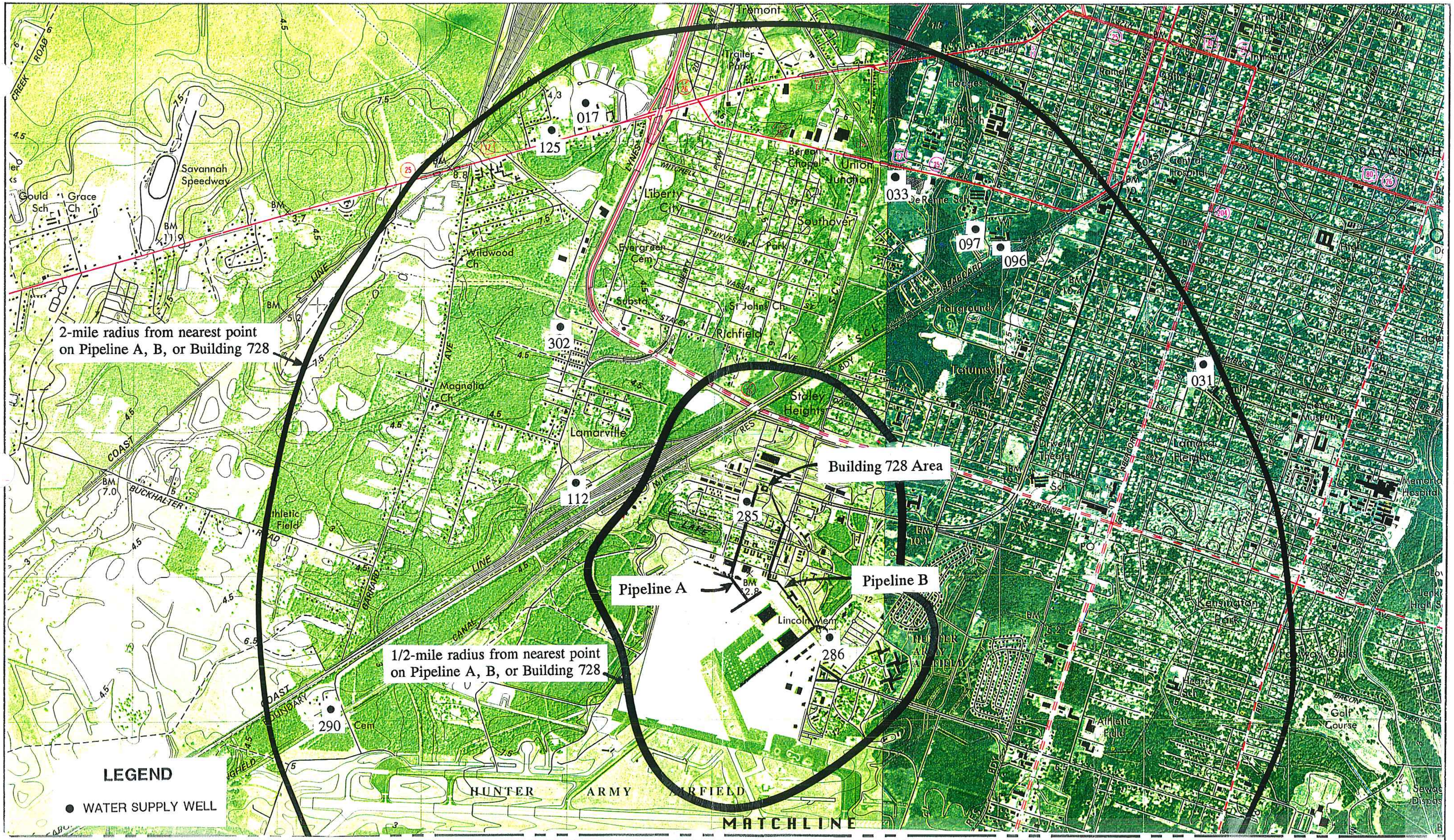
U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

BUILDING 728 AREA
GEOPROBE BENZENE CONCENTRATION MAP

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

FIGURE 3

METCALF & EDDY



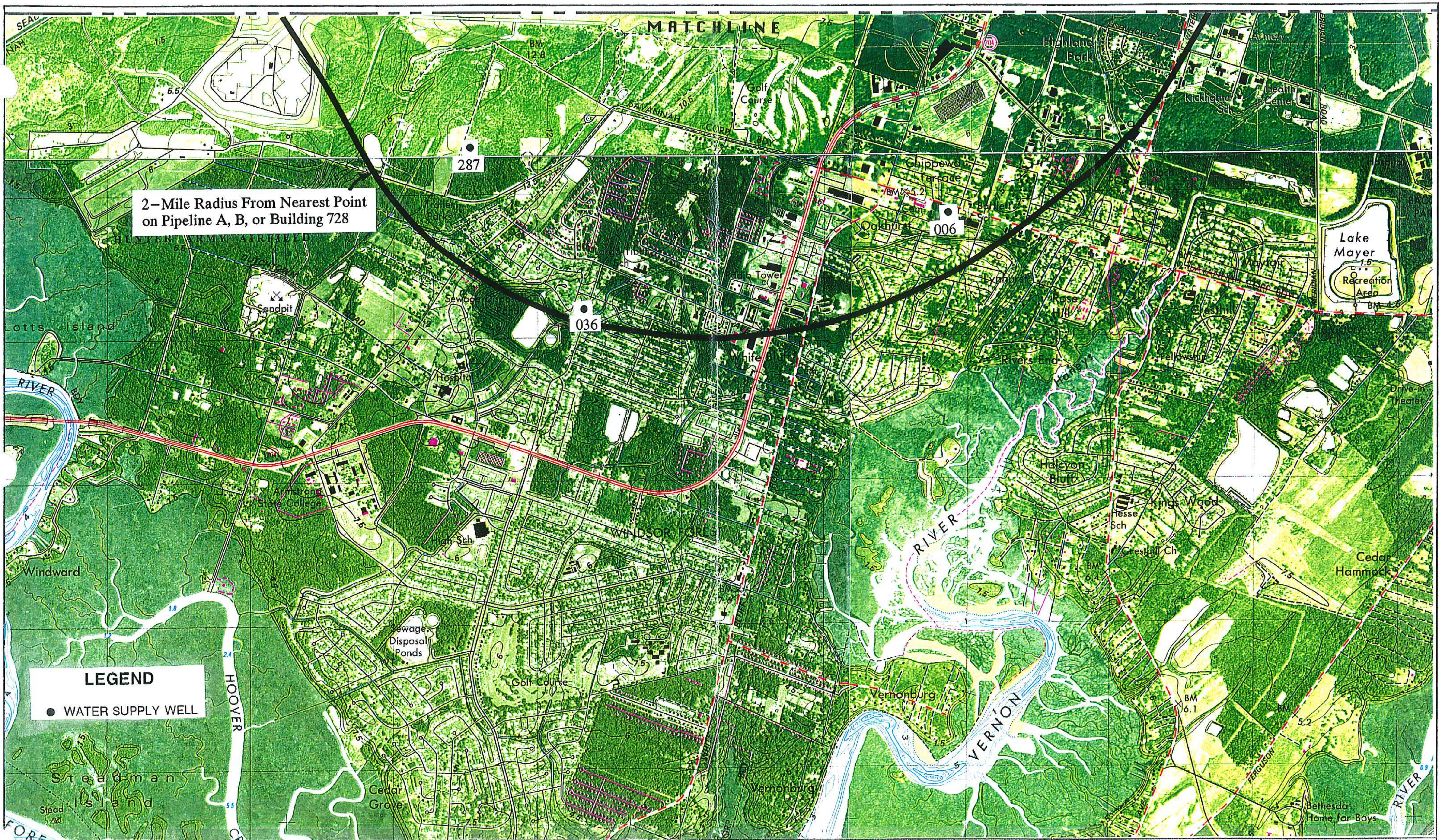
SCALE 1:24 000

CONTOUR INTERVAL 1.5 METERS, NATIONAL GEODETIC VERTICAL DATUM OF 1929

SOURCE:
SAVANNAH, GARDEN CITY
BURROUGHS & ISLE OF HOPE QUADS

WATER STUDY WELLS WITHIN A 2 MILE RADIUS

FIGURE 4A



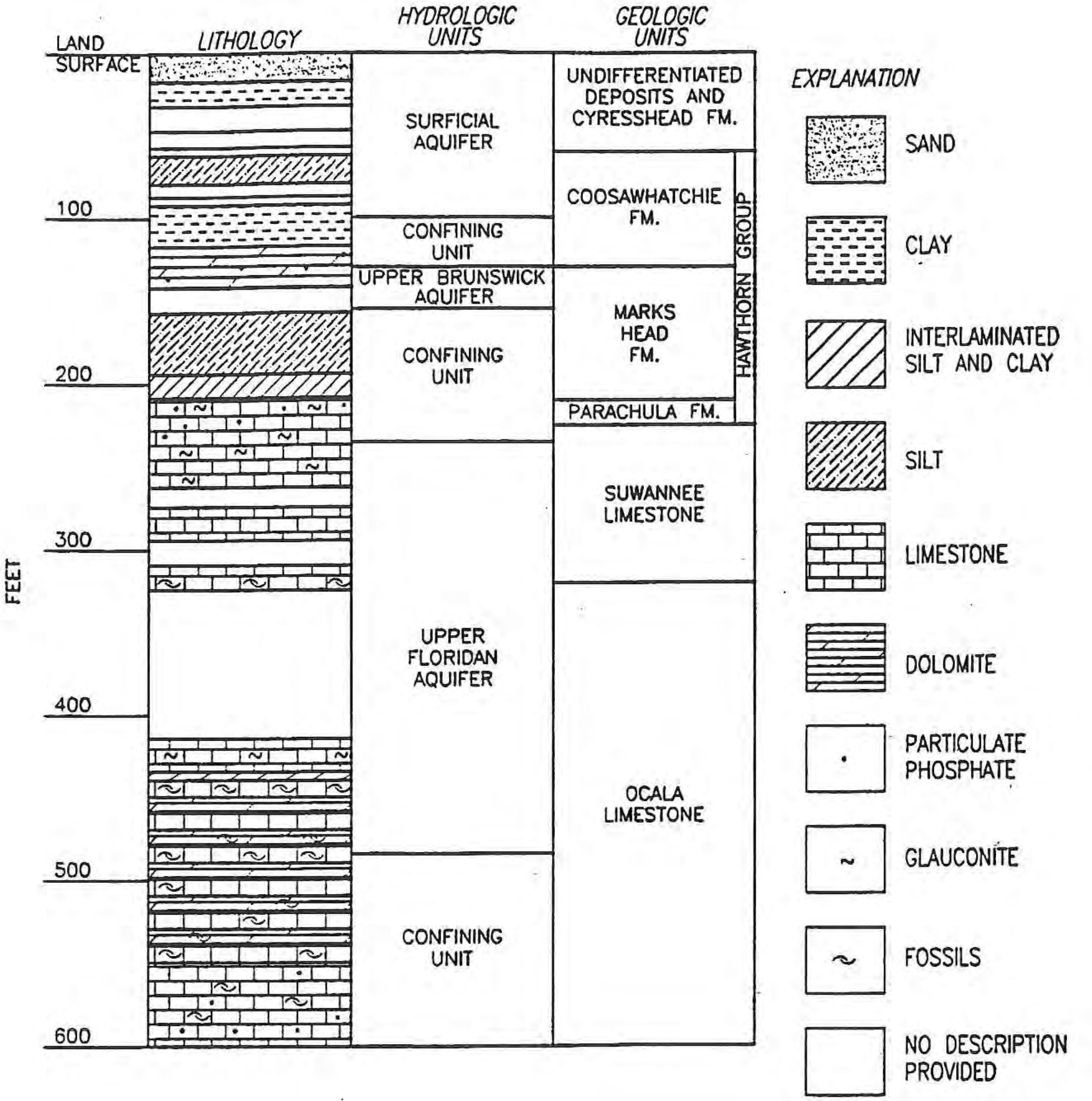
SCALE 1:24 000

CONTOUR INTERVAL 1.5 METERS, NATIONAL GEODETIC VERTICAL DATUM OF 1929

SOURCE:
SAVANNAH, GARDEN CITY
BURROUGHS & ISLE OF HOPE QUADS

WATER STUDY WELLS
WITHIN A 2 MILE RADIUS

FIGURE 4B



METCALF & EDDY

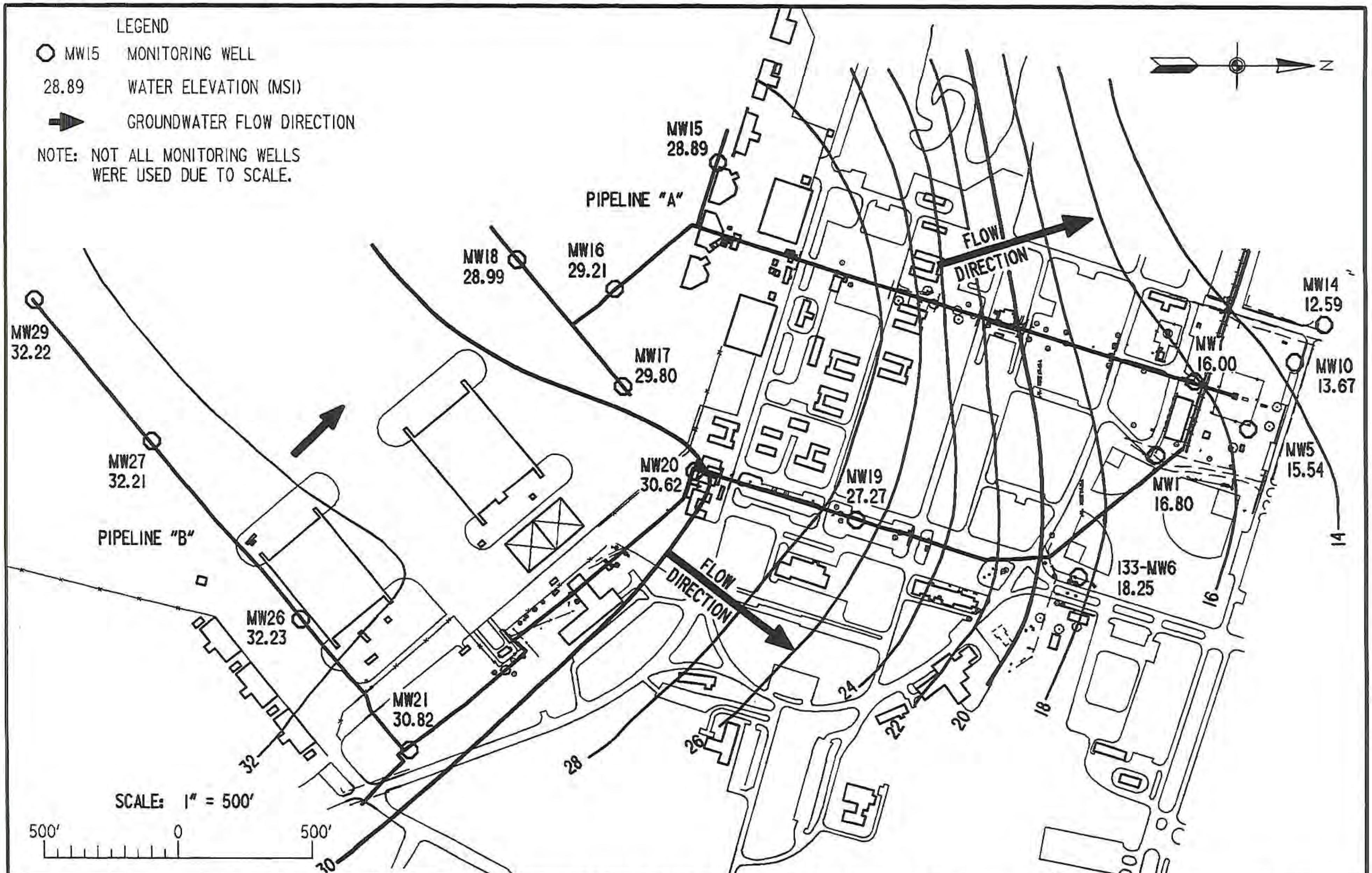
GENERALIZED HYDROGEOLOGIC
STRATIGRAPHIC COLUMN

HUNTER ARMY AIRFIELD — SAVANNAH, GA

FROM AT & E, 1992

FIGURE 5

LOC. p:\proj\16602HAF\C\CHHAF007.DGN DATED: 12-29-95 BY: ROS



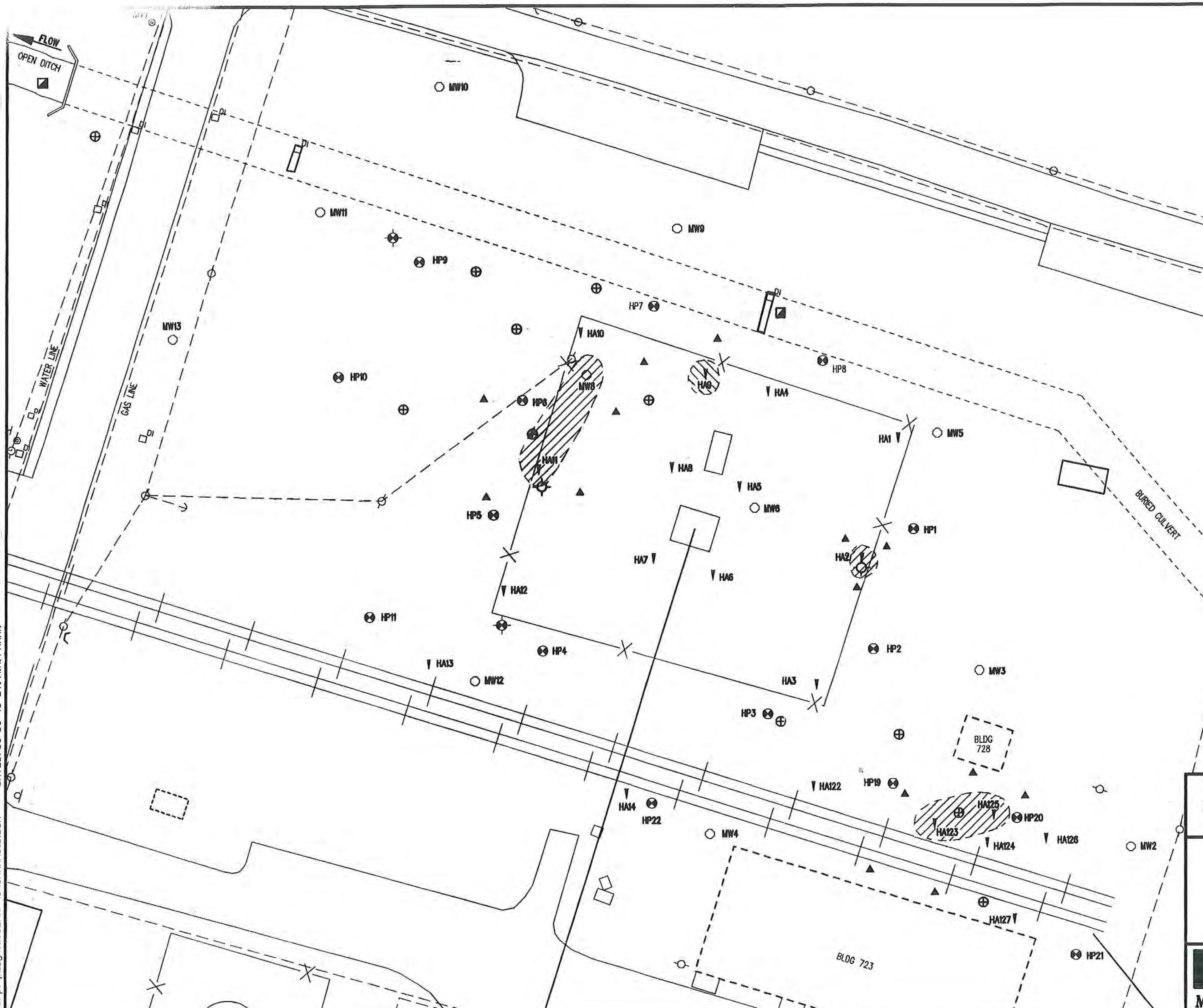
U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

BUILDING 728 AND PIPELINE POTENTIOMETRIC SURFACE MAP

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

FIGURE 6

M&E
METCALF & EDDY



N

LEGEND

- PROPOSED BORING LOCATION
- PROPOSED DEEP MONITORING WELL LOCATION
- PROPOSED MONITORING WELL LOCATION
- PROPOSED HAND AUGER LOCATION
- PROPOSED SURFACE WATER/ SEDIMENT SAMPLING LOCATION
- HP1 - EXISTING GEOPROBE LOCATION
- HA9 - EXISTING HAND AUGER LOCATION
- MW5 - EXISTING MONITORING WELL LOCATION
- AREA OF PAH CONCENTRATIONS EXCEEDING REGULATORY LIMIT
- AREA OF BENZENE CONCENTRATION EXCEEDING REGULATORY LIMIT

SCALE: 1" = 50'

50' 0 50'

FIGURE 7

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

BUILDING 728 AREA PROPOSED SAMPLING LOCATIONS

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

M&E
METCALF & EDDY

APPROVED:

SCALE: DATE:

LOC. p:\p...\16602HAF\C\CHHAH010.DGN DATED: 08-05-96 BY: M.A. FRANK

REPLACE THIS PAGE WITH SCANNED MAP!

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APPENDIX A

PRODUCT RECOVERY SYSTEM SPECIFICATIONS

indquip
ENGINEERING, INC.

HYDROSKIM

HYDROCARBON BELT SKIMMER

PROCESS HISTORY

Belt skimmers have been used in industrial applications for years to remove accumulated oil and other hydrocarbons from process tanks. The technology is based on the properties of certain types of thermoplastics to attract hydrocarbons and repel water.

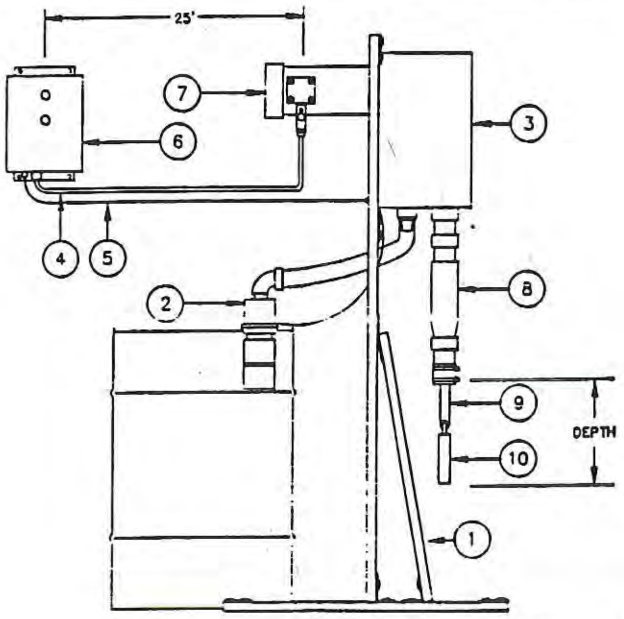
HOW IT WORKS

The process simply involves continuous circulation of an endless hydrocarbon resistant thermoplastic belt from the surface, down the well and through the hydrocarbon/water interface. A drive/recovery unit at the surface of the well is used to circulate the belt and remove the recovered hydrocarbon. The hydrocarbon then flows into a drum or tank for storage and disposal/recycling.

APPLICATION

The HYDROSKIM can be used in 2-inch or larger diameter wells. The process can be combined with groundwater depression or soil venting to enhance the recovery rates in low yield wells. Other models are available for applications such as open tanks, lagoons, etc.

TYPICAL INSTALLATION OF THE HYDROSKIM BELT SKIMMER



1 - 60" High Stand with 30" x 30" Base
2 - Drum Full Float and Drain Assembly
3 - Drive Enclosure
4 - Motor Lead, 25'
5 - Intrinsically Safe Float Lead, 25'
6 - Control Enclosure
7 - Class I, Div. 1, Group D Gear Motor
8 - Well Head Expansion Coupling
9 - Belt: Length by Application
10 - Tension Idler

10767 INDIAN HEAD IND. BLVD. - ST. LOUIS, MO. 63132 - PHONE: 314-428-0700

APPENDIX B

GEOPHYSICAL DATA

GEOPHYSICAL SURVEYS

HUNTER ARMY AIR FIELD, PIPELINES A & B

SAVANNAH, GEORGIA

Prepared for:

METCALF & EDDY

September 1995

Prepared by:

Applied Engineering & Science, Inc.
Atlanta, Georgia

TABLE OF CONTENTS

I. INTRODUCTION

Hunter Army Airfield (Hunter AAF), located on the southwest side of Savannah, Georgia, has been used by the military (either Army or Air Force) since 1940. Hunter AAF covers an area of approximately 8½ square miles.

The specific location of this geophysical investigation is an area of the base used in the past for fueling of aircraft. Fuel for the aircraft was stored in two underground storage tank (UST) farms located approximately 2,500 feet and 1,250 feet from fueling stations located on the concrete tarmac adjacent to the airfield runways (site location map, Plate 1). Underground pipelines carried fuel from the tanks to the fueling areas. Pipeline A extends from the former Northern Battery of USTs southwest approximately 2,100 feet to the tarmac. At this point, maps show the pipeline splitting in a "Y" and extending to former fueling stations on the tarmac. One branch (referred to in this report as the eastern branch of Pipeline A) extends approximately 650 feet southeast to a "T" intersection. The final section of this branch extends approximately 900 feet in a northeast-southwest direction. The second branch of the "Y" (referred to as the western branch of Pipeline A) extends approximately 500 feet west to a "T" intersection, with the final section extending approximately 900 feet in a northwest-southeast direction. Records indicate that Pipeline A is 12 inches in diameter and constructed of steel.

Pipeline B also originates at the former Northern Battery of USTs and extends south and east approximately 3,600 feet to the Eastern Battery of USTs. From the Eastern Battery, Pipeline B

To accomplish the goal of locating the pipeline, AES used electromagnetic (EM) ground conductivity and ground-penetrating radar (GPR) equipment in the area of the pipelines. The scope of work involved locating approximately 10,750 total feet of pipeline. Shallow EM surveys measure ground conductivity and can be used to locate buried metallic objects, such as the steel pipelines at Hunter AAF, because of the contrast in electrical properties with surrounding geologic materials. Shallow EM surveys are relatively easy, fast and inexpensive to complete. However, this type of EM equipment tends to be sensitive to surface and near-surface sources of interference such as buried materials, power lines, fences, buildings and other objects or generators of electromagnetic fields. Furthermore, resolution of the location of buried metallic objects decreases rapidly as the depth of burial increases. For these reasons, it was planned to conduct the EM survey first to locate as much of the pipelines as possible with this instrumentation. In areas where interferences were too great to accurately locate the pipelines, the GPR survey would be used.

GPR surveys operate at a higher frequency of the electromagnetic spectrum than EM surveys. Because of the operational frequency and shielding of the antennas, GPR equipment is less susceptible to sources of interference than shallow EM equipment. Depth of signal penetration and resolution are also generally greater. GPR surveys were, therefore, used at Hunter AAF to locate sections of the pipeline which could not be accurately located with the EM survey.

The influences of these sources of interference were considered in conducting the geophysical surveys to locate Pipelines A & B. In general, the EM survey was more affected than the GPR survey by these interferences. However, the interferences were not significant except in small sections of the pipelines. The influence of interferences are discussed in more detail in the results section of this report.

II. FIELD GEOPHYSICAL SURVEY

A. Equipment Description

1. EM-31

A variety of electromagnetic geophysical instruments are available to measure ground conductivity. These generally operate in the frequency range of 10^2 to 10^4 hertz and vary in antenna configuration, depth and resolution capabilities, and other features. For the Hunter AAF pipeline location survey, an EM-31 manufactured by Geonics Limited of Mississauga, Ontario Canada was used. The EM-31 operates at 9.8×10^3 hertz with an antenna separation of 3.66 meters.

The contrast in conductivity between native soil or fill material and the steel pipelines is great enough to register a substantial difference in magnetic field strengths. The instrument was operated to measure the in-phase response, which is more sensitive to buried conductors, such as the pipelines, than the quadrature-phase response.

range of depth and resolution capabilities needed to locate a variable geophysical target, i.e. the pipelines which were known to vary in diameter and depth of burial.

B. Theory of Operation

1. EM-31

Electromagnetic surveying methods utilize the response of subsurface materials to the propagation of electromagnetic fields. The primary electromagnetic field is generated by passing alternating current through a coil in the transmitter. Conductive subsurface materials respond by generating secondary electromagnetic fields that may be detected by the alternating currents they generate in receiver coils through electromagnetic induction.

The primary electromagnetic field travels from the transmitter coil to the receiver coil along two paths, the direct path above the ground surface and the indirect path through the subsurface materials. If the subsurface materials are homogeneous, the two fields will be similar, other than a reduction in field amplitude from the subsurface path. If the subsurface materials are conductive, then the primary field will induce alternating currents in the conductive material, which generate a secondary electromagnetic field that can be detected by the receiver. The primary and secondary fields differ both in amplitude and phase, which can be used to identify the location and geometry of the subsurface conductor. Because the magnetic component of the metallic objects and is also very good in distinguishing buried waste and disturbed soils from native, undisturbed materials.

GPR operates on a nearly continuous basis with the time span between the transmitted signal and detection of the return signal (the subsurface travel time of radar-frequency signals) in the nanosecond range. Propagation times for GPR signals in most common geologic materials range from approximately 4 to 11 nsec per foot. A GPR survey therefore results in a continuous profile along the survey line.

Soil conductivity and the frequency of the transmitted signal affect the depth the GPR signal can penetrate. The two most important variables are soil conductivity and the dielectric properties of the targets of interest with respect to the surrounding medium. As soil conductivity decreases, the depth that the GPR signal penetrates increases. Excluding metallic deposits, soil conductivity generally increases with increasing water content. Clays also generally have relatively high conductivities (in comparison to other geologic materials) both because of their moisture content and because of the electrical properties of clay-sized particles. Depth of penetration of a GPR system therefore decreases below the level of groundwater saturation and in clays.

The second important variable is the dielectric properties of the targets of interest relative to the surrounding medium. Generally, the greater the dielectric difference between the targets and the surrounding medium, the more effective GPR will be in distinguishing the targets. Metal is not

2. Ground-Penetrating Radar

The GPR survey of the Pipelines A & B was completed June 7 through 10, 1995. The GPR equipment was set up with all cable connections made according to manufacturer's specifications. The pulseEKKO 1000 recording panel was set up initially to transmit, receive and record a GPR signal, again according to manufacturer's specifications and using documented signal propagation rates for the types of geologic materials expected and the depth of interest. Based on the depth of valves for the pipelines, it was determined that the pipelines could be as deep as 7 to 8 feet. The survey depth of interest to locate the pipelines was the upper 13 feet of materials.

Several test profiles were then completed and the signal gains and recording time span adjusted to provide a clear record of the target of interest. Other GPR settings were adjusted to provide a satisfactory recording.

Equipment settings and calibrations as used for the survey are included on the test profiles included in Appendix A. Most of the GPR survey lines were completed with the instrumentation set for a time window of 40 nsec (corresponding to approximately 13 feet in depth). Generally, the signal gains were set for automatic gain control (AGC) with a manually set maximum of 15,000. Signals were stacked, generally 32 or 64 times. This required a relatively slow survey speed but increased resolution of the target pipelines, making identification of the target easier.

confirm the pipeline location, such as locations were the pipelines change direction or branch, or where other geophysical targets required closer spacing to distinguish the fuel pipelines. In addition to sections of the pipelines not located by EM-31, however, the entire length of Pipelines A & B was located at less frequent intervals as a quality control check on the EM-31 survey. The net result was that both pipelines were located with both the EM-31 and GPR surveys.

As with the EM-31 survey, because the purpose of the GPR survey was to locate the pipelines in the field the GPR data were generally not recorded. However, several GPR profiles were recorded in order to have a record of the instrument calibrations used and the response of the instrument to the two pipelines.

III. SURVEY RESULTS

A. Pipeline A

Pipeline A was located using both the EM-31 and GPR geophysical surveys. In general, there were no problems in tracing the pipeline with the EM-31. Exceptions were short sections of the pipeline near buildings, fences and parked vehicles, a 100-foot section of the pipeline immediately north of the hangers adjacent to the airfield, and the western "T" branch of the pipeline on the tarmac. The sections of pipeline with building, fence and vehicle interference were readily located with the GPR survey. The section of pipeline north of the hangers was covered with concrete containing steel bar reinforcement. This prevented the EM-31 from locating Pipeline A, but the pipeline in this area could also be located using the GPR survey.

The western "T" branch of Pipeline A could not be located with either the EM-31 or GPR. Multiple geophysical test lines were conducted covering not just the location of the western "T" branch as shown on base maps, but this entire section of the tarmac in case the map is incorrect in depicting the location of the pipeline in this area (Plate 1). By this point in the geophysical surveying effort, the GPR parameters for clearly locating Pipeline A had been well established. However, in the possibility that the pipeline on this branch is significantly different than the rest of Pipeline A as a geophysical target (i.e. different diameter, different depth of burial, and/or different material of construction) multiple tests were conducted with the GPR in an attempt to locate a target different than the rest of the pipeline. These included different antenna frequencies

In general, the mapped location of Pipeline A was accurate. In addition to the discrepancies discussed above, the northeast-southwest section of the eastern "T" branch of Pipeline A was found to be slightly shorter (75 to 100 feet on each end) than shown on site maps.

Five GPR profiles of Pipeline A were recorded and these profiles are included in Appendix A of this report as Figures 1 through 5. The first profile (Figure 1, Huntab 1) was recorded on the northwest-southeast section of the eastern "T" branch of Pipeline A (Plate 1). This profile (facing southeast) shows the full pipe GPR signature with the typical metallic-object GPR signal response.

The second profile (Figure 2, Huntab 2) was recorded on the northeast-southwest section of the eastern "T" branch of Pipeline A. The pipeline signal is at the far right of this southwest-facing profile. The signal is truncated because the line was stopped just past the signal peak in order to accurately mark the location of the pipeline in the field.

The third profile (Figure 3, Huntab 4) was a semicircular survey taken at the "Y" intersection of Pipeline A in an effort to locate the western "T" branch of the pipeline. From left to right, the first pipe signal is the eastern "T" branch of Pipeline A. The second pipe signal (approximately two-thirds of the profile distance from left to right) is the unidentified signal which was traced northwest for a distance of 300 feet parallel to the hanger buildings. The end of this profile shows the initial signal limb of the main "Y" branch of Pipeline A as the GPR instrument circled to intersect this part of the pipeline.

deviation is approximately at the mid-point of the northwest-southeast section of the pipe as it approaches the Eastern UST Battery (Plate 1, near the profile marked "Huntab 6"). Instead of being straight in this area as the site map shows, the pipeline actually makes a slight offset to miss a small building at the edge of the tarmac. The correct location is as marked on Plate 1. The third deviation from the mapped location is on the final northeast-southwest section of the pipeline on the tarmac. This section of the pipeline was found to be approximately 200 feet shorter than mapped.

Two GPR survey profiles of Pipeline B were recorded and are included in Appendix A of this report. The first profile, labeled Huntab 6 (Figure 6), was recorded in the area of the pipeline just discussed which deviates from the mapped location. Pipeline B is located approximately one-fifth of the distance from left to right on this profile, which faces northwest. A second target on this profile, located just left of center and shallower than Pipeline B, was investigated and found to be isolated. It is apparently a single, small, shallowly buried metallic object not related to the fuel pipeline.

The second recorded GPR profile (Figure 7, Huntab 7) recorded on Pipeline B was also located on the section of the pipeline near the Eastern UST Battery. On this profile, which faces northwest, Pipeline B is seen at the far right.

APPENDIX A

GPR Survey Profiles

Pipelines A & B

Figure 1. Huntab1

```
pulseEKKO HEADER PARAMETERS
     FILE   = c:\ekko\hab11
     JOB#   = 5402A
     TITLE  = Hunter Army Air Base
     TITLE  = Pipeline A
     DATE   = 08/06/95
     NUMBER OF TRACES      = 93
     NUMBER OF PTS/TRC     = 128
     TIMEZERO AT POINT     = 25
     TOTAL TIME WINDOW     = 90
     STARTING POSITION     = 0.000
     FINAL POSITION        = 92.000
     STEP SIZE USED        = 1.000
     POSITION UNITS        = feet
     NOMINAL FREQUENCY     = 225.00
     ANTENNA SEPARATION    = 0.500
     PULSER VOLTAGE        = 200
     NUMBER OF STACKS      = 64
     SURVEY MODE           = Reflection
     SOURCE DATA FILE      = C:\EKKO\huntab1

PROCESSING SELECTED
     FILTERS:      TRACE STACKING: 1
                   POINT STACKING: 1
                   TRACE DIFFERENCING: N
     SELECTION     TIME: 0 to 40
                   TRACE: 1 to 93
     GAINS:        GAIN TYPE: AGC
                   MAX GAIN (Manual): 1500
                   WINDOW WIDTH (pulses): 1.0000

PLOT LAYOUT PARAMETERS
     TRACE SPACING AND WIDTH: 0.0500 and 0.0100
     TRACE BOTTOM AND TOP: 1.0000  and 7.0000
     MARGIN LEFT AND RIGHT: 1.0000  and 1.0000
     PAGE WIDTH: 8.0000
     BORDER SIZE: 0.000
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     SCALE BAR: Name:greyr Type:EA Expansion:0.500 Contour:0
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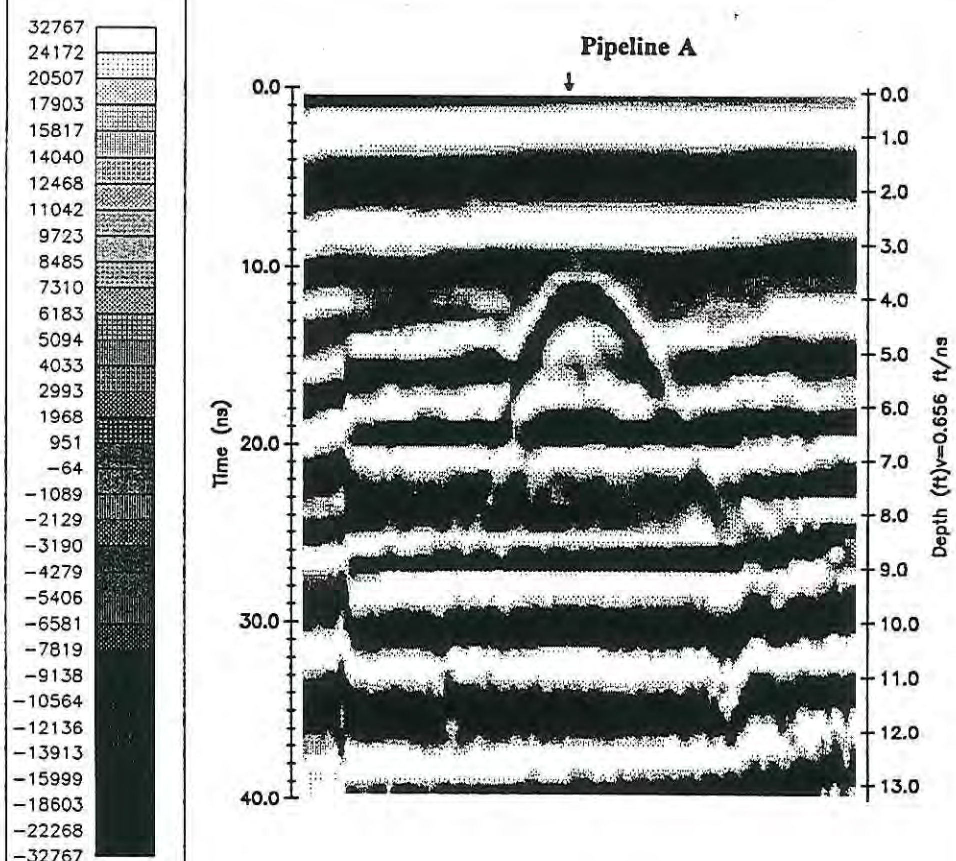

Figure 3. Huntab4

pulseEKKO HEADER PARAMETERS
FILE = c:\ekko\hob41
JOB# = 5402A
TITLE = Hunter Army Air Base
TITLE = Pipeline A
DATE = 08/06/95
NUMBER OF TRACES = 173
NUMBER OF PTS/TRC = 128
TIMEZERO AT POINT = 24
TOTAL TIME WINDOW = 90
STARTING POSITION = 0.000
FINAL POSITION = 172.000
STEP SIZE USED = 1.000
POSITION UNITS = feet
NOMINAL FREQUENCY = 225.00
ANTENNA SEPARATION = 0.500
PULSER VOLTAGE = 200
NUMBER OF STACKS = 64
SURVEY MODE = Reflection
SOURCE DATA FILE = C:\EKKO\huntab4

PROCESSING SELECTED
FILTERS: TRACE STACKING: 1
POINT STACKING: 1
TRACE DIFFERENCING: N
SELECTION TIME: 0 to 40
TRACE: 1 to 173
GAINS: GAIN TYPE: AGC
MAX GAIN (Manual): 1500
WINDOW WIDTH (pulses): 1.0000

PLOT LAYOUT PARAMETERS
TRACE SPACING AND WIDTH: 0.0500 and 0.0100
TRACE BOTTOM AND TOP: 1.0000 and 7.0000
MARGIN LEFT AND RIGHT: 1.0000 and 1.0000
PAGE WIDTH: 8.0000
BORDER SIZE: 0.000
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SCALE BAR: Name:greyr Type:EA Expansion:0.500 Contour:0

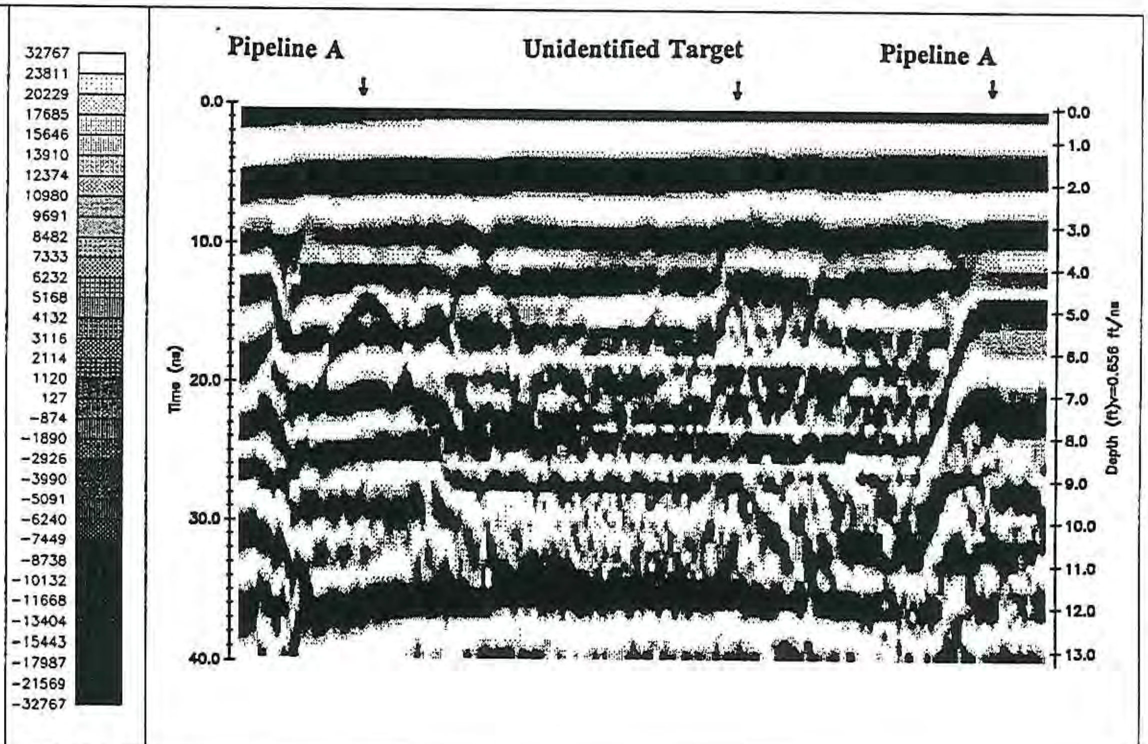

Figure 5. Huntab9

```
pulseEKKO HEADER PARAMETERS
      FILE   = c:\ekko\hab91
      JOB#   = 5402A
      TITLE  = Hunter Army Air Base
      TITLE  = Pipeline A
      DATE   = 10/06/95
      NUMBER OF TRACES       = 97
      NUMBER OF PTS/TRC      = 128
      TIMEZERO AT POINT      = 26
      TOTAL TIME WINDOW      = 90
      STARTING POSITION      = 0.000
      FINAL POSITION         = 96.000
      STEP SIZE USED         = 1.000
      POSITION UNITS         = feet
      NOMINAL FREQUENCY      = 225.00
      ANTENNA SEPARATION     = 0.500
      PULSER VOLTAGE         = 200
      NUMBER OF STACKS       = 32
      SURVEY MODE            = Reflection
      SOURCE DATA FILE     = C:\EKKO\huntab9

PROCESSING SELECTED
      FILTERS:      TRACE STACKING: 1
                    POINT STACKING: 1
                    TRACE DIFFERENCING: N
      SELECTION     TIME: 0 to 50
                    TRACE: 1 to 97
      GAINS:        GAIN TYPE: AGC
                    MAX GAIN (Manual): 1500
                    WINDOW WIDTH (pulses): 1.0000

PLOT LAYOUT PARAMETERS
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      TRACE BOTTOM AND TOP: 1.0000  and 7.0000
      MARGIN LEFT AND RIGHT: 1.0000  and 1.0000
      PAGE WIDTH: 8.0000
      BORDER SIZE: 0.000
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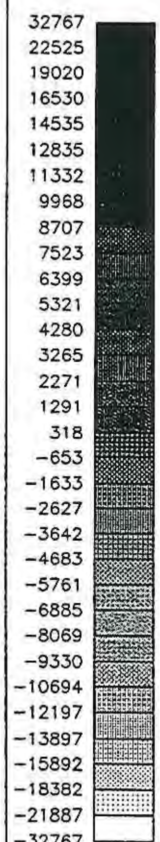

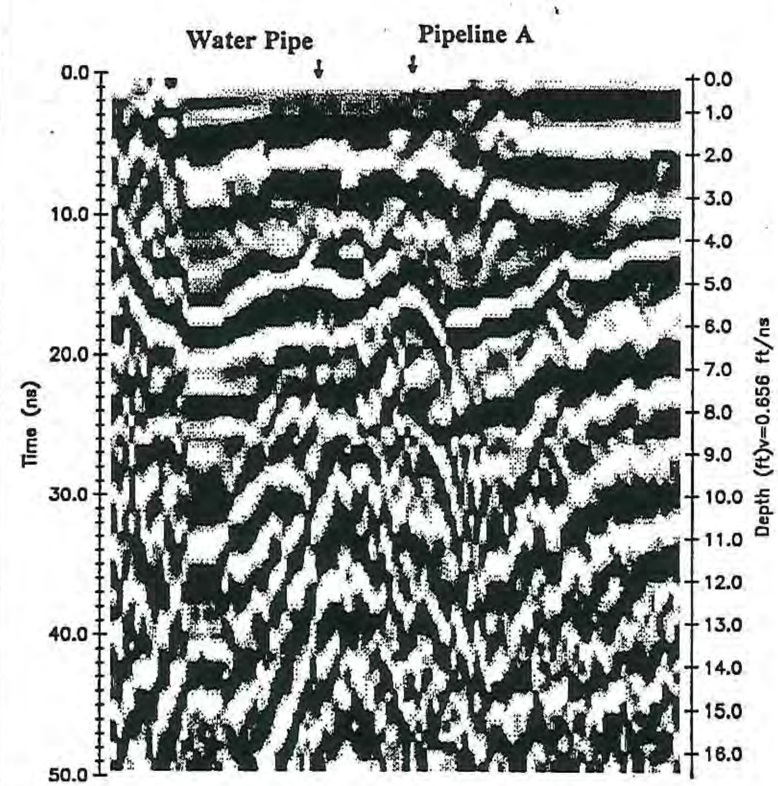

Figure 7. Huntab7

pulseEKKO HEADER PARAMETERS
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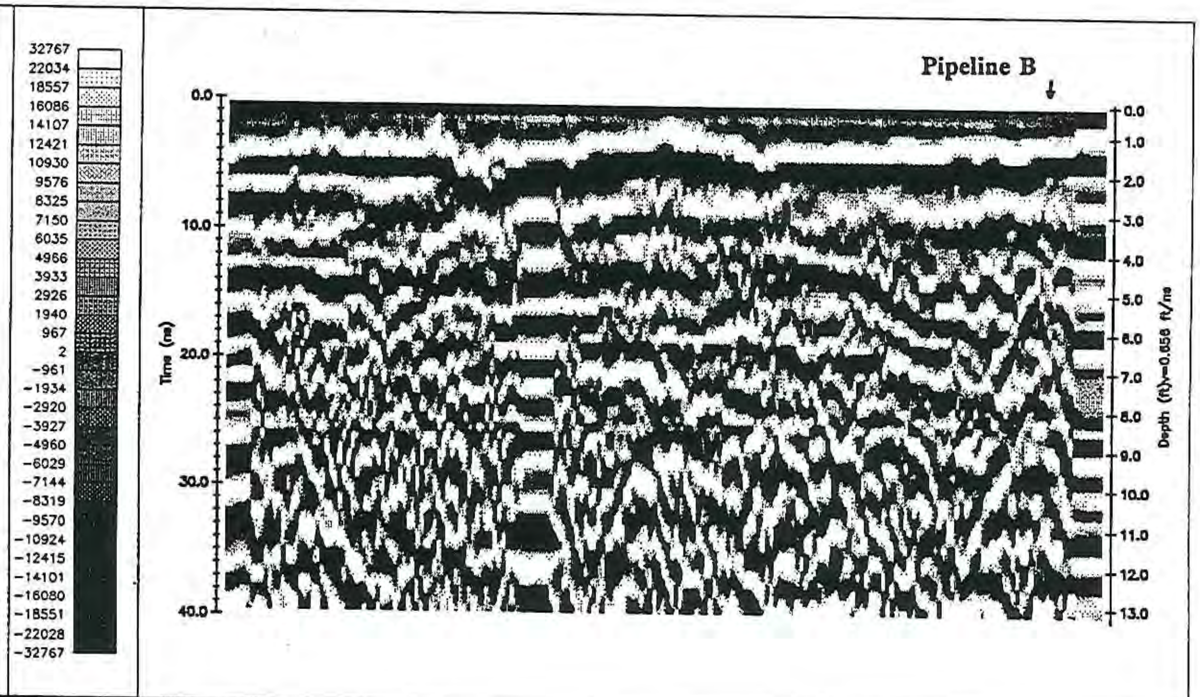
TITLE = Pipeline B
DATE = 10/06/95
NUMBER OF TRACES = 203
NUMBER OF PTS/TRC = 128
TIMEZERO AT POINT = 27
TOTAL TIME WINDOW = 90
STARTING POSITION = 0.000
FINAL POSITION = 202.000
STEP SIZE USED = 1.000
POSITION UNITS = feet
NOMINAL FREQUENCY = 225.00
ANTENNA SEPARATION = 0.500
PULSER VOLTAGE = 200
NUMBER OF STACKS = 64
SURVEY MODE = Reflection
SOURCE DATA FILE = C:\EKKO\huntab7

PROCESSING SELECTED
FILTERS: TRACE STACKING: 1
POINT STACKING: 1
TRACE DIFFERENCING: N
SELECTION TIME: 0 to 40
TRACE: 1 to 203
GAINS: GAIN TYPE: AGC
MAX GAIN (Manual): 1500
WINDOW WIDTH (pulses): 1.0000

PLOT LAYOUT PARAMETERS
TRACE SPACING AND WIDTH: 0.0500 and 0.0100
TRACE BOTTOM AND TOP: 1.0000 and 7.0000
MARGIN LEFT AND RIGHT: 1.0000 and 1.0000
PAGE WIDTH: 8.0000
BORDER SIZE: 0.000
PRINTER NAME: HP500CA
SCALE BAR: Name:greyr Type:EA Exponsion:0.500 Contour:0



REPLACE THIS PAGE WITH SCANNED MAP!

APPENDIX C

GEOTECHNICAL DATA

Professional Service Industries, Inc.

DAILY FIELD REPORT

TESTED FOR: ATTN: MR. DAVE HUMPHRIS
METCALF & EDDY, INC.
1201 PEACHTREE STREET NE
400 COLONY SQ. #1101
ATLANTA, GA 30361

PROJECT: HUNTER AIR FORCE BASE

DATE: August 24, 1995

OUR REPORT NO.: 779-50193-00001

WEATHER:

TEMPERATURE RANGE: TO:

INSPECTOR: RL

TYPE OF INSPECTION BEING PERFORMED

X SOILS
- ____ FOUNDATIONS
- ____ CONTROLLED FILL (COMPACTION)
- X LABORATORY TESTING

____ ASPHALT
- ____ BATCH PLANT
- ____ PLACEMENT (JOB SITE)

____ CONCRETE
- ____ BATCH PLANT
- ____ PLACEMENT (JOB SITE)

____ OTHER

BRIEF RESUME OF WORK ACCOMPLISHED THIS DATE:

As requested, representatives of our firm have performed 41 Grain Size Distribution, Moisture Content, and Atterberg Limits Determinations on soil samples from the above referenced project.

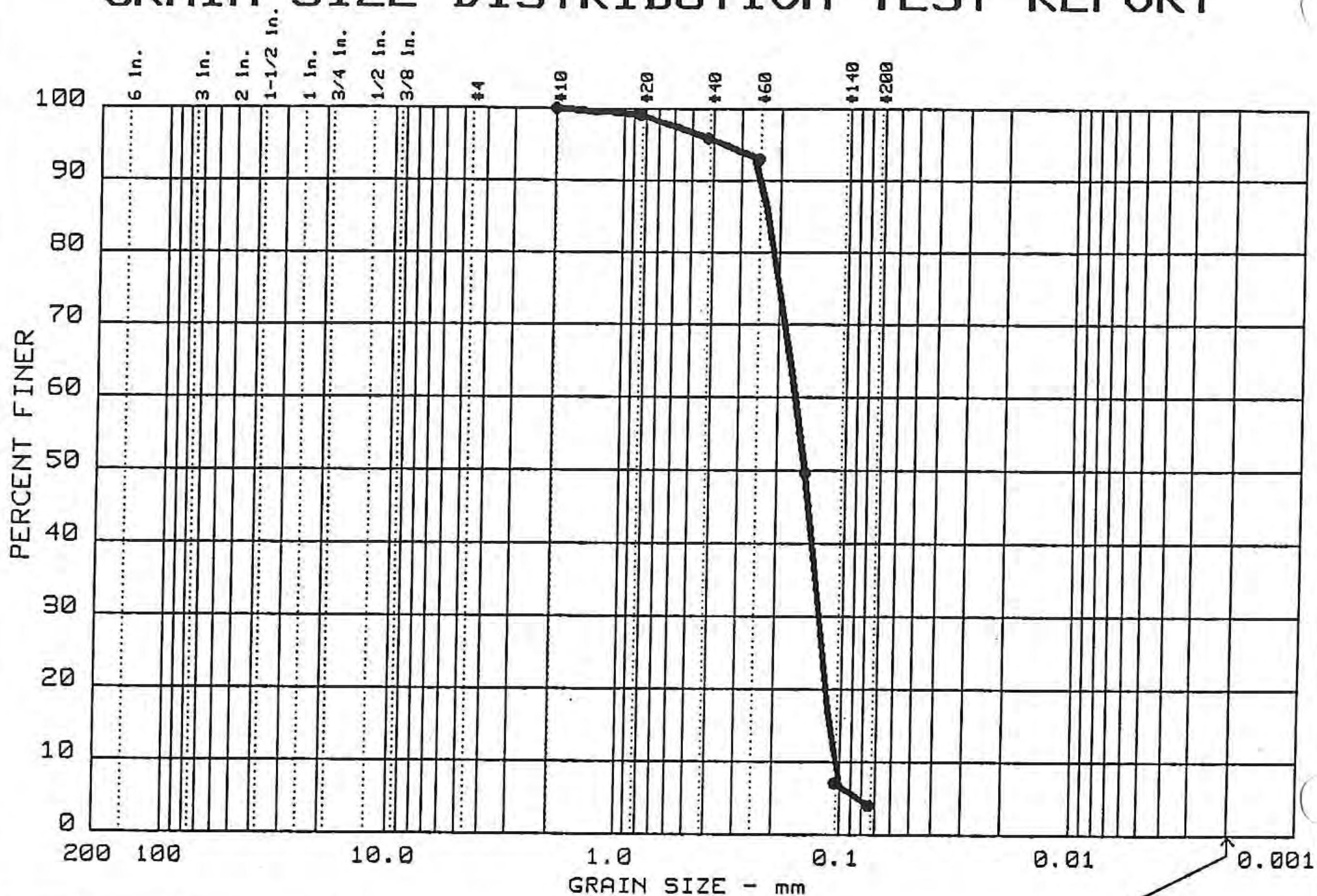
The results of our laboratory tests are attached.

Respectfully submitted,
Professional Service Industries, Inc.

JOHN R. SANSONE
PROJECT ENGINEER

5801 Benjamin Center Dr., Suite 112 • Tampa, FL 33634 • Phone: 813/886-1075 • Fax: 813/888-6514

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.0	95.9	4.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.23	0.17	0.15	0.128	0.1129	0.1084	0.90	1.5

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB1, 1'- 3'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

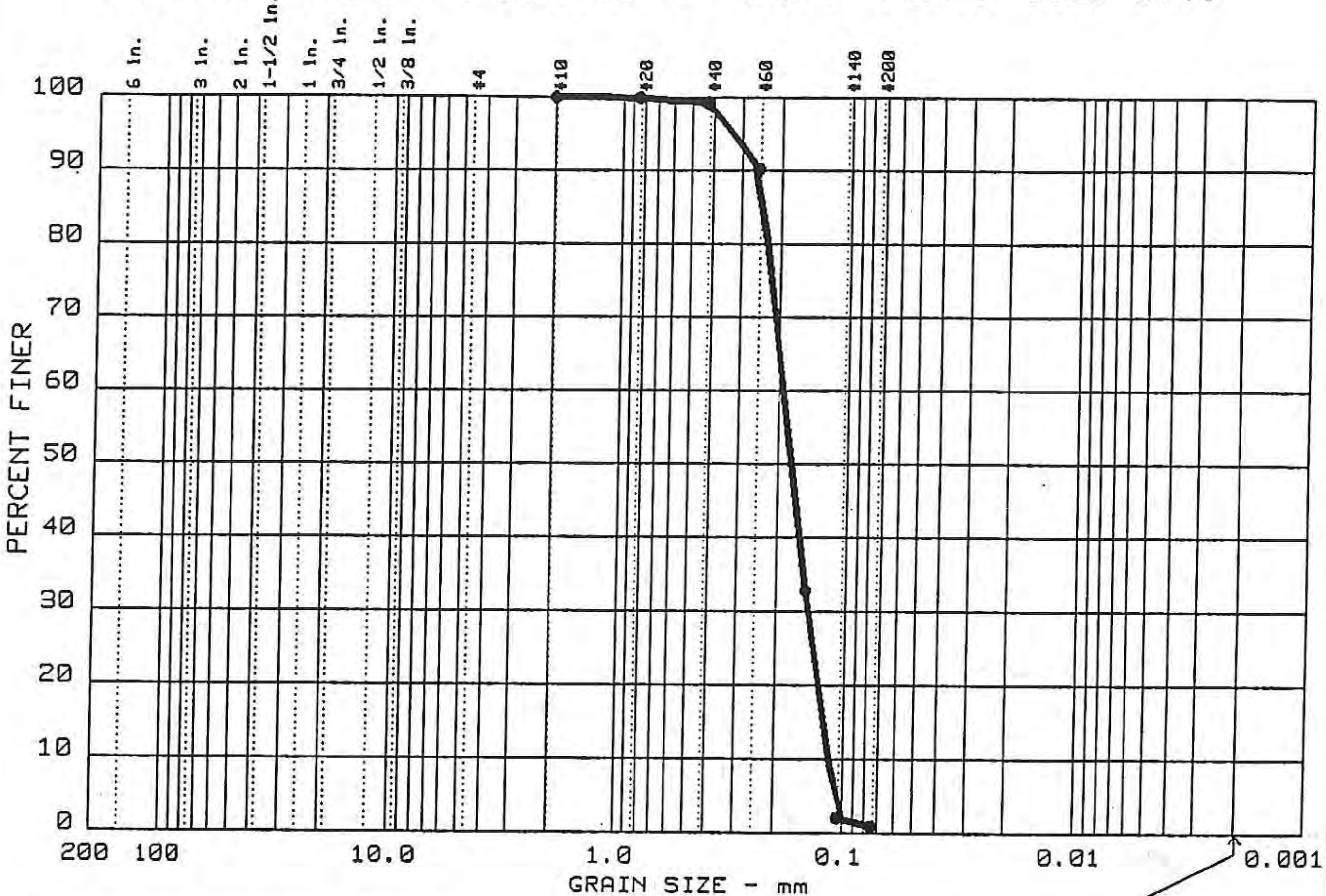
TESTED BY: A. WALSH

CHECKED BY: R. LALLE

NMC = 22.5%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	0.0	99.0	1.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.24	0.19	0.18	0.145	0.1226	0.1157	0.95	1.7

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB2, 11'- 13'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

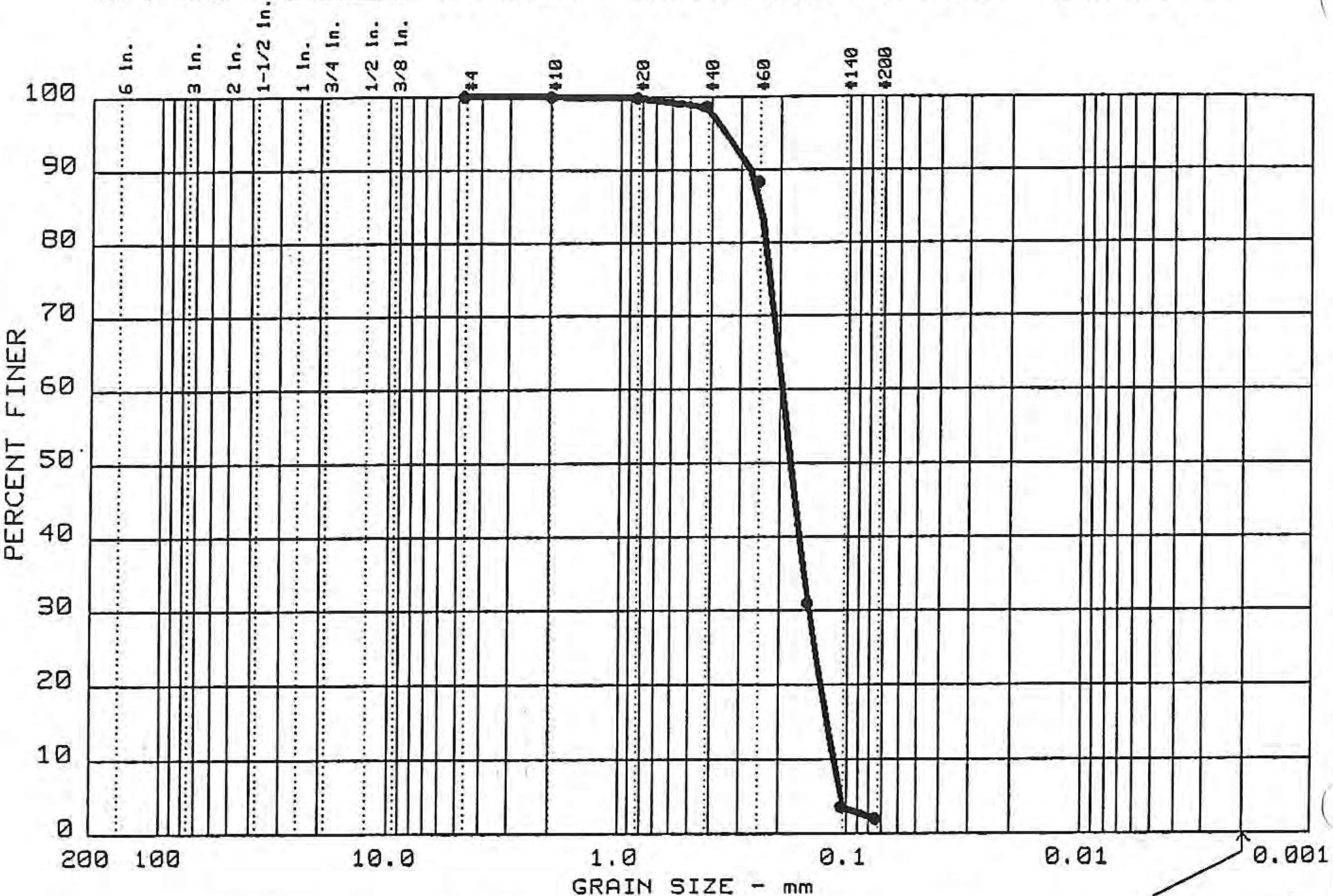
TESTED BY: A. WALSH

CHECKED BY: R. LALLE

NMC = 24.6%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	0.0	97.9	2.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.24	0.20	0.18	0.148	0.1223	0.1148	0.97	1.7

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB3, 11'- 13'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

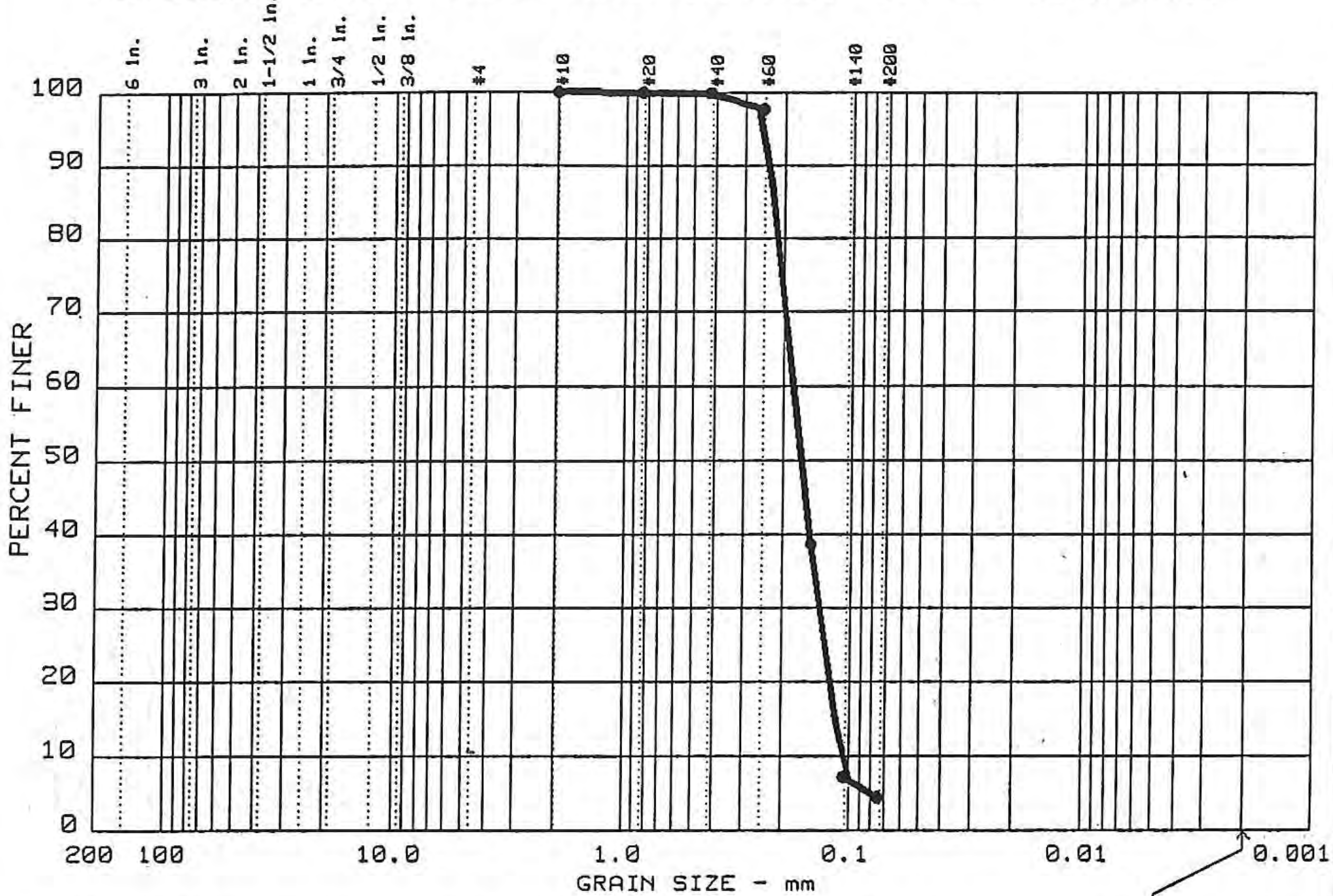
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: A. WALSH
CHECKED BY: R. LALLE

NMC = 23.5%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	0.0	95.5	4.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.18	0.17	0.136	0.1153	0.1091	0.94	1.7

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB4, 9'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

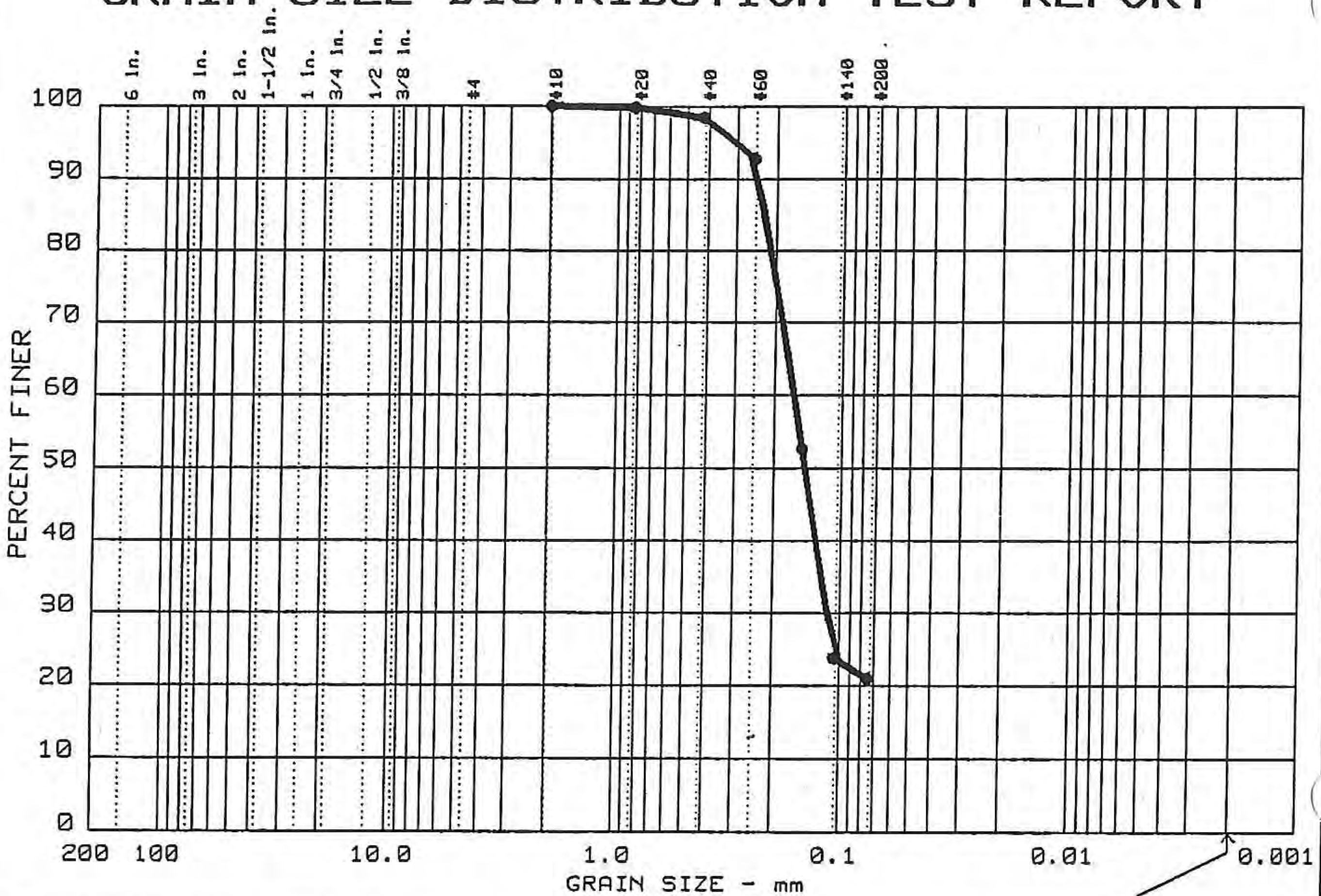
TESTED BY: A. WALSH

CHECKED BY: R. LALLE

NMC = 22.4%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	0.0	79.0	21.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.23	0.16	0.15	0.114				

MATERIAL DESCRIPTION	USCS	AASHTO
●	SM	A-2-4

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB5, 1'- 3'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

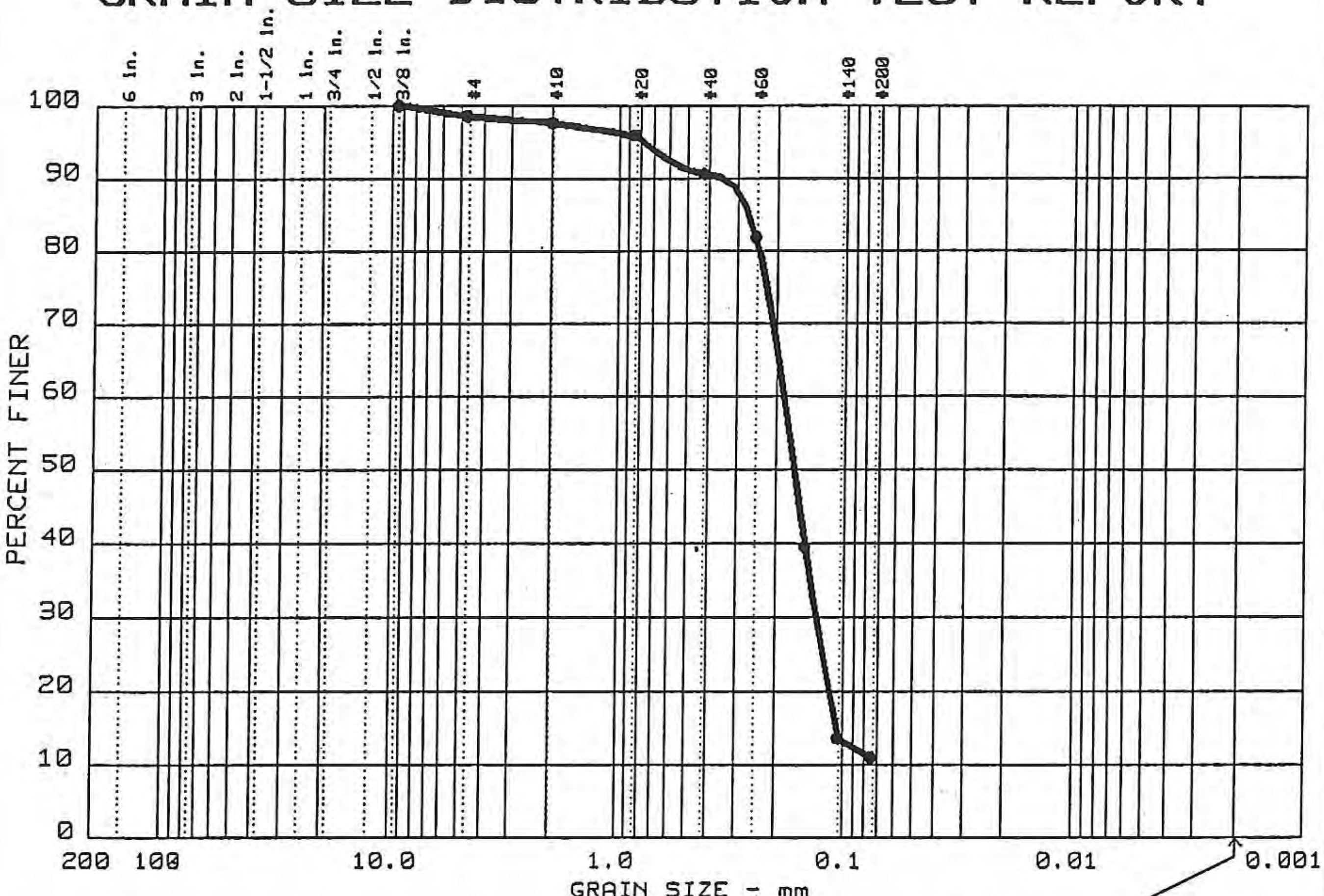
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: A. WALSH
CHECKED BY: R. LALLE

NMC = 7.5%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	18	0.0	1.4	87.5	11.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.27	0.19	0.17	0.132	0.1078			

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-2-4

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB6, 3'- 5'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

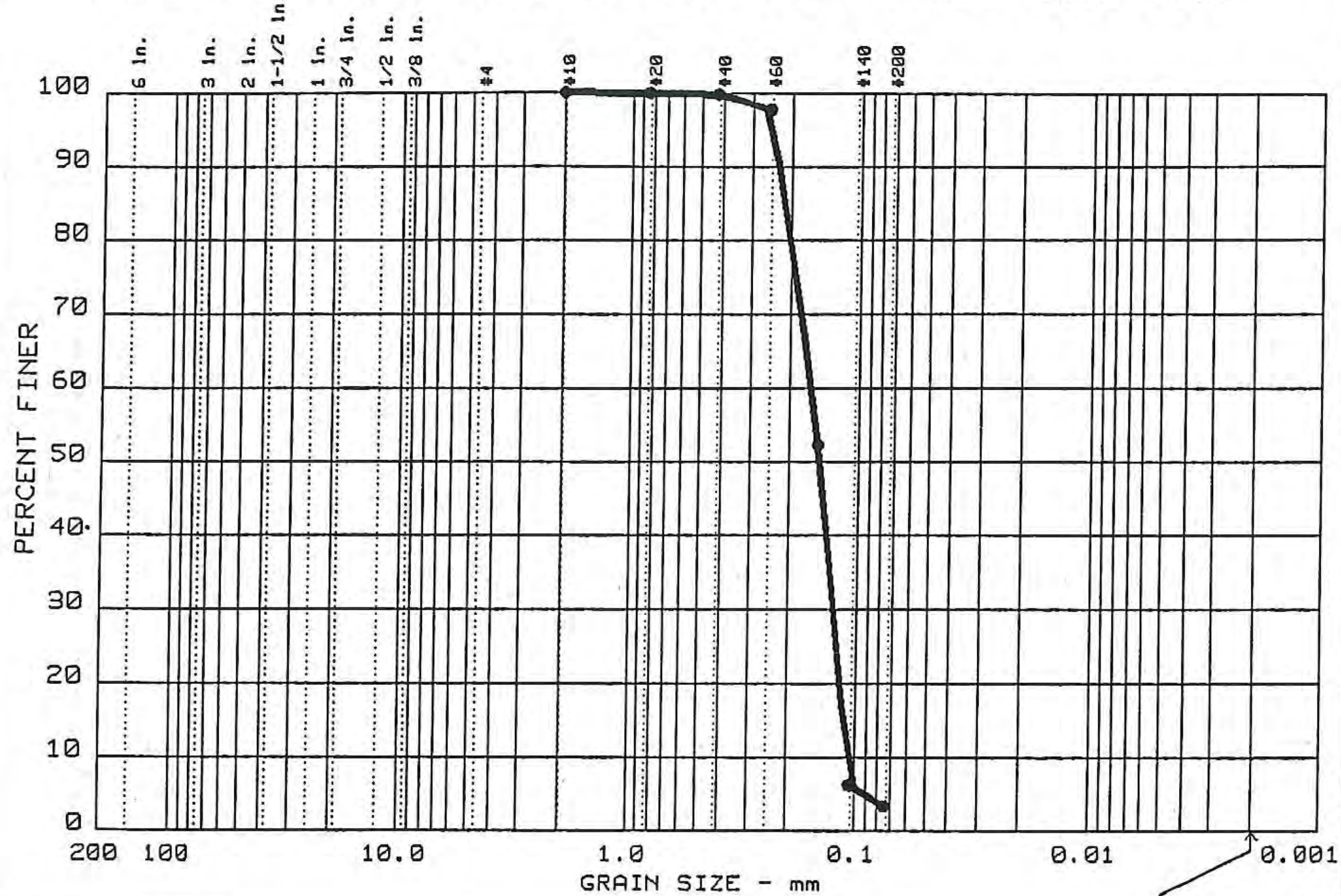
TESTED BY: A. WALSH

CHECKED BY: R. LALLE

NMC = 11.8%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	19	0.0	0.0	96.6	3.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.16	0.15	0.127	0.1131	0.1089	0.91	1.5

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB8, 11'- 13'

Date: 8-24-95

Remarks:
TESTED BY: A. WALSH
CHECKED BY: R. LALLE

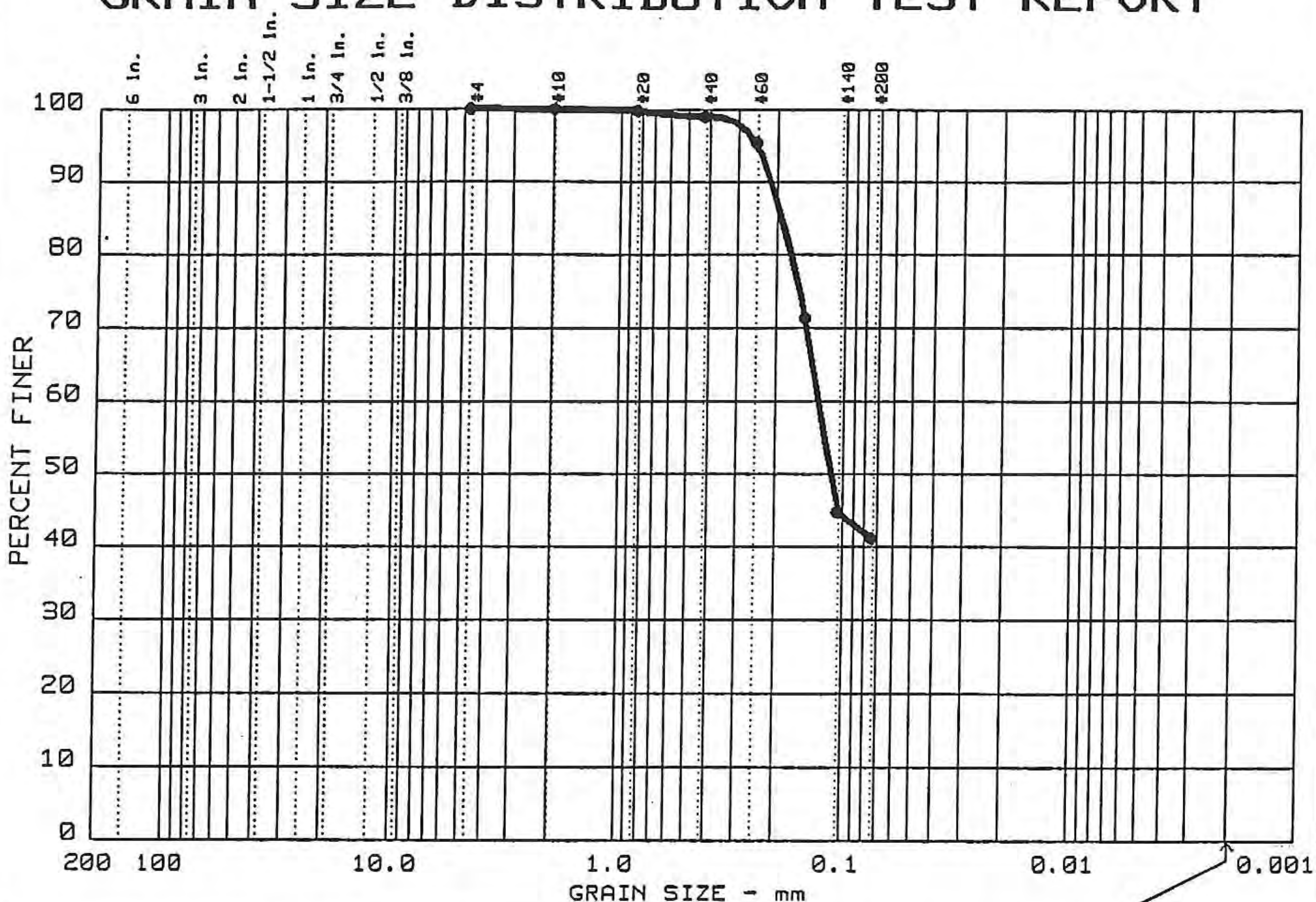
NMC = 25.3%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	20	0.0	0.0	58.8	41.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	43	24	0.19	0.13	0.11					

MATERIAL DESCRIPTION	USCS	AASHTO
●	SC	A-7-6

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB9, 3'- 5'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

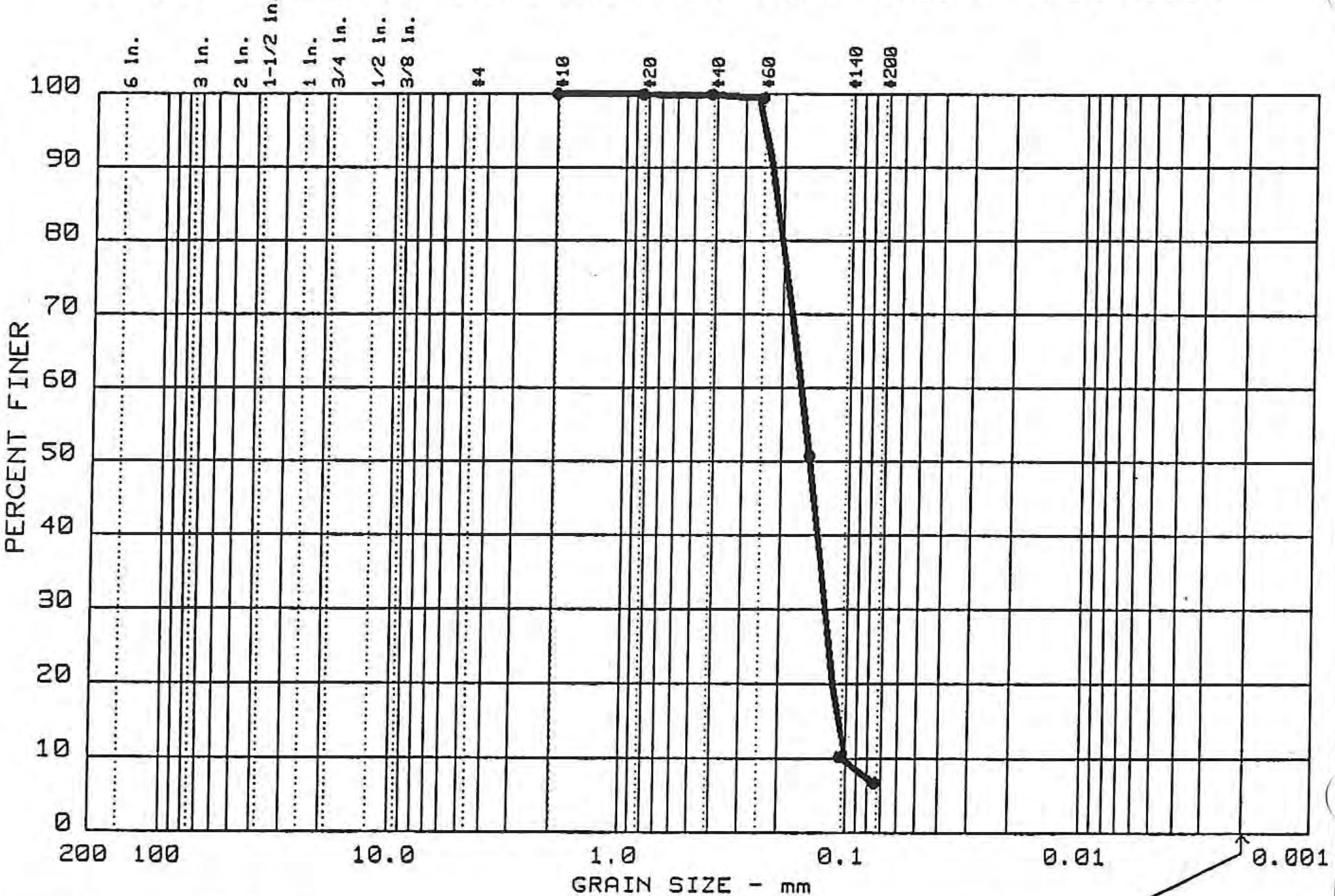
TESTED BY: A. WALSH

CHECKED BY: R. LALLE

NMC = 24.4%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.0	93.3	6.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.16	0.15	0.125	0.1103	0.1017	0.94	1.6

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB10, 9'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

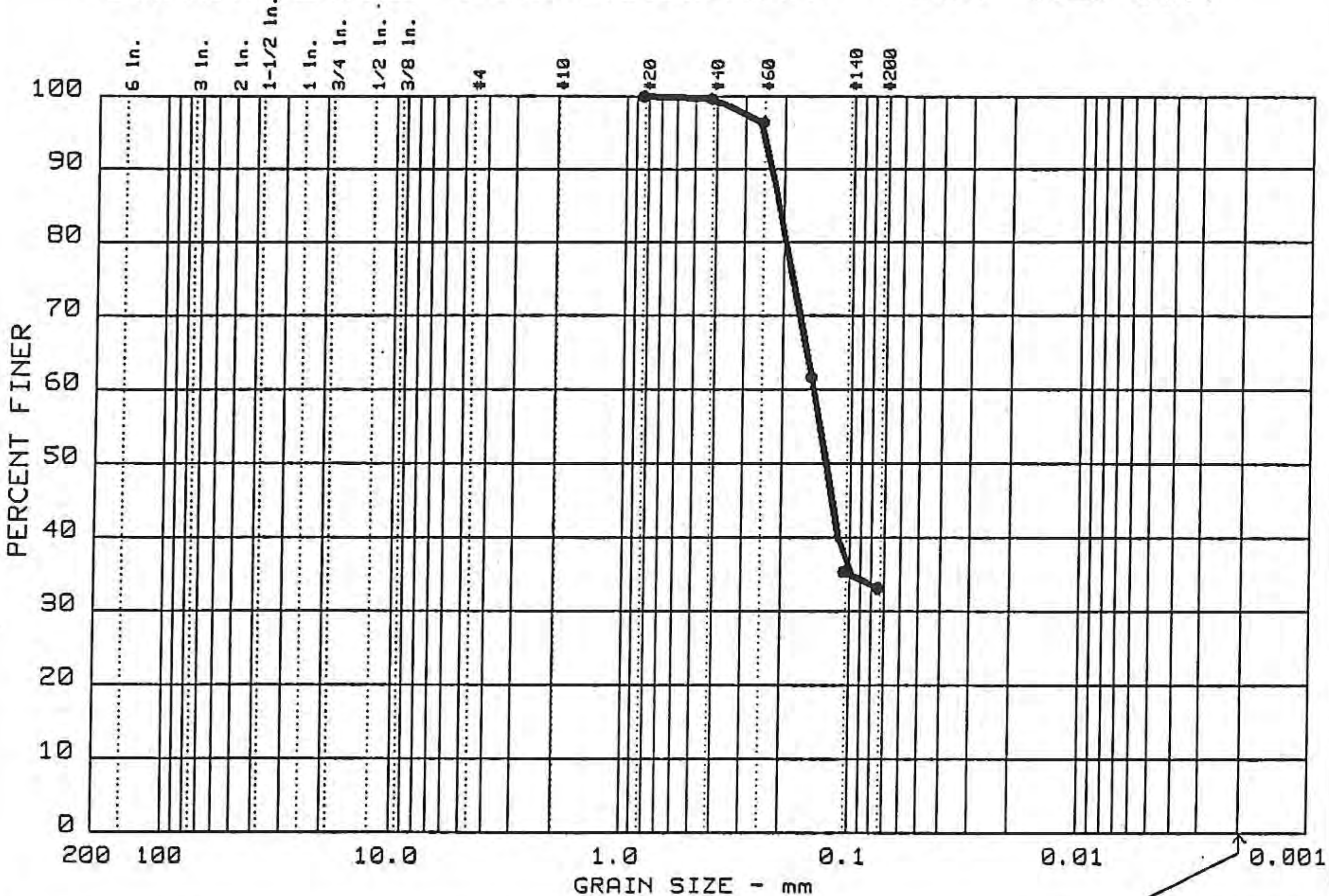
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 23.0%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	2	0.0	0.0	66.8	33.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	35	16	0.21	0.15	0.13					

MATERIAL DESCRIPTION	USCS	AASHTO
●	SC	A-2-6

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB11, 5'- 7'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

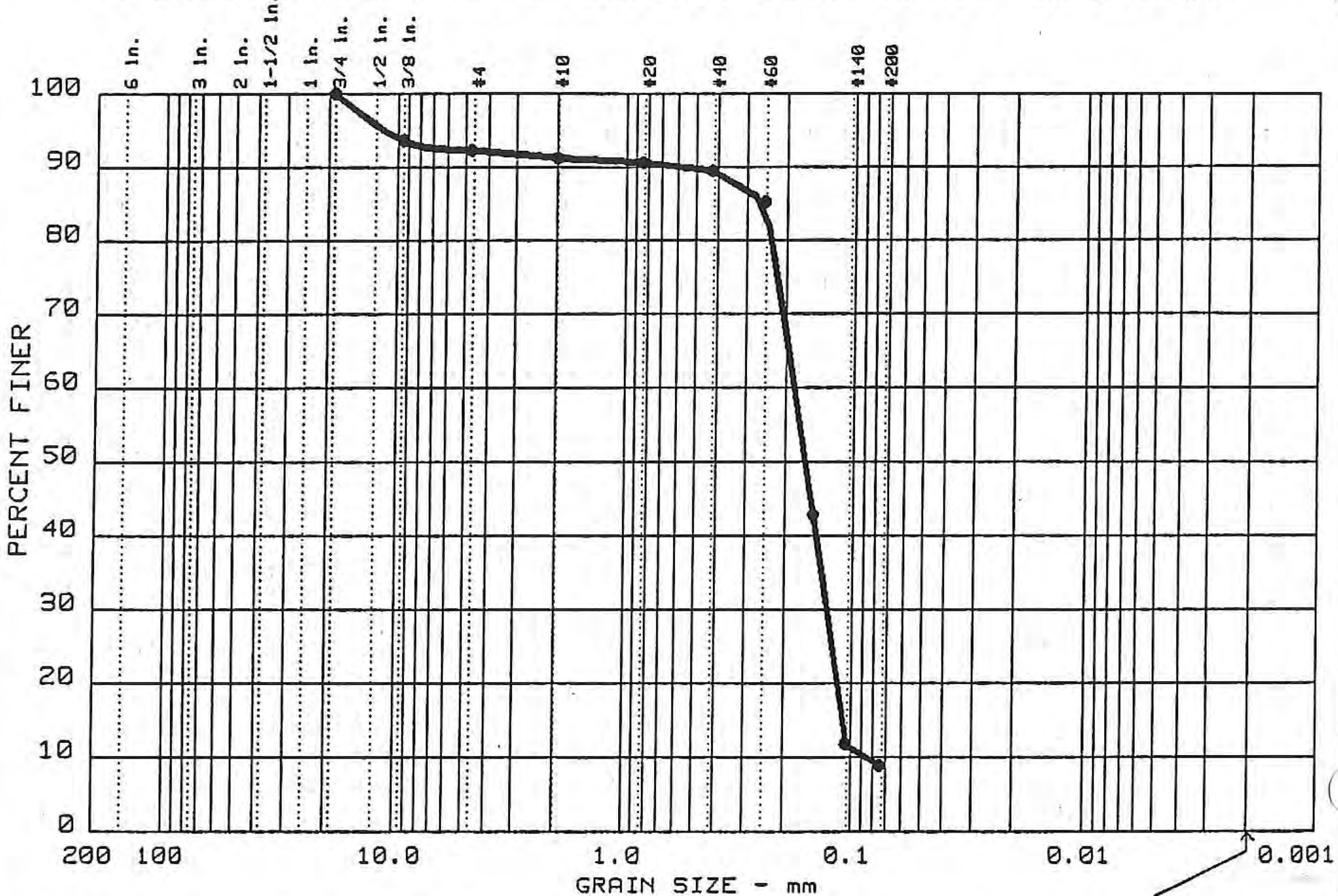
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 24.6%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	7.7	83.4	8.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.25	0.18	0.16	0.130	0.1098	0.0833	1.10	2.2

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB12, 5'- 7'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

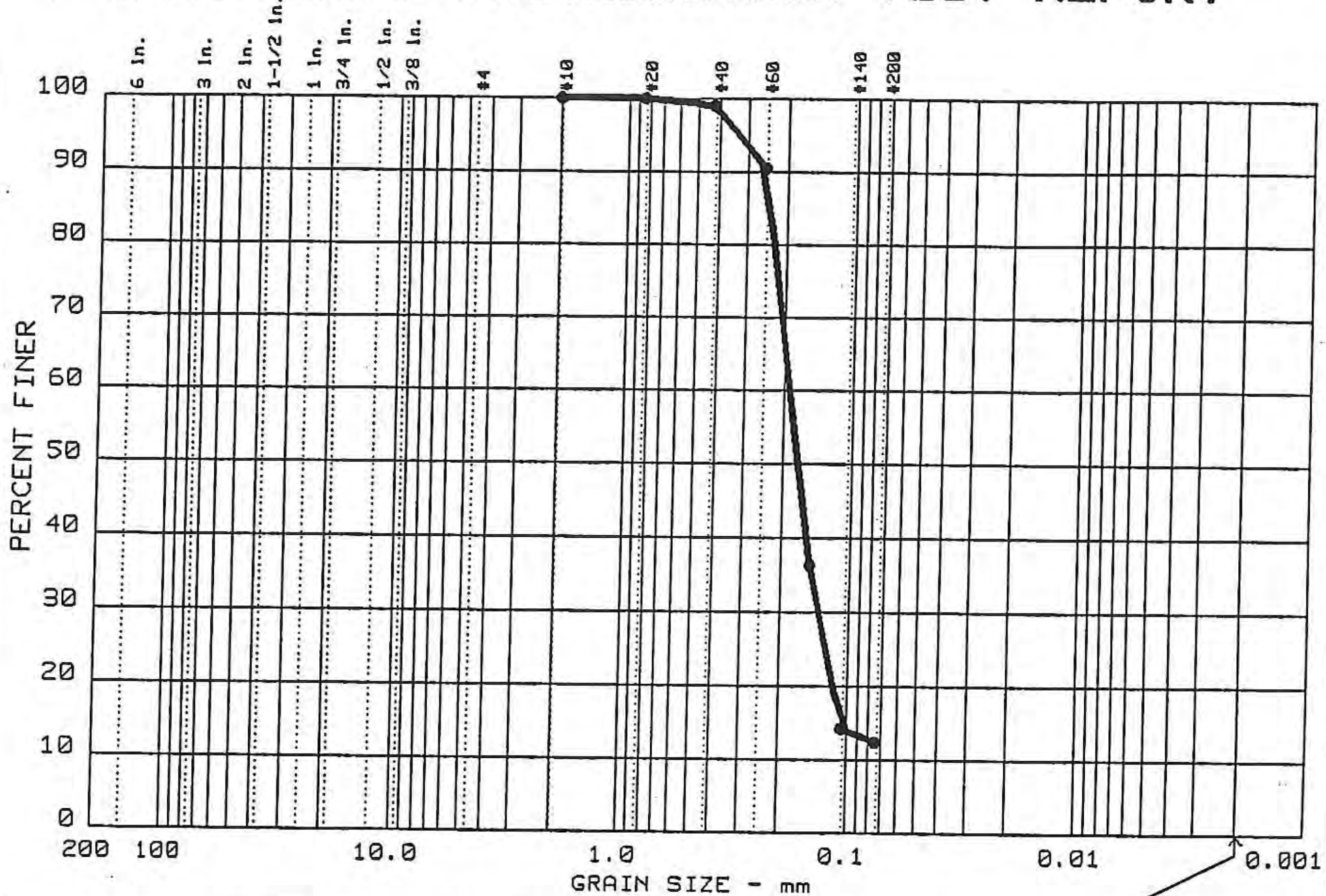
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 22.1%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	87.6	12.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.24	0.19	0.17	0.136	0.1072			

MATERIAL DESCRIPTION	USCS	AASHTO
●	SM	A-2-4

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB13, 7'- 9'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

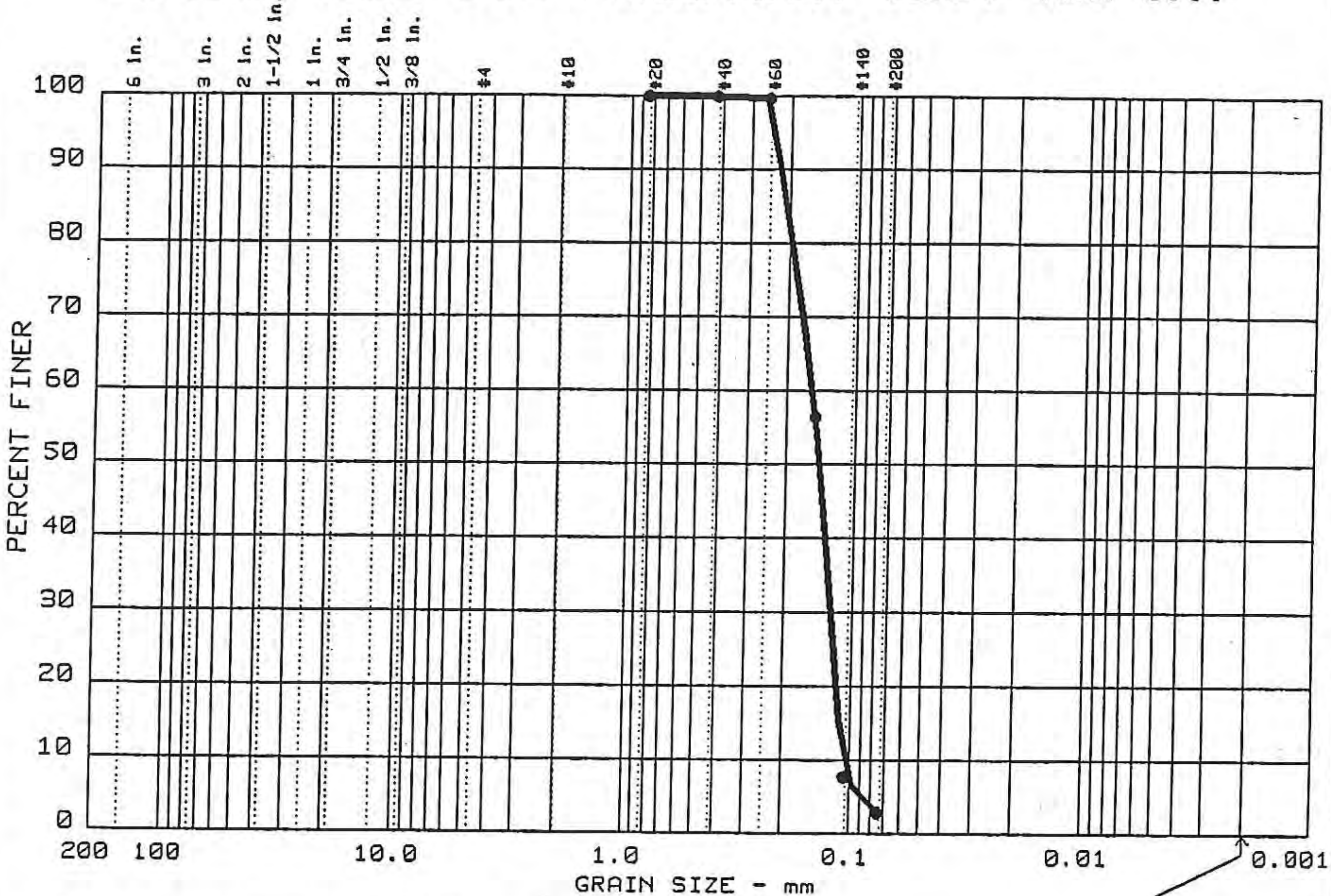
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 24.0%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.0	97.1	2.9	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.16	0.14	0.124	0.1116	0.1076	0.92	1.4

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB14, 1'- 3'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

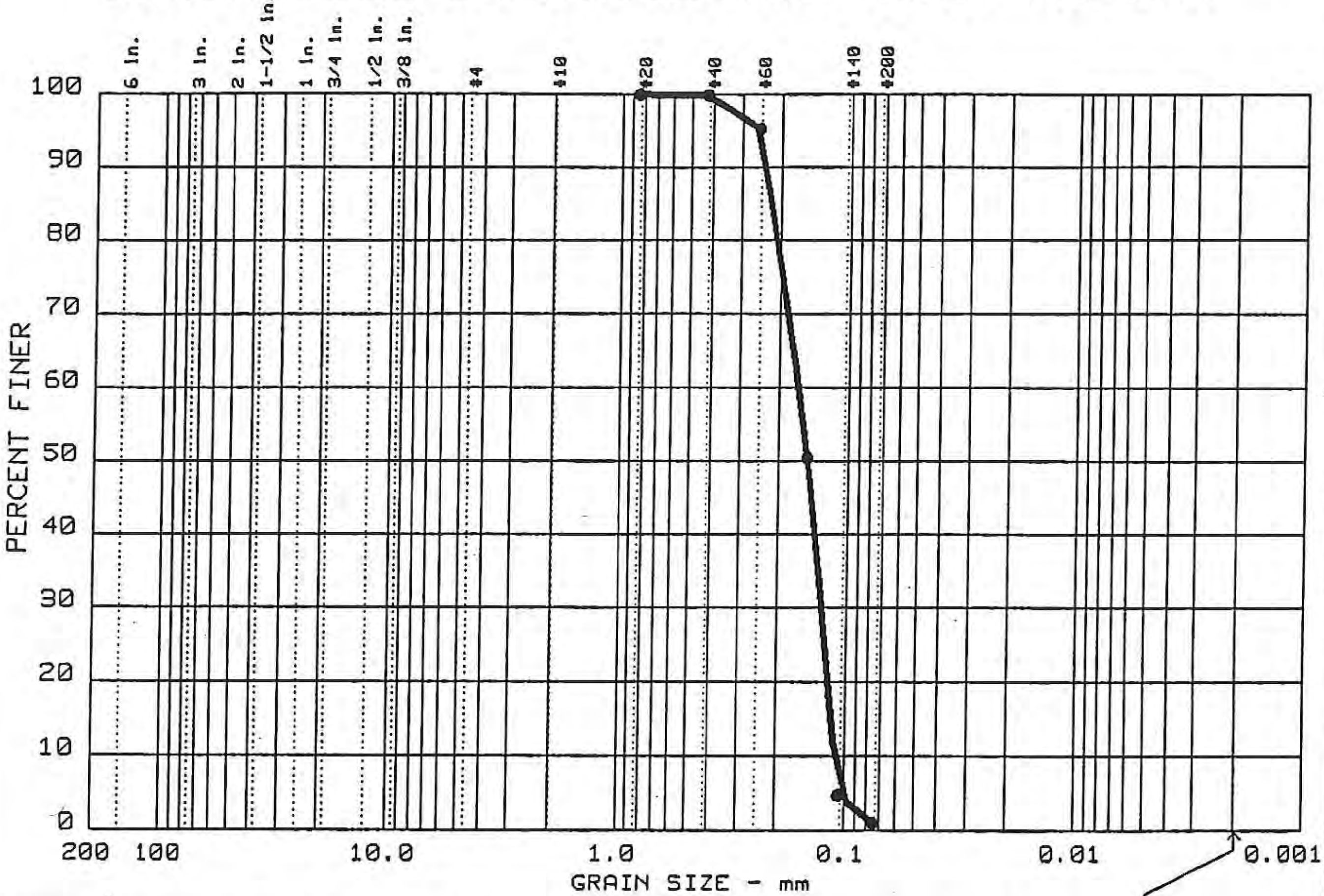
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 3.6%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 6	0.0	0.0	98.9	1.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.17	0.15	0.128	0.1144	0.1102	0.91	1.5

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB15, 7'- 9'

Date: 8-24-95

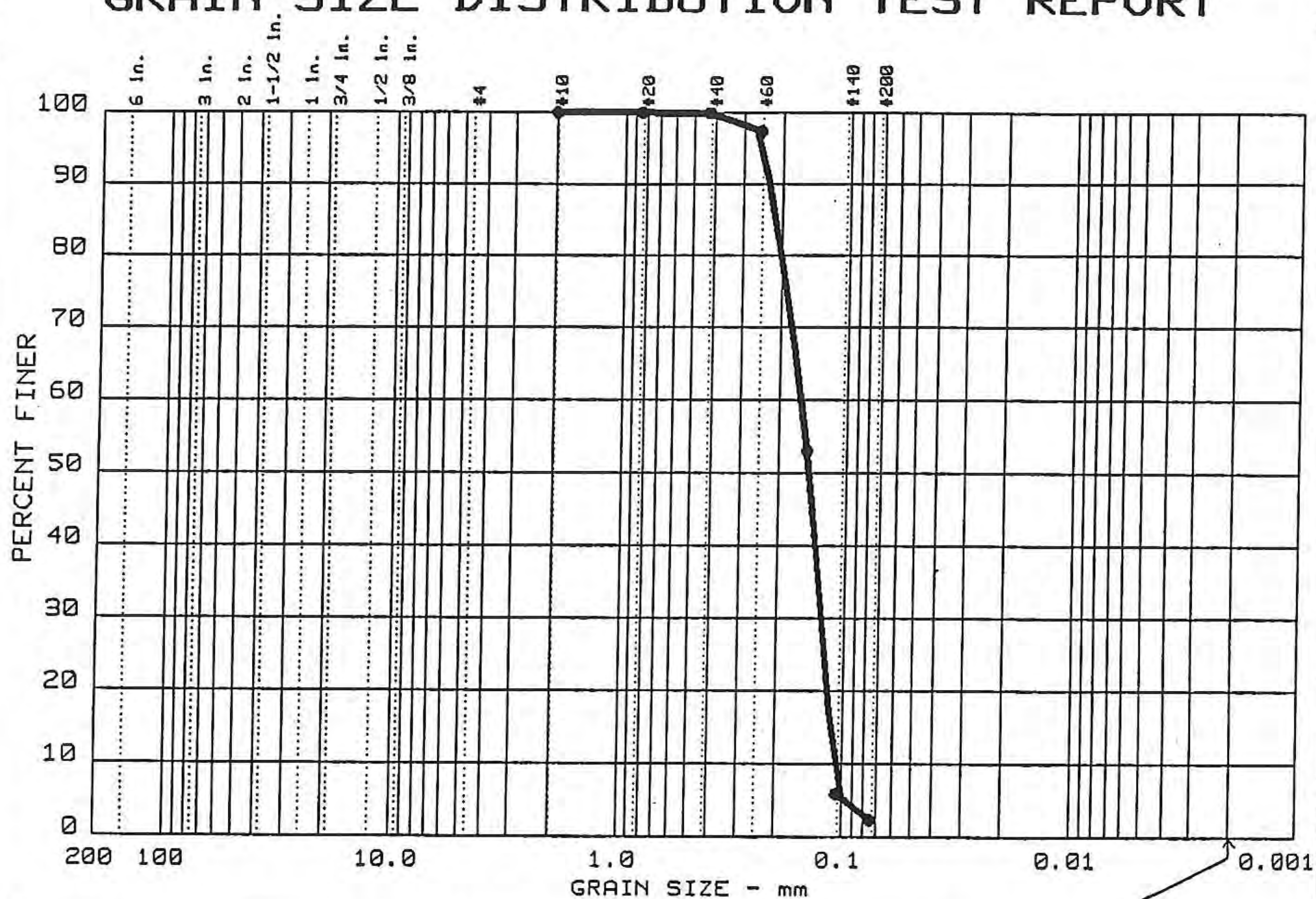
Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 24.5%

GRAIN SIZE DISTRIBUTION TEST REPORT
PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.0	97.6	2.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.16	0.15	0.126	0.1132	0.1091	0.91	1.5

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB16, 3'- 5'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

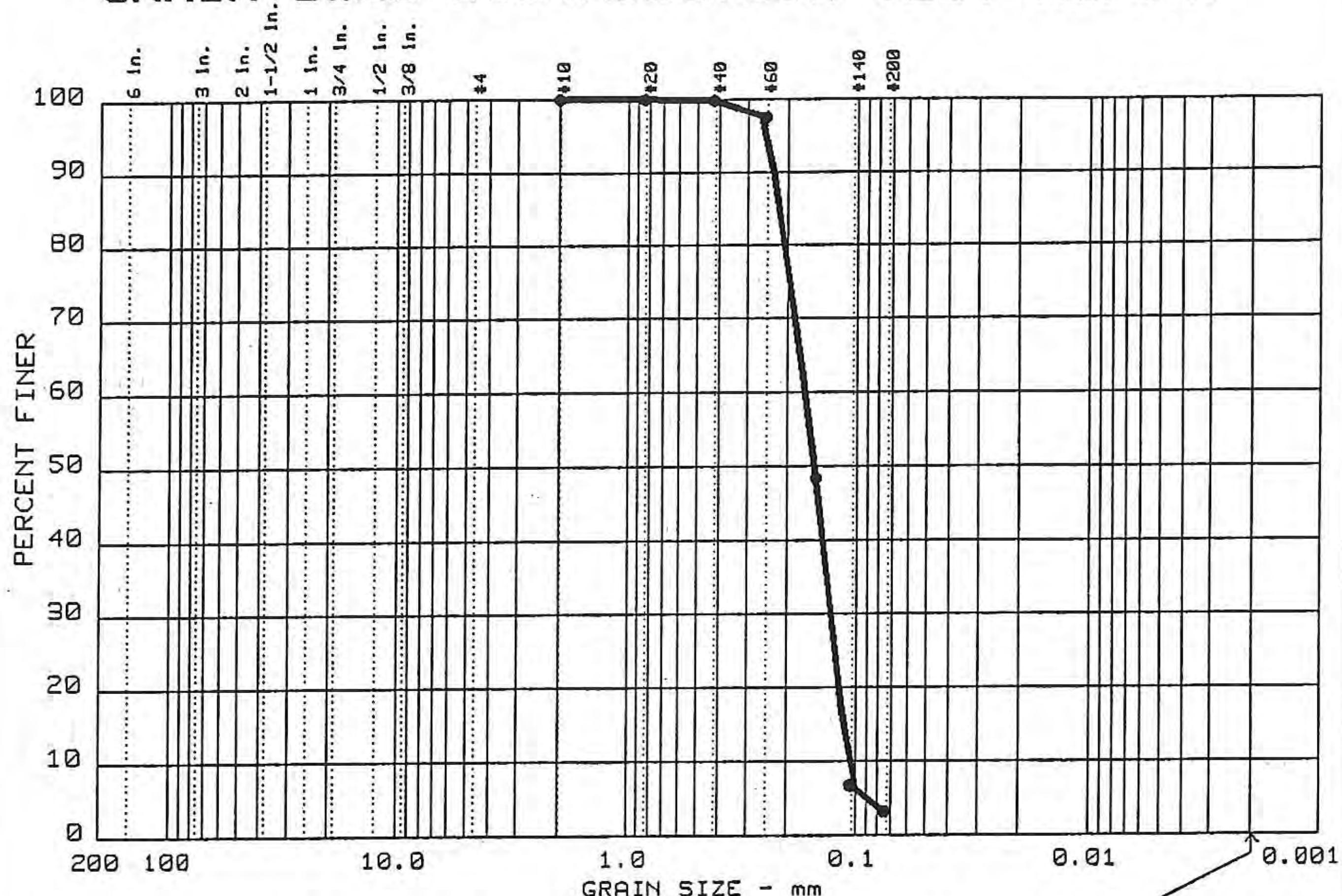
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 6.2%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.0	96.7	3.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.17	0.15	0.129	0.1134	0.1088	0.90	1.5

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB17, 3'- 5'

Date: 8-24-95

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

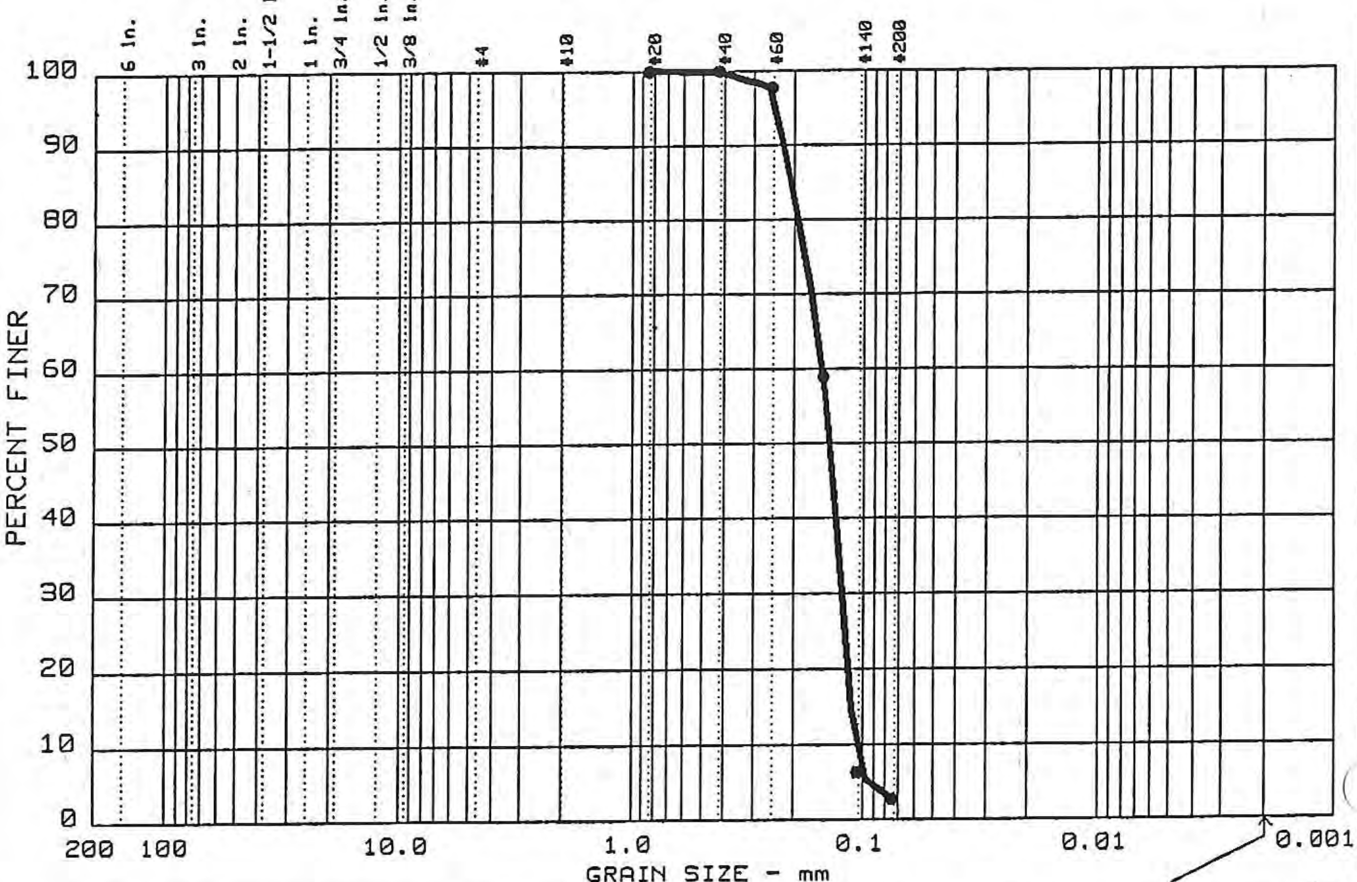
NMC = 5.8%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 9	0.0	0.0	97.2	2.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.15	0.14	0.124	0.1122	0.1085	0.93	1.4

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB18, 5'- 7'

Date: 8-24-95

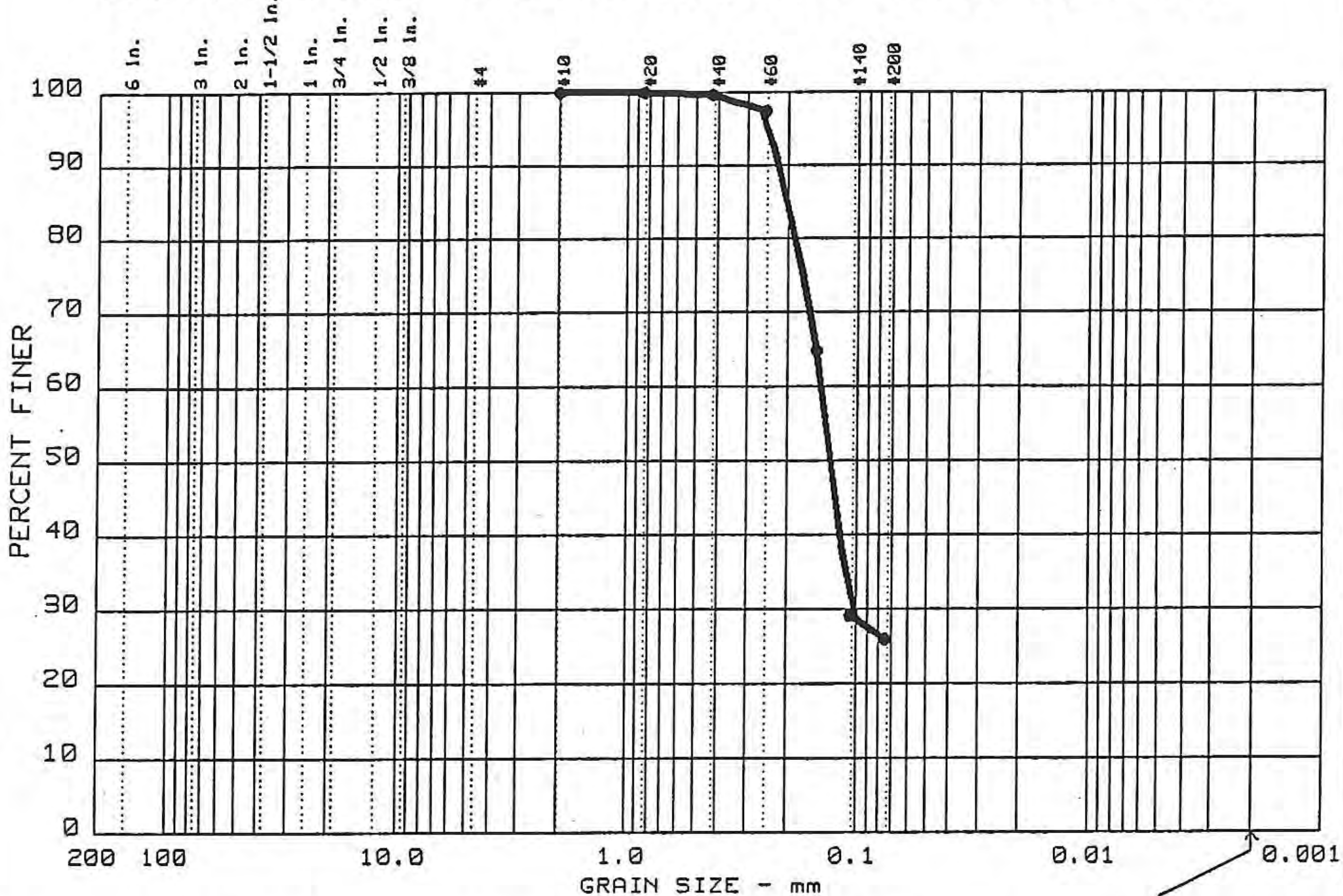
Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 9.5%

GRAIN SIZE DISTRIBUTION TEST REPORT
PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	74.0	26.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.20	0.14	0.13	0.107				

MATERIAL DESCRIPTION	USCS	AASHTO
●	SM	A-2-4

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB19, 10'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

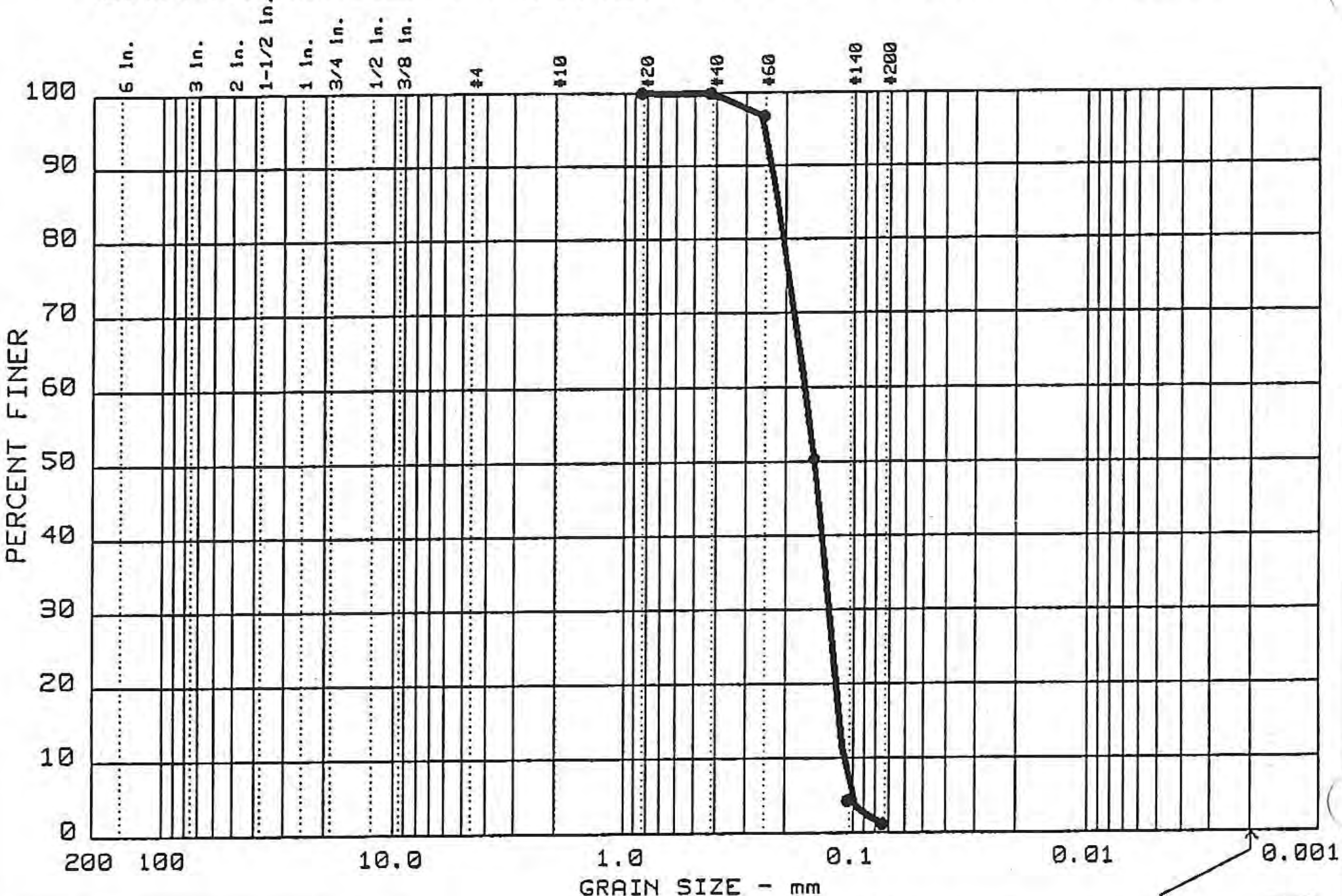
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 21.7%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	0.0	98.8	1.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.16	0.15	0.129	0.1148	0.1105	0.91	1.5

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H72B-SB20, 7'- 9'

Date: 8-24-95

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

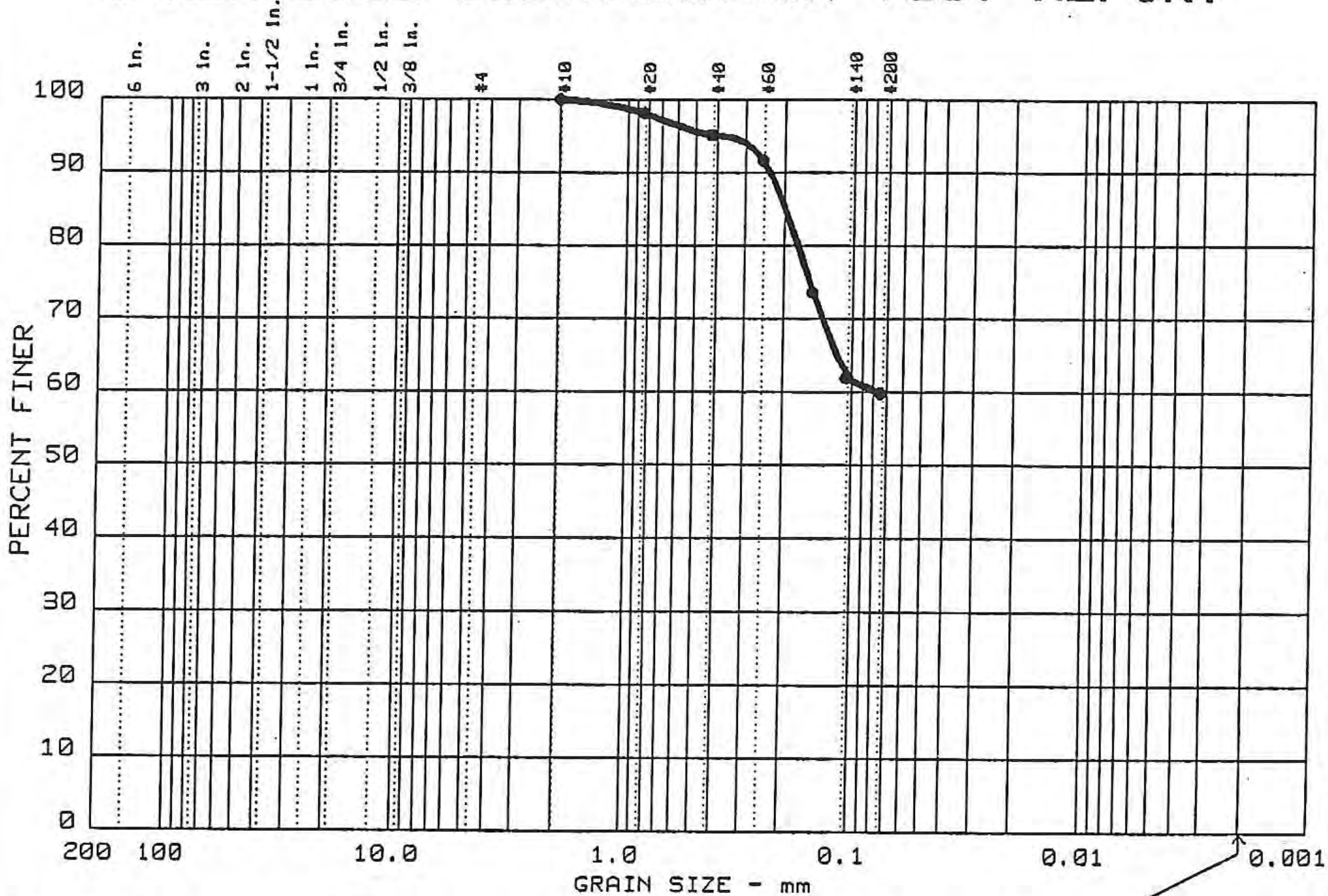
NMC = 24.7%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.0	40.2	59.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	49	27	0.20	0.08						

MATERIAL DESCRIPTION	USCS	AASHTO
●	CL	A-7-6

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB21, @ 13'

Date: 8-24-95

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

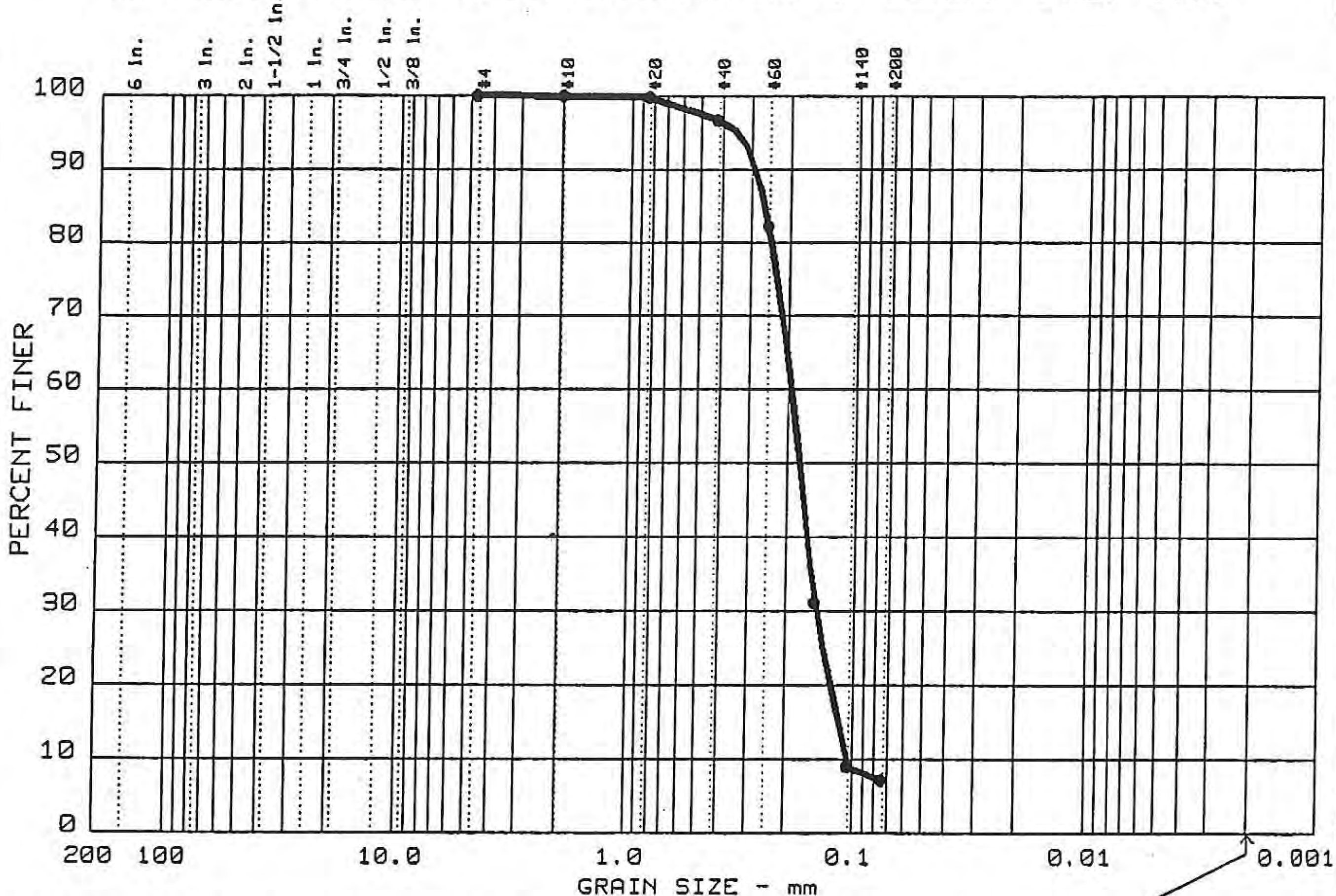
NMC = 39.7%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	0.0	92.8	7.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.26	0.19	0.18	0.147	0.1161	0.1072	1.04	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB22, 9'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

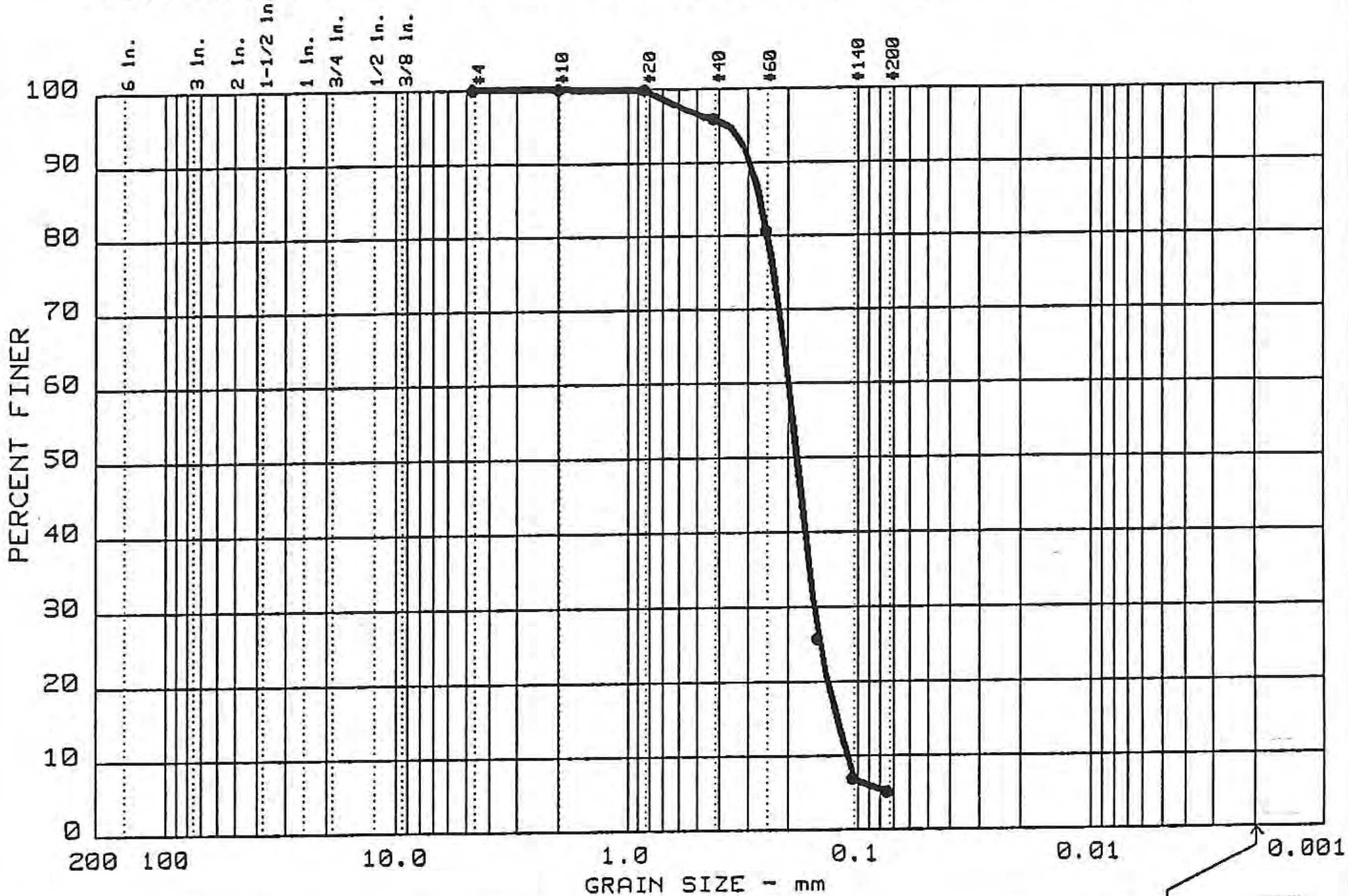
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 33.7%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	0.0	94.9	5.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.27	0.20	0.18	0.156	0.1229	0.1121	1.08	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB23, 9'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

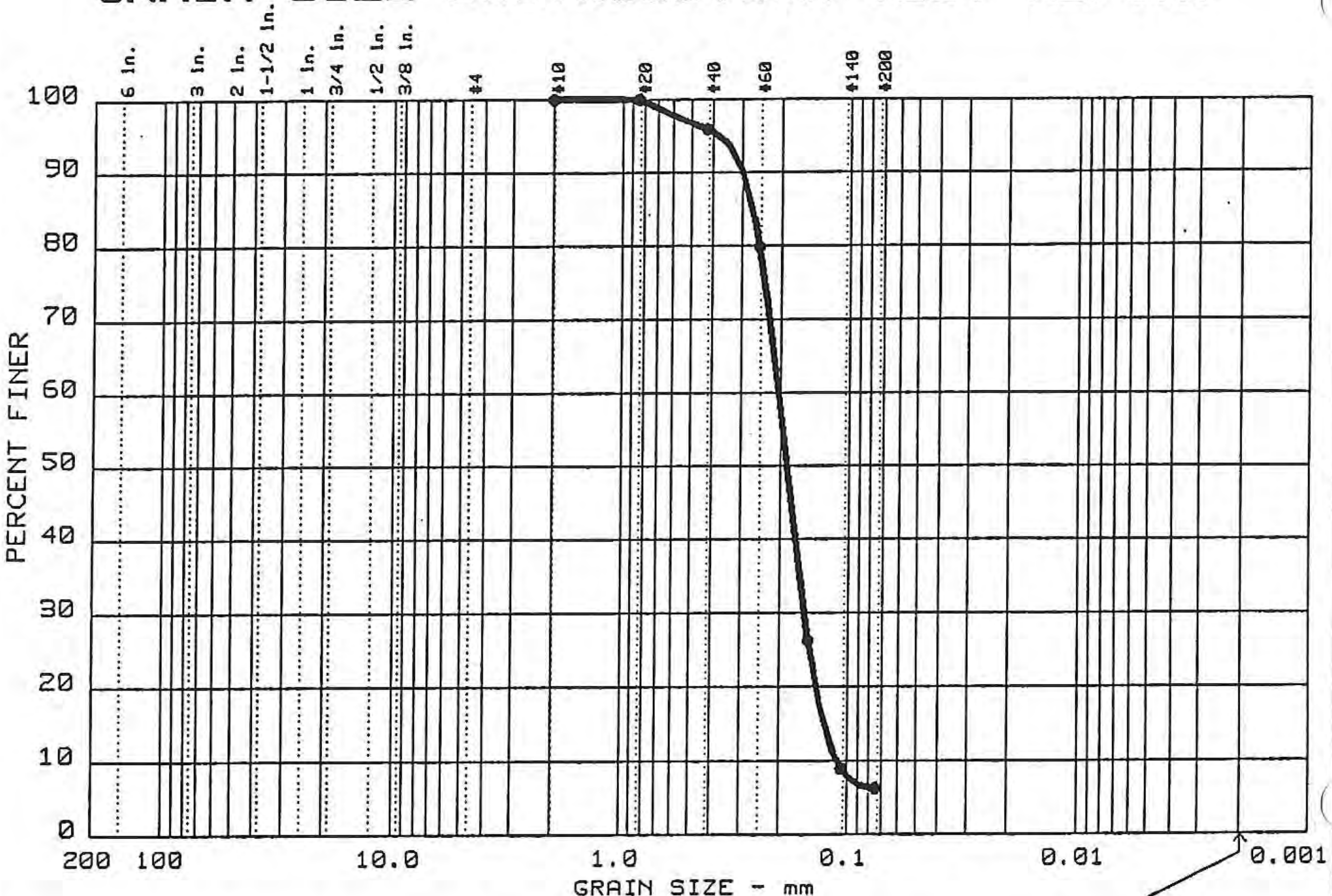
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 25.5%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	0.0	93.7	6.3	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.27	0.20	0.19	0.156	0.1263	0.1100	1.08	1.9

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB24, 11'- 13'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

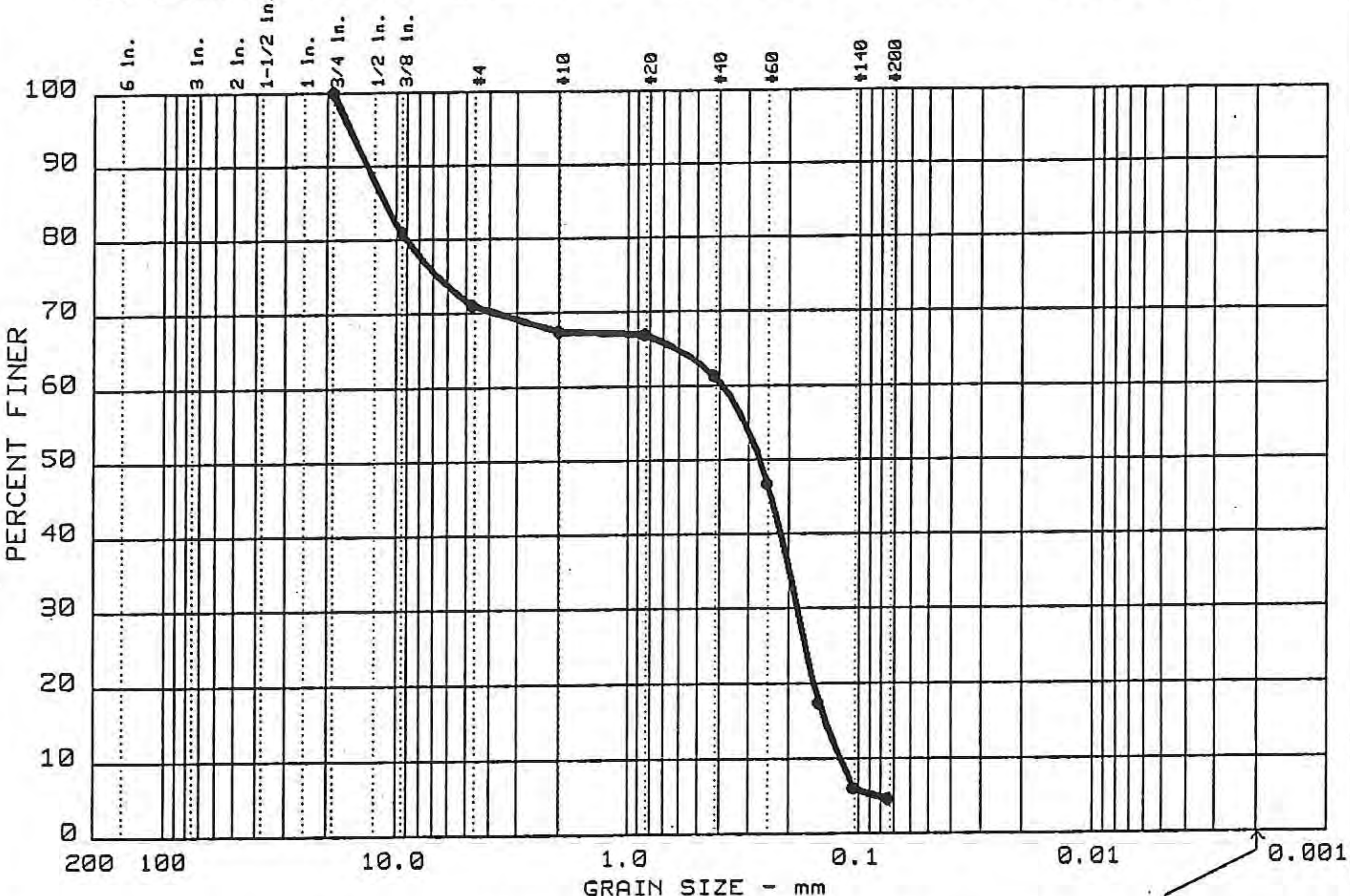
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 19.3%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	29.0	66.4	4.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	11.22	0.39	0.27	0.184	0.1393	0.1194	0.73	3.3

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB25, 5'- 7'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

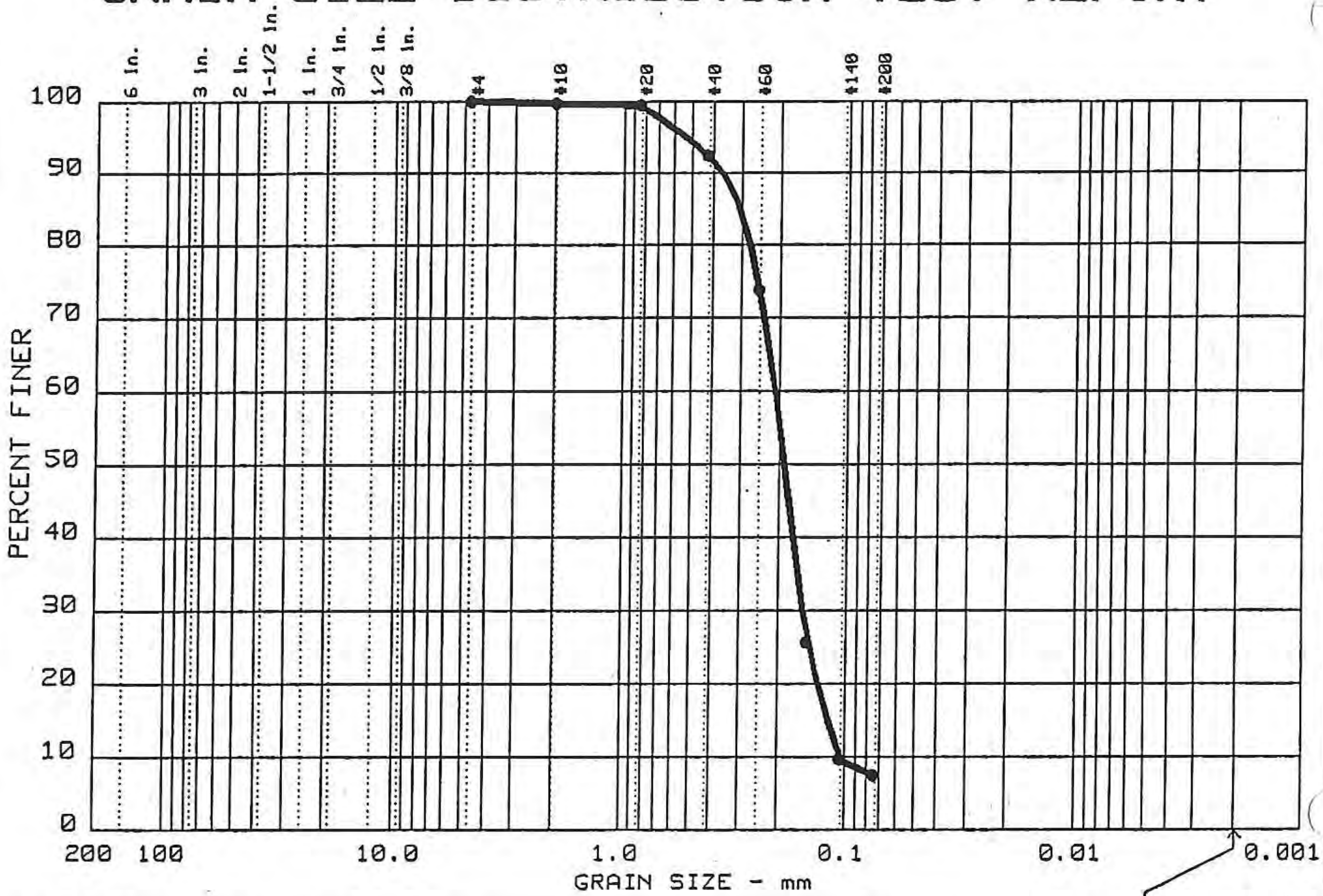
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 6.7%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	16	0.0	0.0	92.5	7.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.31	0.21	0.19	0.157	0.1189	0.1060	1.11	2.0

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB26, 1'- 3'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

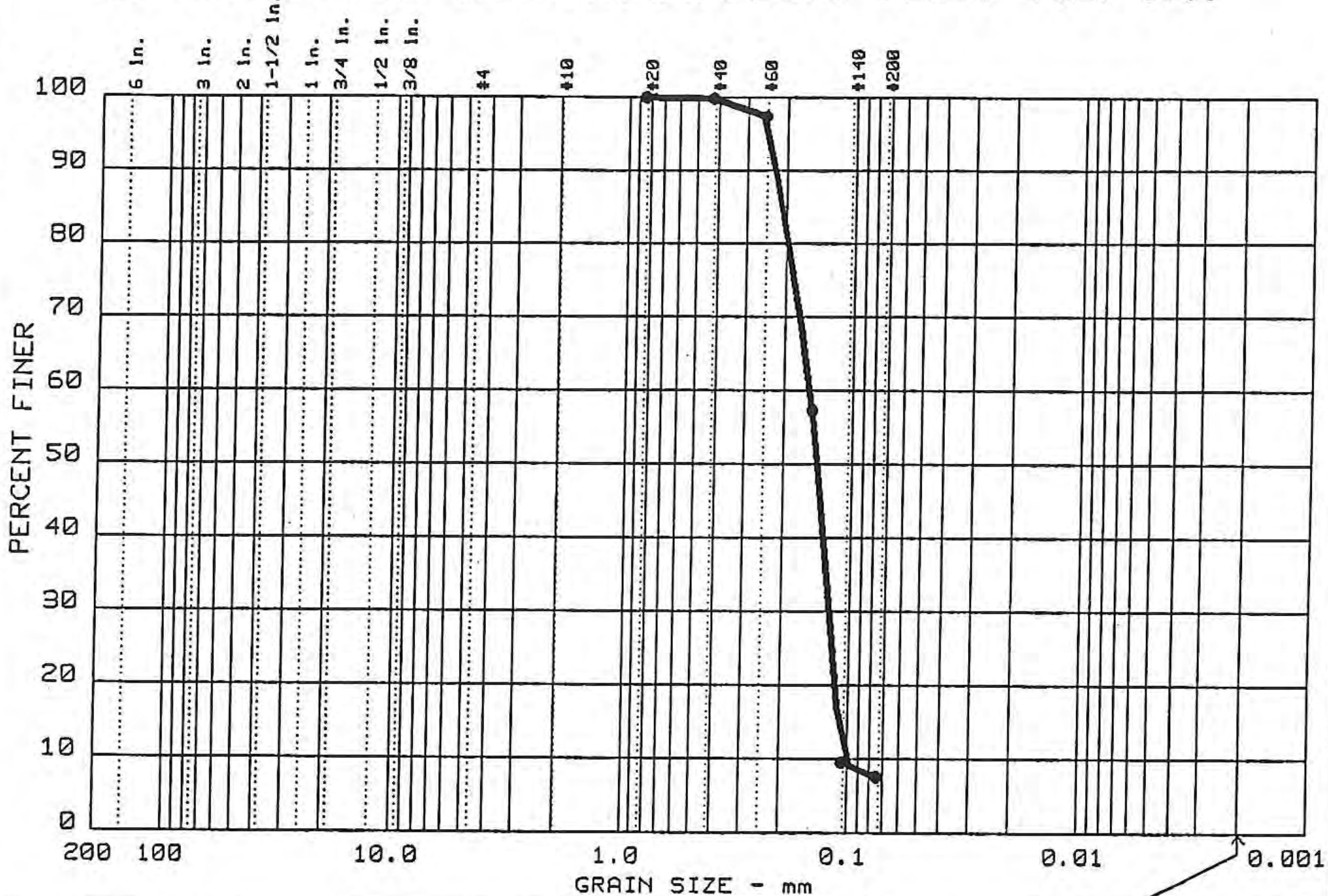
PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:
TESTED BY: M. REED
CHECKED BY: R. LALLE

NMC = 6.7%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	17	0.0	0.0	92.4	7.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.15	0.14	0.123	0.1103	0.1060	0.93	1.5

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB27, 7'- 9'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

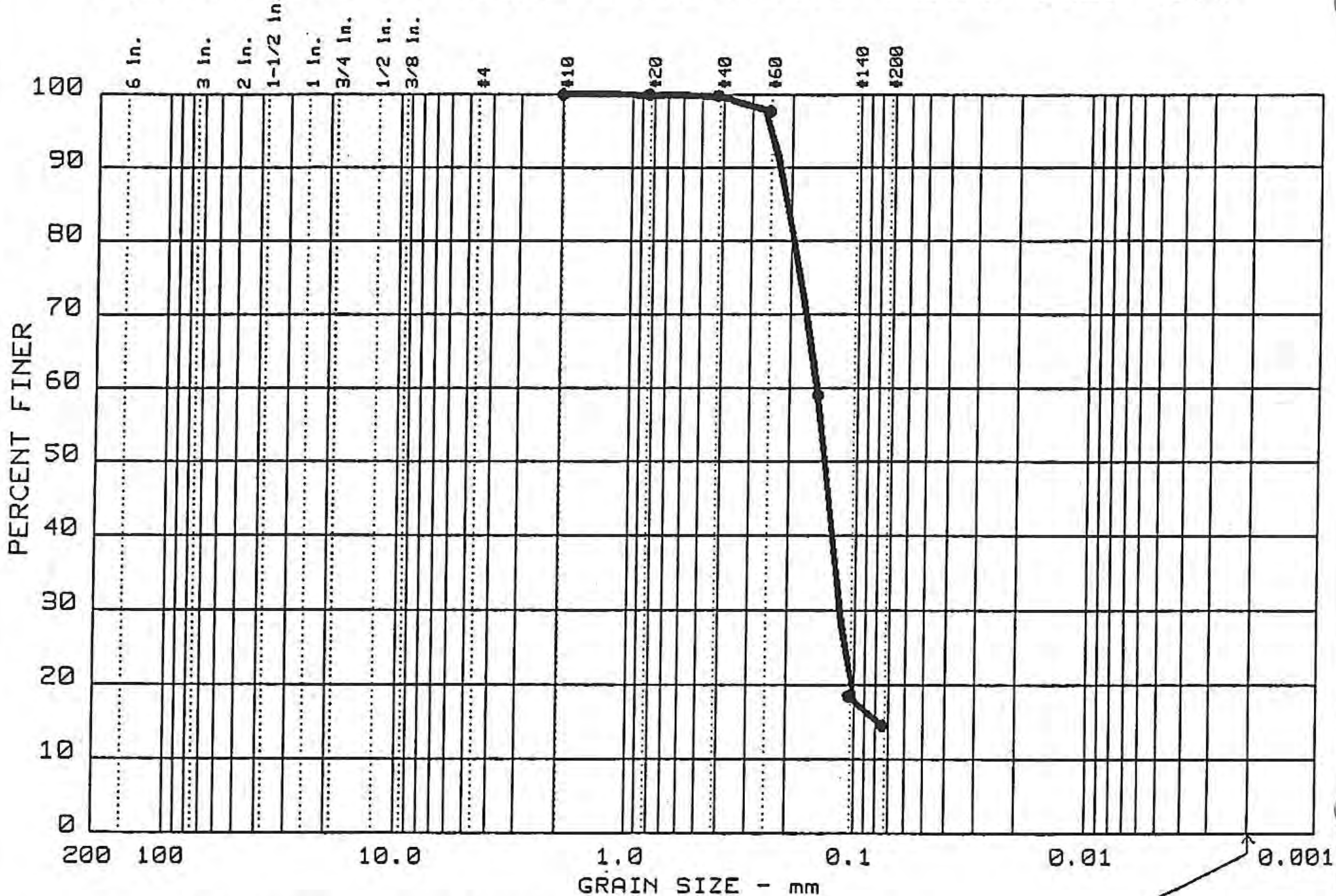
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 22.3%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	18	0.0	0.0	85.4	14.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.15	0.14	0.117	0.0772			

MATERIAL DESCRIPTION	USCS	AASHTO
●	SM	A-2-4

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB28, 5'- 7'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

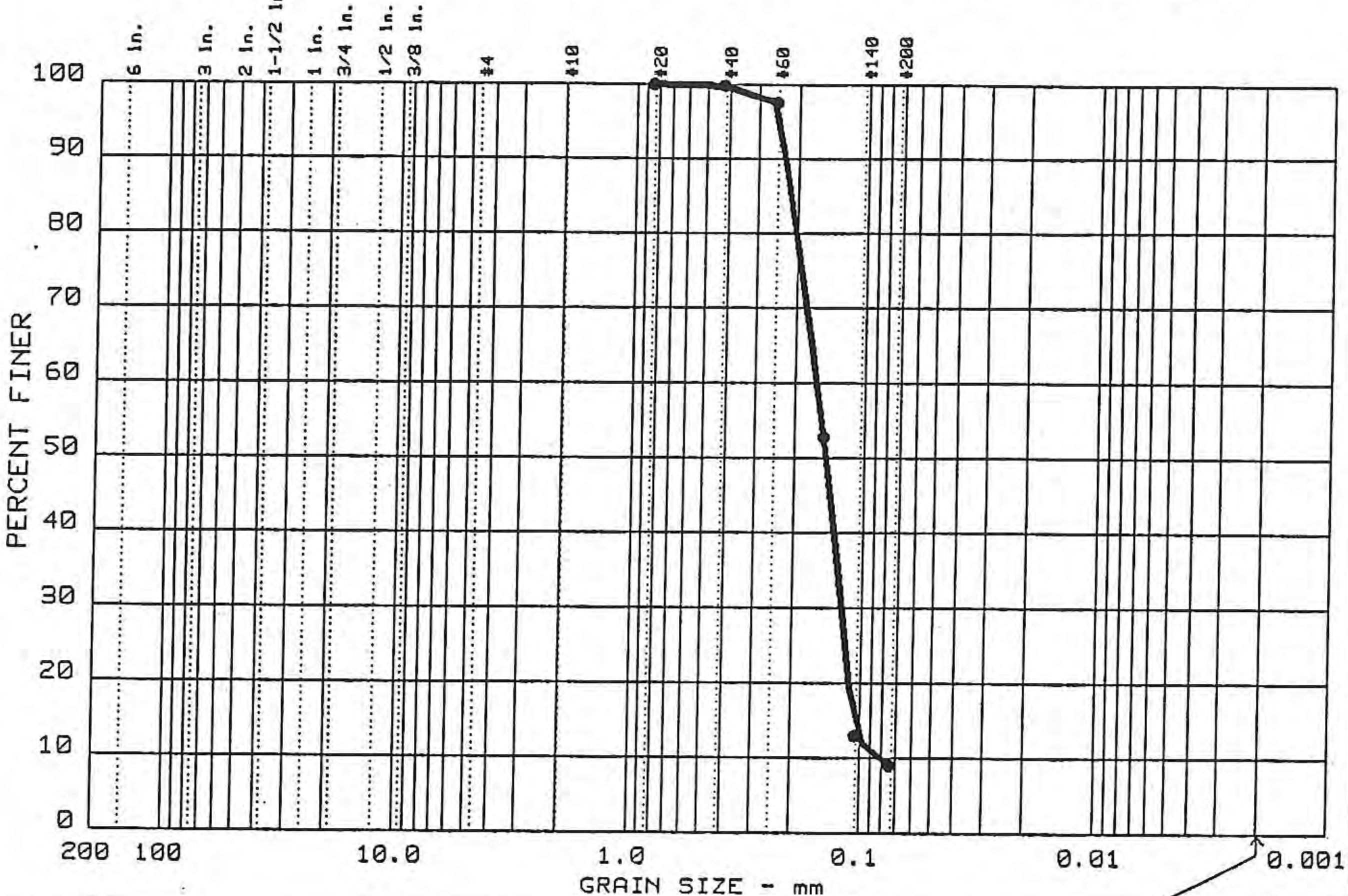
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 25.9%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	19	0.0	0.0	90.9	9.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.16	0.15	0.123	0.1078	0.0808	1.16	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB29, 9'- 11'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

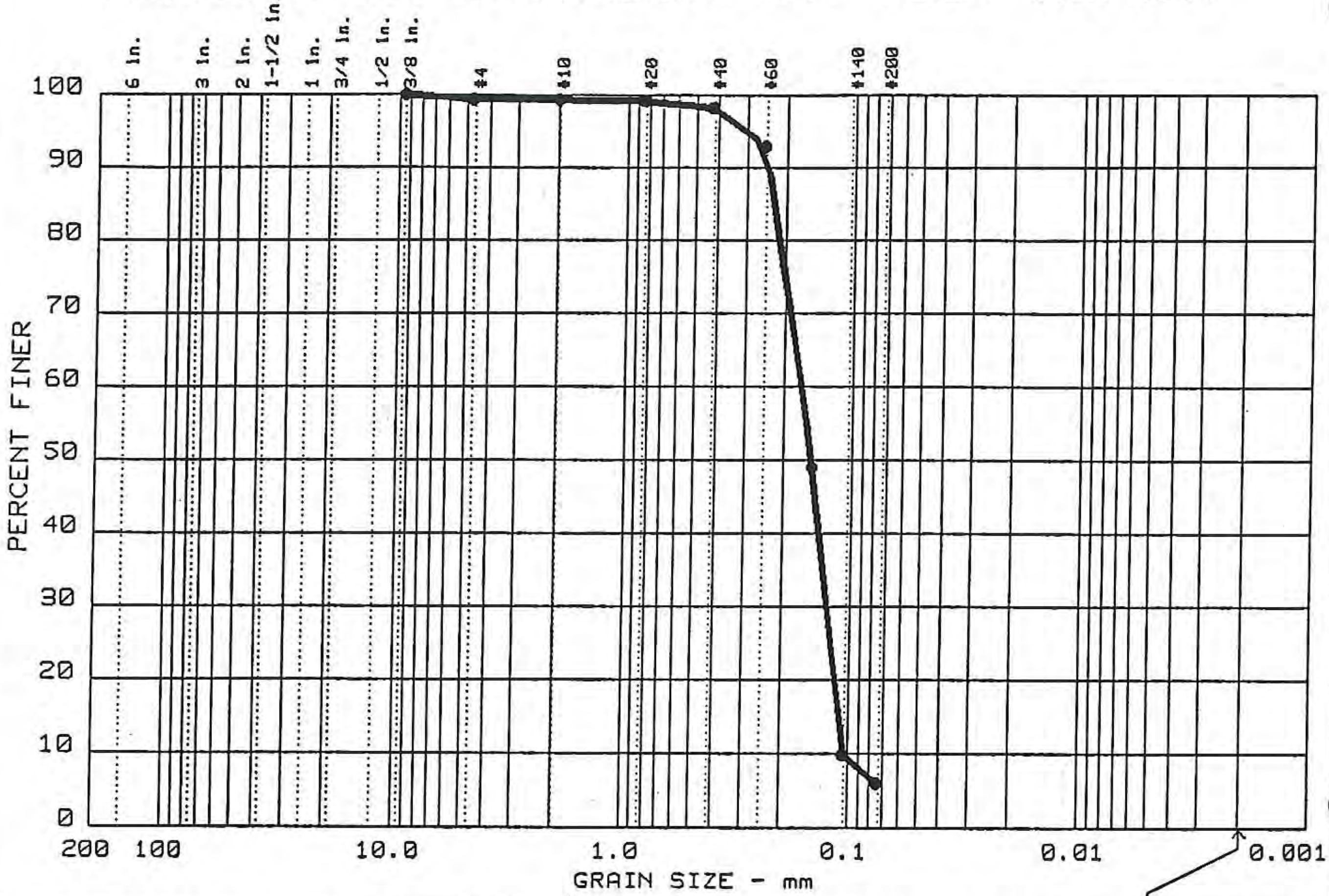
TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 31.4%

Figure No. ______

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	20	0.0	0.7	93.3	6.0	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.23	0.17	0.15	0.127	0.1108	0.1058	0.90	1.6

MATERIAL DESCRIPTION	USCS	AASHTO
●	SP-SM	A-3

Project No.: 016602-4102
Project: HUNTER AIR FORCE BASE
● Location: H728-SB30, 5'- 7'

Date: 8-24-95

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

TESTED BY: M. REED

CHECKED BY: R. LALLE

NMC = 17.7%

Figure No. ______

APPENDIX D

GEOLOGIC LOGS

Hole No. H728 - HA01

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase 1
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: Metcalf + Eddy
4. HOLE NO. (As shown on drawing title and file number): H728- HA01
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5'
10. SIZE AND TYPE OF BIT: 3" Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5' bgs
16. DATE HOLE: STARTED 6-13-95; COMPLETED 6-13-95
17. ELEVATION TOP OF HOLE: 20.58
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	silty sand, 10% silt, dark yellowish brown 10YR 3/4, Loose, dry, no apparent bedding, fine grained, subround.	—	—	
	1–2	sm	silty sand, 18% silt, very dark gray 10YR 3/1, moist, medium loose, no apparent bedding, fine grained, sub round.			
	2–3	sm	silty sand, 15% silt, 25% clay, dark grayish brown, 10YR 4/2 wet, medium loose, subround.			
	3–3.5		No sample			
	3.5		EOB. @ 3.5'			
	4					

Hole No. H728-HAØ2

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HAØ2
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ≈ 4'
16. DATE HOLE: STARTED 6-13-95 | COMPLETED 6-13-95
17. ELEVATION TOP OF HOLE: 20.32
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 20% silt, dark yellowish brown, 10YR 4/4, loose, dry, fine to medium grained, subrounded.	—	—	
	1–2	SM	silty sand, 15% silt, dark grayish brown, 10YR 4/2, loose, damp, fine to medium grained, subround.			ODOR
	2–3	SM	silty sand, 10% silt, light brownish gray, 10YR 6/2, loose, damp, fine grained, well rounded.			ODOR
	3–4	SM	SAME AS Above			ODOR
	4		E.O.B. @ 4.0'			

Hole No. H728-HAØ3

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Mfe	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HAØ3	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.5'
	16. DATE HOLE — STARTED 6-13-95 — COMPLETED 6-13-95
7. THICKNESS OF OVERBURDEN 3.5'	17. ELEVATION TOP OF HOLE 19.96
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 3.5'	19. SIGNATURE OF INSPECTOR G Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 15% silt, >5% gravel, very dark brown, 10YR 2/2, loose, dry, fine grained, subround			
	1	SM	silty sand, 10% silt, light gray, 10YR 7/1, loose, dry, fine grained, subround.			ODOR
	2	SM	silty sand, >5% silt, grayish brown, 10YR 5/2, wet, fine grained, subround			ODOR
	3		No Sample			
			EOB @ 3.5'			

Hole No. H728- HA04

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728- HA04	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.0
	16. DATE HOLE — STARTED 6-13-95 — COMPLETED 6-13-95
7. THICKNESS OF OVERBURDEN 3.0'	17. ELEVATION TOP OF HOLE 20.47
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 3'	19. SIGNATURE OF INSPECTOR G Powell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SC	clayey sand, 10% clay, 5% silt, very dark grayish brown 10YR 3/2, dry, fine grained, subround.			
	1	SM	~~clay~~ silty sand, 25% silt, very dark gray, 10YR 3/1, damp, fine grained, subround			ODOR
	2	SC	clayey sand, 40% clay, dark gray, 10YR 4/1, wet, medium plasticity, very soft, fine grained, subround.			slight ODOR
	3		E.O.B. @ 3.0'			

Hole No. H728-HA05

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA05
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-13-95 | COMPLETED 6-13-95
17. ELEVATION TOP OF HOLE: 20.88
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 10% silt, brown 10YR ~~5/3~~ 5/3, medium grained, dry, subangular			
	1–2	SM	silty sand, 10% silt, grayish brown, 10YR 5/2, medium grained, dry, subrounded.			
	2–3	SM	Same as above. occasional clay balls. wet			ODOR
	3		E.O.B @ 3.0'			

Hole No. H728-HA06

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT: Hand Auger / 3"
2. LOCATION (Coordinates or Station): Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: M+E	12. MANUFACTURER'S DESIGNATION OF DRILL: NA
4. HOLE NO. (As shown on drawing title and file number): H728-HA06	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 / UNDISTURBED 0
5. NAME OF DRILLER: G. Rowell	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: ≈ 5'
	16. DATE HOLE: STARTED 6-13-95 / COMPLETED 6-13-95
7. THICKNESS OF OVERBURDEN: 5.0	17. ELEVATION TOP OF HOLE: 20.72
8. DEPTH DRILLED INTO ROCK: —	18. TOTAL CORE RECOVERY FOR BORING: — %
9. TOTAL DEPTH OF HOLE: 5'	19. SIGNATURE OF INSPECTOR: G. Powell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 15% silt, brown 10YR 4/3, loose, dry, very coarse grained, subangular			
	1–2	SM	silty sand, 10% silt, grayish brown, 10YR 5/2, loose, dry, fine to medium grained, subround.			slight odor
	2–3	SM	Same as above, gray 10YR 5/1, damp.			3'-5' taken from offset located 1' to north. ODOR
	3–4	SM	silty sand, 10% silt, light brownish gray, 10YR 6/2, damp, loose, fine grained, subround.			ODOR
	4–5	SM	silty sand, 10-15% silt, very dark gray, 10YR 3/1, wet, loose, round, fine grained			ODOR
	5		E.O.B. @ 5.0'			

Hole No. H728-HA07

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA07
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.0
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5'
16. DATE HOLE: STARTED 6-13-95 | COMPLETED 6-13-95
17. ELEVATION TOP OF HOLE: 20.41
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 10% silt, yellow 10YR 8/6, loose, dry, medium grained, subround			
	1–2	SM	silty sand, 20% silt, dark grayish brown, 10YR 4/2, loose, moist, fine-medium grained, subround.			2'-5' taken from offset locate 1' to south. slight ODOR
	2–3	SM	Same as above.			slight ODOR
	3–4	SM	silty sand, 10% silt, light brownish gray, 10YR 6/2, loose, moist, fine grained, subround.			slight ODOR
	4–5	SM	silty sand, 20% silt, <5% clay, loose, wet, brown, 10YR 5/3, fine grained, subround			ODOR
	5		E.O.B @ 5.0'			

Hole No. H728-HA08

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: VNE
4. HOLE NO. (As shown on drawing title and file number): H728-HA08
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5'
16. DATE HOLE: STARTED 6-14-95 | COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 20.75
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, <5% silt, yellow 10YR 7/8, loose, moist, medium grained, subangular to subround.			
	1–2	SM	silty sand, 5-10% silt, grayish brown, 10YR 5/2, loose, moist, fine grained, subangular to subround.			ODOR
	2–3	SM	same as above, light yellowish brown, 10YR 6/4			ODOR
	3–4	SM	same as above grayish brown, 10YR 5/2 increasing clay (<5%)			ODOR
	4–5	SM	clayey silty sand, 10% clay, 10% silt, brown, 10YR 5/3, loose, wet, fine grained, subround.			ODOR
	5		E.O.B. @ 5.0'			

Hole No. H728-HA09

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA09
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA -
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 2.5'-3'
16. DATE HOLE: STARTED 6-14-95 | COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 20.38
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Clayey silty sand, 10% clay 10% silty dark grayish brown 10YR 4/2, loose, dry, fine grained, subround.			ODOR
	1	SM	silty sand, 5-10% silt, dark gray, 10YR 4/1, loose, moist, fine grained, sub-round to round.			ODOR
	2	SM	~~silty~~ or same as above. saturated.			ODOR
	3		E.O.B @ 3.0'			
	4					

Hole No. H728-HA10

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT: Hand Auger / 3"
2. LOCATION (Coordinates or Station): Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: MHE	12. MANUFACTURER'S DESIGNATION OF DRILL: NA
4. HOLE NO. (As shown on drawing title and file number): H728-HA10	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
5. NAME OF DRILLER: G. Rowell	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: 3.5'
7. THICKNESS OF OVERBURDEN: 4.0'	16. DATE HOLE: STARTED 6-14-95; COMPLETED 6-14-95
8. DEPTH DRILLED INTO ROCK: —	17. ELEVATION TOP OF HOLE: 19.95
9. TOTAL DEPTH OF HOLE: 4.0	18. TOTAL CORE RECOVERY FOR BORING: — %
	19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 10% silt, very dark gray, 10YR 3/1, loose, dry, fine grained, sub-round			ODOR
	1–2	SM	SAME as above			ODOR
	2–3	SC	clayey sand, 20-25% clay, brown, 10YR 5/3, medium plasticity, soft, moist, fine grained, subround.			ODOR
	3–4	SC	clayey sand, 20% clay, dark grayish brown, 10YR 4/2, medium plasticity, soft, fine grained, wet, subround.			ODOR
			E.O.B @ 4.0'			

Hole No. H728-HA11

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA11	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3'
7. THICKNESS OF OVERBURDEN 3.0'	16. DATE HOLE — STARTED 6-14-95 — COMPLETED 6-14-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 19.48
9. TOTAL DEPTH OF HOLE 3.0'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5-10% silt, light brownish gray, 10YR6/2, loose, dry, fine grained, subround to round.			
	1–2	SM	silty sand, 10% silt, brown, 10YR 5/3, loose, moist, fine grained, subround to round.			
	2–3	CL	sandy clay, 30% sand, brown, 10YR 5/3, medium plasticity, soft, wet, sand is fine grained and subrounded.			
	3		E.O.B. @ 3.0'			

Hole No. H728-HA12

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MetE
4. HOLE NO. (As shown on drawing title and file number): H728-HA12
5. NAME OF DRILLER: G. Powell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.0'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'-5'
16. DATE HOLE: STARTED 6-14-95 | COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 19.17
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Powell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Silty sand, 5-10% silt, very dark grayish brown, 10YR 3/2, loose, dry, fine grained, subangular to subround.			
	1	SM	Same as above			
	2	SM	Silty sand, 5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained, subround to round.			
	3	SM	Same as above 10YR 5/2 grayish brown.			
	4	SM	Same as above wet.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA13

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA13
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.0
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-14-95 | COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 18.57
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 10% silt, dark gray, 10YR 4/1, dry, loose, fine grained, subround to round.			
	1	SM	Same as above			
	2	SM	silty sand, 5% silt, gray 10YR 5/1, moist, loose, fine grained, round			
	3	SM	silty sand, 5-10% silt, very dark gray, 10YR 3/1, loose, wet, fine grained, rounded.			
	4	SM	Same as above, dark gray, 10YR 4/1, saturated			
	5		E.O.B @ 5.0'			

Hole No. H728-HA14

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA.
3. DRILLING AGENCY: MTE
4. HOLE NO. (As shown on drawing title and file number): H728-HA14
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 2.5'
16. DATE HOLE: STARTED 6-14-95 | COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 18.49
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 10% silt, 10YR 3/1, very dark gray, loose, moist, fine grained subround.			
	1	SM	same as above			
	2	SM	silty sand, 5-10% silt, dark gray, 10YR 4/1, loose, saturated, finegrained, subround.			
	3		E.O.B. @ 3.0'			

Hole No. H728- HA15

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA15	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 2.5'
7. THICKNESS OF OVERBURDEN 3.0'	16. DATE HOLE — STARTED 6-14-95 — COMPLETED 6-14-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 19.88
9. TOTAL DEPTH OF HOLE 3.0	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 10-15% silt, very dark gray, 10YR 3/1, loose, dry, fine grained, Round.			
	1	SM	silty sand, 5-10% silt, very dark grayish brown, 10YR 3/2, loose, Moist, fine grained, round			
	2	SM	silty sand, 5% silt, very dark gray, 10YR3/1, loose, saturated, fine grained, round.			
	3		E.O.B @ 3.0'			

Hole No. H728-HA16

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA16
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL:
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 2.5'
16. DATE HOLE: STARTED 6-14-95; COMPLETED 6-14-95
17. ELEVATION TOP OF HOLE: 20.75
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5-10% silt, brown, 10YR 4/3, loose, moist, finegrained, sub-round to round.			
	1–2	SM	same as above			
	2–3	SM	silty sand, 5-10% silt, very dark gray, 10YR 3/1, loose, wet, fine grained, round.			
	3		E.O.B @ 3.0'			

Hole No. H728-HA17

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA17	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 4.5'
7. THICKNESS OF OVERBURDEN 5.0'	16. DATE HOLE — STARTED 6-14-95 — COMPLETED 6-14-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 23.18
9. TOTAL DEPTH OF HOLE 5.0'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Silty sand, 5% silt, very dark gray, 10YR 3/1, loose, dry, fine grained, round			
	1	SM	Silty sand, 10% silt, dark grayish brown, 10YR 3/2, loose, dry, fine grained, Round.			
	2	SM	same as above			3'-5' taken from offset located 1 foot east.
	3	SM	same as above moist.			
	4	SM	same as above saturated.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA18

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA18
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'-3.5'
16. DATE HOLE: STARTED 6-15-95; COMPLETED 6-15-95
17. ELEVATION TOP OF HOLE: 23.75
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5-10% silt, very dark gray, 10YR3/1, loose, ~~dark~~ dry, fine grained, sub-round to round.			
	1–2	SM	silty sand, 5-10% silt, very dark grayish brown, 10YR 3/2, moist, loose, fine grained, round.			
	2–3	SM	silty sand, 5% silt, black, 10YR 2/1, loose, wet, fine grained, round.			Collect from offset located 1' to east.
	3–3.5		No Sample			
	3.5		E.O.B @ 3.5'			
	4					

Hole No. H 728-HA19

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 8728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA19	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.5
	16. DATE HOLE — STARTED 6-15-95 — COMPLETED 6-15-95
7. THICKNESS OF OVERBURDEN 4.0'	17. ELEVATION TOP OF HOLE 25.55
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 4.0	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, dark brown, 10YR 3/3, loose, dry, very fine grained, round			
	1–2	SM	same as above, dark grayish brown, 10YR 4/2 fine grained. round			
	2–3	SM	silty sand, 5% silt, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	3–4	SM	silty sand, 5% sand, dark grayish brown, 10YR 4/2, loose, saturated, fine grained round.			Sample collected from offset located 1' to east
	4		E.O.B @ 4.0'			

Hole No. H728-HA2Ø

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA2Ø	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 5'
7. THICKNESS OF OVERBURDEN 5.0'	16. DATE HOLE — STARTED 6-15-95 — COMPLETED 6-15-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 28.67
9. TOTAL DEPTH OF HOLE 5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 5% silt, brown, 10YR4/3, loose, dry, fine grained, subround to round, shell fragments.			
	1	SM	silty sand, 5% silt, grayish brown, 10YR 5/2, loose, moist to dry, fine grained, round, oyster shell fragments.			
	2	SM	silty sand, <5% silt, light gray, 10YR7/2, loose, dry, finegrained, round.			
	3	SM	same as above.			
	4	SM	same as above. wet.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA21

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA21
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-15-95; COMPLETED 6-15-95
17. ELEVATION TOP OF HOLE: 30.05
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, yellowish brown, 10YR5/4, loose, dry, fine grained, round.			
	1–2	SM	silty sand, 5% silt, strong brown, 7.5YR 5/6, loose, moist, fine grained, round.			
	2–3	SM	silty sand, 5% silt, yellow, 10YR 7/6, loose, moist, fine grained, round.			
	3–4	SM	sand, <5% silt, pale brown, 10YR 6/3, loose, wet, fine grained, round.			
	4		No Sample			
			E.O.B. 4.5'			
	5					

Hole No. H728-HA22

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA22
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 2
16. DATE HOLE: STARTED 6-15-95 | COMPLETED 6-15-95
17. ELEVATION TOP OF HOLE: 33.35
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, yellowish brown, 10YR 5/4, loose, dry, fine grained, subround.			
	1–2	SM	Same as above. 10YR 6/4 light yellowish brown			
	2–3	SM	silty sand, 5% silt, pale brown, 10YR 6/3, loose, dry, fine grained, round.			
	3–4	SM	Same as above, moist			
	4–5	SM	Same as above.			Auger refusal at 5'. Offset 18" East.
	5–5.5		No Sample			Auger refusal at 5.5'.
			E.O.B. 5.5'			

Hole No. H728 - HA23

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728 - HA23	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 7 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 7'
	16. DATE HOLE — STARTED 6-15-95 — COMPLETED 6-15-95
7. THICKNESS OF OVERBURDEN 7.0'	17. ELEVATION TOP OF HOLE 34.37
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 7'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, grayish brown, 10YR5/2, loose, dry fine grained, subround.			
	1	SM	same as above			
	2	SM	same as above			
	3	SM	same as above			
	4	SM	same as above moist.			
	5	SM	sand, <5% silt, pale brown, 10YR6/3, loose, moist, very fine to fine grained, rounded.			6'-7' collect from offset located 18" to east.
	6	SM	same as above wet.			
	7		BOB @ 7.0'			

Hole No. H728-HA24

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY VMFE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA24	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6.5'
	16. DATE HOLE — STARTED 6-15-95 — COMPLETED 6-15-95
7. THICKNESS OF OVERBURDEN 6.5'	17. ELEVATION TOP OF HOLE 35.20
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 6.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 5% silt, dark grayish brown, 10YR4/2, loose dry, fine to medium grained subround.			
	1	SM	sand, <5% silt, grayish brown, 10YR/5/2, loose, dry, fine grained, round.			
	2	SM	same as above.			
	3	SM	same as above			4' to 6' collected from offset located 1' to east.
	4	SM	Sand, <5% silt, light gray, 10YR7/2, loose, slightly moist, fine grained, round			
	5	SM	same as above, wet.			
	6		No Sample			
			E.O.B. @ 6.5'			
	7					

Hole No. H 728 - HA25

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY WTE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA25	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6.5
7. THICKNESS OF OVERBURDEN 6.5	16. DATE HOLE — STARTED 6-16-95 — COMPLETED 6-16-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 35.18
9. TOTAL DEPTH OF HOLE 6.5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, <5% silt, brown, 10YR 5/3, loose, dry, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	same as above moist.			
	3–4	SM	same as above			
	4–5	SM	same as above			
	5–6	SM	sand, <5% silt, dark brown 7.5YR 3/4, loose, wet, fine grained, round			
	6		No Sample			
			E.O.B @ 6.5'			

Hole No. H728-HA26

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger/3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA26	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1; UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
7. THICKNESS OF OVERBURDEN 1.5'	16. DATE HOLE: STARTED 6-16-95; COMPLETED 6-16-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 36.81
9. TOTAL DEPTH OF HOLE 18'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Silty sand, 5% silt, dark grayish brown, 10YR 5/2, loose, dry, fine grained, round			
	1		Same as above			Auger refusal at 18"
			E.O.B. @ 1.5'			
	2					
	3					

Hole No. H728 - HA27

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728 - HA27
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5.5'
16. DATE HOLE: STARTED 6-16-95 | COMPLETED 6-16-95
17. ELEVATION TOP OF HOLE: 34.38
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, <5% silt, dark, grayish brown, 10YR 4/2, loose, dry, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Same as above, grayish brown, 10YR 5/2			
	3–4	SM	Sand, <5% silt, brown, 7.5YR 5/4, loose, moist, finegrained, subround.			
	4–5	SM	Sand, <5% silt, brownish yellow, 10YR 6/6, loose, wet, fine grained, round.			
	5–5.5		No Sample			
			E.O.B. @ 5.5'			
	6					

Hole No. H728-HA28

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA28
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8'
16. DATE HOLE: STARTED 6-16-95 | COMPLETED 6-16-95
17. ELEVATION TOP OF HOLE: 38.03
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, very dark gray, loose, dry, 10YR3/2, fine grained, round			
	1–2	SM	sand, <5% silt, dark gray-ish brown, 10YR 4/2, loose, dry, fine grained, round			
	2–3	SM	same as above			
	3–4	SM	same as above			
	4–5	SM	sand, <5% silt, light brownish gray, 10YR6/2, loose, moist, very fine grained, Round.			
	5–6	SM	Same as above.			
	6–7	SM	same as above			

Hole No. H728-HA28

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 2 OF 2 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MfE
4. HOLE NO. (As shown on drawing title and file number): H728-HA28
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.0
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 8 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8'
16. DATE HOLE: STARTED 6-16-95 | COMPLETED 6-16-95
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, <5% silt, light brownish gray, 10YR6/2, loose, wet, very fine grained, Round.			
	8		E.O.B. @ 8.0'			

Hole No. H728-HA29

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA29	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ~~?~~
	16. DATE HOLE: STARTED 6-16-95; COMPLETED 6-16-95
7. THICKNESS OF OVERBURDEN 5.5'	17. ELEVATION TOP OF HOLE 38.32
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 5.5'	19. SIGNATURE OF INSPECTOR G Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, dark grayish brown, 10YR 4/2, loose, dry, fine grained, round.			
	1–2	SM	sand, < 5% silt, brown, 10YR 5/3, loose, dry, very fine grained, round.			
	2–3	SM	same as above			
	3–4	SM	same as above			
	4–5	SM	same as above			~~Auger~~ CR
	5–5.5		No Sample			Auger Refusal at 5.5'
			E.O.B @ 5.5'			

Hole No. H728-HA3Ø

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA3Ø	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
	16. DATE HOLE — STARTED 6-19-95 — COMPLETED 6-19-95
7. THICKNESS OF OVERBURDEN 4.5'	17. ELEVATION TOP OF HOLE 38.57
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 4.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, grayish brown, 10YR5/2, loose, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–4.5		No Sample			Auger refusal at 4.5'
	4.5		E.O.B @ 4.5'			
	5					

Hole No. H728-HA31

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA31
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 2.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 2.5
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-19-95 | COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 38.74
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, <5% silt, grayish brown, 10YR5/2, loose, moist, fine grained, round.			
	1	SM	Same as above			
	2		No Sample			Auger refusal at 2.5'
			E.O.B @ 2.5'			
	3					

Hole No. H728-HA32

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA32
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 1.3'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 1.3
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 38.30
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	1					Auger refusal at ≈ 1.3'
			E.O.B @ 1.3'			
	2					
	3					

Hole No. H728-HA33

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA33
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER: 6'
16. DATE HOLE: STARTED 6-16-95; COMPLETED 6-16-95
17. ELEVATION TOP OF HOLE: 37.58
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, >5% silt, brown, 10YR5/3, loose, dry, fine grained, subround			
	1–2	SM	sand, >5% silt, light yellowish brown, 10YR6/4, loose, dry, finegrained, round			
	2–3	SM	same as above			
	3–4	SM	sand, very pale brown, 10YR7/4, loose, moist, fine grained, round			
	4–5	SM	same as above			
	5–6	SM	Same as above saturated			
	6		E.O.B @ 6.0'			

Hole No. H728-HA34

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA34	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 1 — UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
	16. DATE HOLE — STARTED 6-16-95 — COMPLETED 6-16-95
7. THICKNESS OF OVERBURDEN 1.5'	17. ELEVATION TOP OF HOLE 37.72
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 1.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		Jm	Sand, >5% silt, light yellowish brown, 10YR 6/4, loose, dry, fine grained, round.			
	1		Same as above			Auger refusal at 18"
			EOB @ 1.5'			

Hole No. H728 - HA35

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger/3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA35	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED Ø — UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
	16. DATE HOLE STARTED 6-16-95 COMPLETED 6-16-95
7. THICKNESS OF OVERBURDEN 4"	17. ELEVATION TOP OF HOLE 37.75
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 4"	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			No sample			Auger refusal at 4". No sample taken
			EOB @ 4"			

Hole No. H728-HA36

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA36	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
7. THICKNESS OF OVERBURDEN 6"	16. DATE HOLE: STARTED 6-16-95; COMPLETED 6-16-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 37.59
9. TOTAL DEPTH OF HOLE 6"	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			No sample			Auger refusal at 6". No sample taken
			EOB @ 6"			

Hole No. H728 - HA37

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728 - HA37
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6'
10. SIZE AND TYPE OF BIT: HAnd Auger 2"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6' | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6'
16. DATE HOLE: STARTED 6-16-95 | COMPLETED 6-16-95
17. ELEVATION TOP OF HOLE: 37.45
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand <5% silt, light yellowish brown, 10YR6/4, loose, dry, fine grained, round.			
	1	SM	Same as Above			
	2	SM	Sand, pale yellow, 2.5Y 8/2, loose, moist, very fine grained, round.			
	3	SM	Same as above			
	4	SM	Same as above.			
	5	SM	Same as above, wet.			
	6		E.O.B. @ 6.0'			

Hole No. H728-HA38

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT HAnd Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA38	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.5'
7. THICKNESS OF OVERBURDEN 3.5	16. DATE HOLE — STARTED 6-18-95 — COMPLETED 6-18-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 19.85
9. TOTAL DEPTH OF HOLE 3.5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, <5% silt, dark gray, 10YR 4/1, loose, moist, fine grained, round.			
	1–2	SM	sand, light brownish gray, 10YR 6/2, loose, moist, fine grained, well rounded.			
	2–3	SM	same as above wet.			
	3		No Sample			
			E.O.B. @ 3.5'			

Hole No. H728-HA39

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA39
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5'
16. DATE HOLE: STARTED 6-18-95 | COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 20.56
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, very dark grayish brown, 10YR 3/2, loose, dry, fine grained, round.			
	1	SM	sand, grayish brown, 10YR 5/2, loose, moist, fine grained, round.			
	2	SM	Same as above wet.			
	3		No Sample			
			E.O.B. @ 3.5'			

Hole No. H728-HA40

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA40	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3'
7. THICKNESS OF OVERBURDEN 3.5	16. DATE HOLE — STARTED 6-18-95 — COMPLETED 6-18-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 20.58
9. TOTAL DEPTH OF HOLE 3.5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 5% silt, very dark gray, 10YR3/1, loose moist, fine grained, round			
	1	SM	same as above			
	2	SM	same as above wet.			
	3		No Sample			
			E.O.B. @ 3.5'			

Hole No. H728-HA 41

DRILLING LOG

DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS
	HAAF	

1. PROJECT: HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA 41
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-18-95 COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 21.57
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, <5% silt, very dark grayish brown, 10YR3/2, loose moist, fine grained, round.			
	1	SM	same as above			
	2	SM	Same as above wet.			
	3		E.O.B @ 3.01			

Hole No. H728-HA42

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728- Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728- HA42	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3' — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3'
7. THICKNESS OF OVERBURDEN 3.5'	16. DATE HOLE — STARTED 6-18-95 — COMPLETED 6-18-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 22.51
9. TOTAL DEPTH OF HOLE 3.5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 15% silt, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, subround to round.			
	1	SM	silty sand, 5-10% silt, very dark grayish brown, 10YR 3/2, loose moist, fine grained, round.			
	2	ML	clayey silt, <5% sand, 25% clay, black, 10YR 2/1, soft, high plasticity, wet,			
	3		No Sample			
			E.O.B. @ 3.5'			

Hole No. H728-HA43

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA43
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-18-95 / COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 22.63
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 10% silt, dark gray, 10YR 4/1, loose moist, fine grained, round.			
	1	SM	same as above			
	2	ML	sandy silt, 10-15% fine sand, very dark brown, 10YR 2/2, moist,			
	3		E.O.B. @ 3.0'			

Hole No. H728-HA44

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA44
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0'
8. DEPTH DRILLED INTO ROCK: –
9. TOTAL DEPTH OF HOLE: 5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5'
16. DATE HOLE: STARTED 6-18-95; COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 23.21
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, brown, 10YR 4/3, loose, dry, fine grained, round.			
	1–2	SM	Same as above moist.			
	2–3	SM	Same as above			
	3–4	ML	sandy silt, 10% sand (fine) black, 10YR 2/1, moist, soft.			
	4–5	SM	silty sand, 10% silt, very dark brown, 10YR 2/2, fine grained, round.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA45

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728- Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728- HA45	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 5'
	16. DATE HOLE — STARTED 6-18-95 — COMPLETED 6-18-95
7. THICKNESS OF OVERBURDEN 5.5'	17. ELEVATION TOP OF HOLE 25.25
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 5.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 20% silt, black, 10YR 2/1, loose, moist, fine grained, round.			
	1–2	SM	Sand, <5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained, subround			
	2–3	SM	Sand dark gray, 10YR 4/1, moist, loose, fine grained, round.			
	3–4	SM	Same as above			
	4–5	ML	sandy silt, 10% sand black, 10YR 2/1, moist, soft			
	5–5.5		No Sample			
			E.O.B @ 5.5'			
	6					

Hole No. H728-HA46

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA46
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: HA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5'
16. DATE HOLE: STARTED 6-18-95 | COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 25.69
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 15% silt, black 10YR 2/1, loose, dry, fine grained, round.			
	1	SM	sand, <5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	2	SM	same as above 10YR 3/1, very dark gray			
	3	SM	same as above			
	4	ML	sandy silt, 10% fine sand, black, 10YR 2/1, wet, soft.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA47

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA47
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-18-95; COMPLETED 6-18-95
17. ELEVATION TOP OF HOLE: 25.94
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Silty sand, 10% silt, very dark grayish brown, 10YR 3/2, loose, dry, fine grained, round.			
	1–2	SM	Same as above, moist,			
	2–3	SM	Same as above, wet			
	3		E.O.B @ 3.0'			

Hole No. H728-HA48

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA 48
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5.5'
16. DATE HOLE: STARTED 6-19-95 | COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 37.08
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, yellow, 10YR 7/6, moist, loose, fine grained, round.			
	1–2	SM	sand, very pale brown, 10YR 7/4, moist, loose, very fine grained, round			
	2–3	SM	same as above.			
	3–4	SM	same as above			
	4–5	SM	same as above, wet.			
	5–5.5		No Sample			
			E.O.B. @ 5.5'			

Hole No. H728-HA49

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: UHE
4. HOLE NO. (As shown on drawing title and file number): H728-HA49
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.0
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5'
16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 36.56
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, yellowish brown, 10YR 5/4, loose moist, fine grained, round.			
	1–2	SM	Sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round.			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	Same as above saturated.			
	5		E.O.B @ 5.0'			

Hole No. H728-HA5Ø

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA5Ø	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 4.5'
7. THICKNESS OF OVERBURDEN 4.5'	16. DATE HOLE — STARTED 6-19-95 — COMPLETED 6-19-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 36.16
9. TOTAL DEPTH OF HOLE 4.5	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	1	SM	Sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round.			
	2	SM	Same as above			
	3	SM	same as above, wet, Light gray, 2.5Y7/2			
	4		No Sample			
			E.O.B.@4.5'			

Hole No. H728-HA51

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA51
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 36.17
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, light yellowish brown, 10YR 6/4, loose, moist, fine grained, round.			
	1–2	SM	sand, very pale brown, 10YR 8/2, loose, moist, very fine grained, round.			
	2–3	SM	same as above			
	3–4	SM	same as above, pale brown, 10YR 6/3			
	4		No Sample			
	4.5		E.O.B. @ 4.5'			
	5					

Hole No. H728-HA52

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY UM&E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA52	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 5'
	16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
7. THICKNESS OF OVERBURDEN 5.0'	17. ELEVATION TOP OF HOLE 36.81
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, brown, 10YR 5/3, loose, ~~damp~~ moist, fine grained, round			
	1–2	SM	same as above very pale brown, 10YR 7/3			
	2–3	SM	sand very pale brown, 10YR 8/2, loose, moist, very fine grained, round			
	3–4	SM	Same as above			
	4–5	SM	Same as above saturated.			
	5		E.O.B. @ 5.0'			

Hole No. H728-HA53

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase F	10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
2. LOCATION (Coordinates or Station): Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: M+E	12. MANUFACTURER'S DESIGNATION OF DRILL: NA
4. HOLE NO. (As shown on drawing title and file number): H728-HA53	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER: G. Rowell	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: 5'
7. THICKNESS OF OVERBURDEN: 5.0'	16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
8. DEPTH DRILLED INTO ROCK: —	17. ELEVATION TOP OF HOLE: 37.35
9. TOTAL DEPTH OF HOLE: 5'	18. TOTAL CORE RECOVERY FOR BORING: — %
	19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
	0–1	SM	sand, yellow, 10YR 7/6, loose, ~~damp~~ moist, fine grained round.			
	1–2	SM	sand, <5% silt, very pale brown, 10YR 8/2, loose, moist, very fine grained, round			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	same as above saturated.			
	5		E.O.B @ 5.0'			

Hole No. H728 - HA54

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728 - HA54
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 36.46
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very pale brown, 10YR 7/3, very fine grained, round, loose, moist			
	1–2	SM	Same as above.			
	2–3	SM	Same as above			
	3–4	SM	Same as above, wet.			
	4		No Sample			
			E.O.B @ 4.5'			

Hole No. H728 - HA55

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA55	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 4'
	16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
7. THICKNESS OF OVERBURDEN 4.0	17. ELEVATION TOP OF HOLE 35.97
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 4'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round			
	1–2	sm	Same as above			
	2–3	sm	Same as above			
	3–4	sm	Same as above saturated.			
	4		E.O.B. @ 4.0'			
	5					

Hole No. H728-HA56

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MFE
4. HOLE NO. (As shown on drawing title and file number): H728-HA56
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.0
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 37.74
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Silty sand, 5% silt, brownish yellow, 10YR 6/8, loose, moist, fine grained, round.			
	1–2	SM	Sand, very pale brown, 10YR 8/3, loose, moist, very fine grained, round			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	Same as above. wet			
	5–6	SM	Same as above. Saturated.			
	6		E.O.B @ 6.0'			

Hole No. H728-HA57

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT: Hand Auger / 3"
2. LOCATION (Coordinates or Station): Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: M+E	12. MANUFACTURER'S DESIGNATION OF DRILL: NA
4. HOLE NO. (As shown on drawing title and file number): H728-HA57	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER: G. Rowell	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER: 5.5'
	16. DATE HOLE: STARTED 6-19-95; COMPLETED 6-19-95
	17. ELEVATION TOP OF HOLE: 37.36
7. THICKNESS OF OVERBURDEN: 5.5'	18. TOTAL CORE RECOVERY FOR BORING: — %
8. DEPTH DRILLED INTO ROCK: ~	19. SIGNATURE OF INSPECTOR: G. Rowell
9. TOTAL DEPTH OF HOLE: 5.5'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, <5% silt, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	1–2	SM	Sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round.			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	Same as above wet.			
	5–5.5		No Sample			
			E.O.B @ 5.5'			

Hole No. H728-HA58

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase F
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: WM+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA58
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [x] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5.5'
16. DATE HOLE: STARTED 6-19-95 | COMPLETED 6-19-95
17. ELEVATION TOP OF HOLE: 37.33
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, <5% silt, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	1–2	SM	sand, very pale brown, 10YR 8/2, loose, moist, very fine grained, round.			
	2–3	SM	Same as above.			
	3–4	SM	Same as above			
	4–5	SM	Same as above wet.			
	5–5.5		No SAMPLE			
	5.5		E.O.B @ 5.5'			

Hole No. H728-HA59

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MHE
4. HOLE NO. (As shown on drawing title and file number): H728-HA59
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6'
10. SIZE AND TYPE OF BIT: Hand Auger/3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6'
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 37.32
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
	0–1	SM	sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1–2	SM	Same as above.			
	2–3	SM	Sand, dark yellowish brown, 10YR 4/4, loose, moist, fine grained, round.			
	3–4	SM	Same as above			
	4–5	SM	Same as above			
	5–6	SM	Same as above Saturated.			
	6		E.O.B @ 6.0'			

Hole No. H728-HA6Ø

DRILLING LOG

DIVISION	
INSTALLATION	HAAF
SHEET 1 OF 1 SHEETS	
1. PROJECT	HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station)	Savannah GA
3. DRILLING AGENCY	VHE
4. HOLE NO. (As shown on drawing title and file number)	H728-HA6Ø
5. NAME OF DRILLER	G. Rowell
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	6.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	6'
10. SIZE AND TYPE OF BIT	HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	NA
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED: 6; UNDISTURBED: Ø
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	6'
16. DATE HOLE	STARTED: 6-20-95; COMPLETED: 6-20-95
17. ELEVATION TOP OF HOLE	37.35
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, light yellowish brown, 10YR 6/4, loose, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round			
	3–4	SM	Same as above			
	4–5	SM	Same as above			
	5–6	SM	Same as above saturated			
	6		E.O.B @ 6.0'			

Hole No. H728-HA61

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station) Savannah GA
3. DRILLING AGENCY WHE
4. HOLE NO. (As shown on drawing title and file number) H728-HA61
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 4.5'
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 4.5'
10. SIZE AND TYPE OF BIT Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER 4.5'
16. DATE HOLE — STARTED 6-20-95 — COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE 29.21
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5%-10% silt, gray 10YR 5/1, loose, dry, fine grained, round.			
	1–2	SM	same as above moist.			
	2–3	SM	silty sand, 5% silt, brown, 10YR 5/3, loose, moist, fine grained, round.			
	3–4	SM	same as above wet.			
	4–4.5		No Sample			
			EOB 4.5'			
	5					

Hole No. H728-HA62

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA62
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 5.5'
16. DATE HOLE: STARTED 6-20-95; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 32.06
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, < 5% silt, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	1–2	SM	sand, very pale brown, 10YR 7/3, loose, moist, fine grained, round.			
	2–3	SM	sand, very pale brown, 10YR 8/2, loose, moist, fine grained, round.			
	3–4	SM	same as above			
	4–5	SM	same as above wet.			
	5–5.5		No Sample			
	5.5		E.O.B. 5.5'			
	6					

Hole No. H728 - HA63

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA63
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 34.34
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	sand, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	3–4	SM	sand, very pale brown, 10YR 7/3, loose, moist, fine grained, round			
	4–5	SM	same as above			
	5–6	SM	sand, brown, 10YR 5/3, loose, wet, fine grained, round.			
	6		No Sample			
			E.O.B @ 6.5'			
	7					

Hole No. H728 - HA64

DRILLING LOG

DIVISION

INSTALLATION HAAF

SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station) Savannah GA
3. DRILLING AGENCY M+E
4. HOLE NO. (As shown on drawing title and file number) H728 - HA64
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 3.0
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 3'
10. SIZE AND TYPE OF BIT Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER ?
16. DATE HOLE — STARTED 6-20-95 — COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE 34.95
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	1–2	SM	sand, pale brown, 10YR6/3, loose, moist, fine grained, round.			
	2–3	SM	Same as above			
	3		E.O.B. @ 3.0'			auger refusal at 3'.
	4					

Hole No. H728-HA65

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA65
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 8 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8.5'
16. DATE HOLE: STARTED 6-20-95 / COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 37.52
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, brown, 10YR 5/3, loose, dry, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Same as above			
	3–4	SM	Same as above moist			
	4–5	SM	Same as above			
	5–6	SM	Sand, very pale brown, 10YR 8/3, loose, moist, fine grained, round.			
	6–7	SM	Same as above			
	7					

See page 2

Hole No. H728-HA65

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MTE
4. HOLE NO. (As shown on drawing title and file number): H728-HA65
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.5'
10. SIZE AND TYPE OF BIT: Hand Auger/3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 8 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8.5
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: —
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: —

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	7	SM	sand, very pale brown, 10YR 8/3, loose, moist, fine grained, round.			
	8		No Sample			
			E.O.B. @ 8.5'			
	9					

Hole No. H728-HA66

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MtE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA66	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 2 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 2
7. THICKNESS OF OVERBURDEN 2'	16. DATE HOLE STARTED 6-20-95 COMPLETED 6-20-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 38.72
9. TOTAL DEPTH OF HOLE 2'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		sm	sand, brown, 10YR 4/3, loose, dry, fine grained, round.			
	1	sm	Same as above.			Auger refusal @ 2'
	2		E.O.B @ 2.0'			

Hole No. H728-HA67

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA67
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6' ; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-20-95 ; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 37.42
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, brownish yellow, 10YR 6/6, loose, moist, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	Same as above			
	3–4	SM	sand, very pale brown, 10YR 7/3, loose, moist, very fine grained, round			
	4–5	SM	same as above			
	5–6	SM	Same as above wet.			
	6–6.5		No Sample			
	6.5		E.O.B @ 6.5'			

Hole No. H728-HA68

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA68
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-20-95; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 37.33
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0	SM	sand, brown, 10YR 4/3, loose, moist, fine grained, round.			
	1	SM	Same as above.			
	2	SM	sand, very pale brown, 10YR 8/3, loose, moist, very fine grained, round.			
	3	SM	sand, yellow, 10YR 7/6, loose, moist, fine grained, round.			
	4	SM	sand, very pale brown, 10YR 8/3, loose, moist, very fine grained, round.			
	5	SM	Same as above wet.			
	6		No Sample			
			E.O.B @ 6.5'			
	7					

Hole No. H728-HA69

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY WHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA69	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6.5'
	16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
7. THICKNESS OF OVERBURDEN 6.5'	17. ELEVATION TOP OF HOLE 37.79
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 6.5	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1–2	sm	Same as above			
	2–3	sm	same as above			
	3–4	sm	Sand, very pale brown, 10YR 8/4, loose, moist, fine grained, round.			
	4–5	sm	Same as above.			
	5–6	sm	Same as above wet.			
	6–6.5		No Sample			
	6.5		E.O.B. @ 6.5'			
	7					

Hole No. H728-HA70

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MTE
4. HOLE NO. (As shown on drawing title and file number): H728-HA70
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5
8. DEPTH DRILLED INTO ROCK: ~
9. TOTAL DEPTH OF HOLE: 6.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-21-95; COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 37.71
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1–2	SM	Same as above.			
	2–3	SM	Same as above			
	3–4	SM	Sand, very pale brown, 10YR 8/4, loose, moist, fine grained, round.			
	4–5	SM	Same as above			
	5–6	SM	Same as above wet			
	6–6.5		No Sample			
	6.5–7		E.O.B. @ 6.5'			

Hole No. H728-HA71

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA71
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-21-95 | COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 37.22
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	sand, yellow, 10YR 7/6, loose, moist, fine grained, round.			
	3–4	SM	sand, very pale brown, 10YR 8/4, loose, moist, fine grained, round.			
	4–5	SM	Same as above			
	5–6	SM	Same as above wet.			
	6		No Sample			
			E.O.B @ 6.5'			

Hole No. H728-HA72

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728. Phase I
2. LOCATION (Coordinates or Station) Savannah GA
3. DRILLING AGENCY M+E
4. HOLE NO. (As shown on drawing title and file number) H728-HA72
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 6.5
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 6.5'
10. SIZE AND TYPE OF BIT Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER 6.5'
16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE 37.22
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round			
	1–2	SM	Same as above			
	2–3	SM	Sand, very pale brown, 10YR 7/4, loose, moist, fine grained, round.			
	3–4	SM	Same as above			
	4–5	SM	Same as above			
	5–6	SM	Sand, very pale brown, 10YR 8/4, loose, wet, fine grained, round			
	6		No Sample			
			E.O.B. @ 6.5'			

Hole No. H728 - HA73

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 . Phase I	10. SIZE AND TYPE OF BIT HAnd Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728 - HA73	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6.5'
	16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
7. THICKNESS OF OVERBURDEN 6.5'	17. ELEVATION TOP OF HOLE 37.26
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 6.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	Sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1	sm	Same as above			
	2	sm	Same as above			
	3	sm	~~Sand~~, very pale brown, 10YR 7/4, loose, moist, fine grained, round.			
	4	sm	Sand, very pale brown, 10YR 8/4, loose, moist, fine grained, round.			
	5	sm	Same as above wet.			
	6		No Sample			
			E.O.B.@6.5'			

Hole No. H728-HA74

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MHE
4. HOLE NO. (As shown on drawing title and file number): H728-HA74
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-21-95 | COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 37.26
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
	0–1	SM	Sand, <5% silt, brown, 10YR 5/3, loose, moist, fine grained, round.			
	1–2	SM	sand, brownish yellow 10YR 6/6, loose, moist, fine grained, round.			
	2–3	SM	Same as above			
	3–4	SM	same as above			
	4–5	SM	sand, yellow, 10YR 7/6, loose, moist, fine grained, round,			
	5–6	SM	sand, very pale brown, 10YR 8/2, loose, moist, fine grained, round.			
	6		No sample			
			EOB @ 6.5' (WET)			

Hole No. H728-HA75

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station) Savannah GA
3. DRILLING AGENCY M+E
4. HOLE NO. (As shown on drawing title and file number) H728-HA75
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 7.5'
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 7.5'
10. SIZE AND TYPE OF BIT Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 7 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER 7.5'
16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE 37.89
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	1–2	SM	Sand, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	Sand, yellow 10YR 7/6, loose, moist, fine grained, round.			
	5–6	SM	Sand, very pale brown, 10YR 8/2 loose, moist, fine grained, round.			
	6–7	SM	Sand, very pale brown, 10YR 8/2, loose, moist, fine, grained, round.			

Hole No. H728-HA76

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA76
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.5'
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: HA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 8; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8.5'
16. DATE HOLE: STARTED 6-21-95; COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 37.19
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0	SM	sand, <5% silt, very dark grayish brown, 10YR 3/2, fine grained, round. loose, moist			
	1	SM	Same as above			
	2	SM	Sand, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	3	SM	Same as above			
	4	SM	sand, very pale brown, 10YR 7/3, loose, moist, fine grained, round.			
	5	SM	Same as above			
	6	SM	Sand, light brownish gray 10YR 6/2, loose, moist, fine grained, Round,			
	7					

Hole No. H728-HA76

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 2 OF 2 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MFE
4. HOLE NO. (As shown on drawing title and file number): H728-HA76
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 8; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 8.5'
16. DATE HOLE: STARTED 6-21-55; COMPLETED 6-21-55
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	7	SM	Sand, light brownish gray, 10YR 6/2, loose, wet, fine grained, round.			
	8		E.O.B @ 8.5' No Sample			
			E.O.B @ 8.5'			
	9					

Hole No. H728-HA77

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: ME
4. HOLE NO. (As shown on drawing title and file number): H728-HA77
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.0'
8. DEPTH DRILLED INTO ROCK: –
9. TOTAL DEPTH OF HOLE: 4'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: –
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-21-95; COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 36.59
18. TOTAL CORE RECOVERY FOR BORING: – %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, yellowish brown, 10YR 5/4, loose, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Same as above			
	3–4	SM	silty sand, 5-10% silt, 10YR 2/2, loose, moist, fine grained, round.			Auger refusal at 4'.
	4		E.O.B 4.0'			
	5					

Hole No. H728 - HA78

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728 - HA78	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER 5.5'
	16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
7. THICKNESS OF OVERBURDEN 5.5	17. ELEVATION TOP OF HOLE 36.23
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 5.5	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	sand, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	1–2	sm	sand, light yellowish brown, 10YR 6/4, loose, moist, fine grained, round.			
	2–3	sm	sand, very dark grayish brown, 10YR 3/2, fine grained, round.			3'-5' taken from offset located 1' to north
	3–4	sm	same as above			
	4–5	sm	same as above wet			
	5		~~E.O.B~~ No Sample			
			E.O.B 5.5'			
	6					

Hole No. H728-HA79

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HHAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA79	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6'
	16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
7. THICKNESS OF OVERBURDEN 6.0'	17. ELEVATION TOP OF HOLE 35.91
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 6'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5-10% silt, dark brown, 10YR 4/1, loose, moist, fine grained, round.			
	1–2	SM	sand, light yellowish brown, 10YR 6/4, loose, moist, fine grained, round.			
	2–3	SM	sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	3–4	SM	same as above			
	4–5	SM	same as above			
	5–6	SM	same as above saturated.			
	6		E.O.B 6.0'			

Hole No. H728-HA8Ø

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA8Ø	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6'
7. THICKNESS OF OVERBURDEN 6.0'	16. DATE HOLE — STARTED 6-21-95 — COMPLETED 6-21-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 36.37
9. TOTAL DEPTH OF HOLE 6'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	Sand, dark yellowish brown, 10YR4/4, loose, moist, fine grained, round.			
	1–2	sm	Sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	2–3	sm	Same as above			
	3–4	sm	same as above			
	4–5	sm	same as above			
	5–6	sm	Sand, dark grayish brown 10YR 4/2, loose, wet, fine grained, round.			Slight ODOR
	6		E.O.B @ 6.0'			

Hole No. H728-HA81

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA81
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3'
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-21-95; COMPLETED 6-21-95
17. ELEVATION TOP OF HOLE: 34.71
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, brown, 10YR 5/3, loose, ~~wet~~, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	clayey sand, brown, 10YR 5/3, loose moist, 10% clay, fine grained, round.			
	3–4	SM	Same as above wet			
	4–4.5		No Sample			
			E.O.B. @ 4.5'			
	5					

Hole No. H728-HA82

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT: Hand Auger / 3"
2. LOCATION (Coordinates or Station): Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: M+F	12. MANUFACTURER'S DESIGNATION OF DRILL: NA
4. HOLE NO. (As shown on drawing title and file number): H728-HA82	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2; UNDISTURBED 0
5. NAME OF DRILLER: G. Rowell	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: 2'
	16. DATE HOLE: STARTED 6-21-95; COMPLETED 6-21-95
7. THICKNESS OF OVERBURDEN: 2.0	17. ELEVATION TOP OF HOLE: 32.39
8. DEPTH DRILLED INTO ROCK: —	18. TOTAL CORE RECOVERY FOR BORING: — %
9. TOTAL DEPTH OF HOLE: 2.0	19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Silty sand 5% silt, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	1	SM	same as above wet.			
	2		E.O.B. @ 2.0'			
	3					

Hole No. H728-HA 83

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MHE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA83	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.5'
	16. DATE HOLE — STARTED 6-22-95 — COMPLETED 6-22-95
7. THICKNESS OF OVERBURDEN	17. ELEVATION TOP OF HOLE 33.98
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 3.5'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, <5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	1	SM	Same as above			
	2	SM	Same as above wet.			
	3		E.O.B 3.0'			

Hole No. H728-HA84

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M+E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA84	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 6'
	16. DATE HOLE — STARTED 6-22-95 — COMPLETED 6-22-95
7. THICKNESS OF OVERBURDEN 6.0'	17. ELEVATION TOP OF HOLE 36.62
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 6'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, <5% silt, dark grayish brown, 10YR 4/2, fine grained, round. loose, moist.			
	1–2	SM	sand, light yellowish brown, 10YR 6/4, loose, moist, fine grained, round.			
	2–3	SM	Sand, brown, 10YR 4/3, loose, moist, fine grained, round.			
	3–4	SM	Same as above			
	4–5	SM	Same as above			
	5–6	SM	Same as above saturated			
	6		E.O.B @ 6.0'			

Hole No. H728-HA85

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: VM+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA85
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 6.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 6.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 6.5'
16. DATE HOLE: STARTED 6-22-95 / COMPLETED 6-22-95
17. ELEVATION TOP OF HOLE: 37.43
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	sm	sand, brown, 10YR 4/3, loose moist, fine grained, round. <5% silt			
	1–2	sm	Same as above			
	2–3	sm	Same as above.			
	3–4	sm	Same as above			
	4–5	sm	Same as above			
	5–6	sm	Same as above wet			
	6		E.O.B 6.0'			

Hole No. H728-HA86

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA86
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: NA
16. DATE HOLE: STARTED 6-22-95 | COMPLETED 6-22-95
17. ELEVATION TOP OF HOLE: 37.54
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, 65% silt, brown, 10YR 4/3, loose, moist, fine grained, round			
	1–2	SM	Same as above			
	2–3	SM	Same as above			
	3–4	SM	same as above			
	4–4.5		No sample			Auger refusal at 4.5'
			E.O.B. 4.5'			

Hole No. H728- HA87

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728- HA87
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 5.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 5.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 15; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-22-95; COMPLETED 6-22-95
17. ELEVATION TOP OF HOLE: 38.49
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	1–2	SM	sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	2–3	SM	Same as above			
	3–4	SM	Same as above			
	4–5	SM	sand, yellowish brown, 10YR 5/6, loose, moist, fine grained, round.			
	5		No sample			Auger refusal at 5.5'
			E.O.B. 5.5'			
	6					

Hole No. H728-HA88

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA88
5. NAME OF DRILLER: G. Howell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 2'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 2'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-22-95 | COMPLETED 6-22-95
17. ELEVATION TOP OF HOLE: 38.32
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Bowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			ODOR
	1	SM	Same as above			Auger refusal at 2' ODOR
	2		E.O.B @ 2.0'			

Hole No. H728-HA89

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY IMTF	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA89	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 2 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 2'
7. THICKNESS OF OVERBURDEN 2'	16. DATE HOLE — STARTED ~~6-28-98~~ — COMPLETED 6-22-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 38.36
9. TOTAL DEPTH OF HOLE 2'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, ~~very dark grayish~~ GR 6-22-95 brown, 10YR 4/3, loose, moist, fine grained, round			ODOR
	1	SM	Sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			Auger refusal at 2' ODOR
	2		E.O.B. 2.0'			

Hole No. H728-HA90

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station) Savannah, GA
3. DRILLING AGENCY M+E
4. HOLE NO. (As shown on drawing title and file number) H728-HA90
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 5.5'
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 5.5'
10. SIZE AND TYPE OF BIT Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER 5.5'
16. DATE HOLE — STARTED 6-27-95 — COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE 38.35
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very dark grayish brown, loose, dry, fine grained, round.			
	1–2	SM	Same as above moist.			
	2–3	SM	same as above			
	3–4	SM	same as above			
	4–5	SM	same as above wet.			
	5–5.5		No Sample			

EOB @ 5.5'

Hole No. H728-HA91

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 - Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M&E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA91	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 2 — UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
	16. DATE HOLE — STARTED 6-27-95 — COMPLETED 6-27-95
	17. ELEVATION TOP OF HOLE 38.39
7. THICKNESS OF OVERBURDEN 2'	18. TOTAL CORE RECOVERY FOR BORING — %
8. DEPTH DRILLED INTO ROCK —	19. SIGNATURE OF INSPECTOR G. Rowell
9. TOTAL DEPTH OF HOLE 2'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, very dark grayish brown, 10YR 3/2, loose, dry, fine grained, round.			
	1–2	SM	Same as above moist			Auger refusal at 2'
	2		EOB @ 2.0'			

Hole No. H728-HA92

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728. Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA92
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 1'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 1'
10. SIZE AND TYPE OF BIT: Hand Auger/3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-27-95; COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 38.90
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, light yellowish brown, 10YR6/4, loose, moist, fine grained, round.			Auger refusal 1'
	1		EOB @ 1.0'			

Hole No. H728-HA93

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: MJE
4. HOLE NO. (As shown on drawing title and file number): H728-HA93
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4'
16. DATE HOLE: STARTED 6-27-95; COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 37.70
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very dark grayish brown, 10YR3/2, loose, moist, fine grained, round.			
	1–2	SM	Same as above			
	2–3	SM	Same as above			
	3–4	SM	Same as above wet.			
	4		EOB @ 4.0'			

Hole No. H728-HA 94

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA 94
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5'
16. DATE HOLE: STARTED 6-27-95 | COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 37.70
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	same as above, wet			
	3–3.5		No sample			
			EOB @ 3.5'			

Hole No. H728-HA95

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728- Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M&E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA95	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 4'
	16. DATE HOLE — STARTED 6-27-95 — COMPLETED 6-27-95
7. THICKNESS OF OVERBURDEN 4'	17. ELEVATION TOP OF HOLE 37.80
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 4'	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 15% silt, dark grayish brown, 10YR 4/2, loose, dry, fine grained, round.			
	1	SM	sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	2	SM	same as above			
	3	SM	same as above wet			
	4		EOB @ 4.0'			

Hole No. H728-HA96

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+G
4. HOLE NO. (As shown on drawing title and file number): H728-HA96
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5'
16. DATE HOLE: STARTED 6-27-95; COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 41.06
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 15% silt, dark grayish brown, 10YR 4/2, loose, dry, fine grained, round.			
	1–2	SM	sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	2–3	SM	Same as above wet.			
	3–3.5		No Sample			
			EOB @ 3.5'			

Hole No. H728-HA97

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station) Savannah, GA
3. DRILLING AGENCY M&E
4. HOLE NO. (As shown on drawing title and file number) H728-HA97
5. NAME OF DRILLER G. Rowell
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ________ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 4.5'
8. DEPTH DRILLED INTO ROCK —
9. TOTAL DEPTH OF HOLE 4.5'
10. SIZE AND TYPE OF BIT Hand Auger /3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL N.A
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED
14. TOTAL NUMBER CORE BOXES —
15. ELEVATION GROUND WATER 4.5'
16. DATE HOLE — STARTED 6-27-95 — COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE 37.87
18. TOTAL CORE RECOVERY FOR BORING — %
19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 15% silt, dark grayish brown, 10YR 4/2, loose, dry, fine grained, round.			
	1	SM	Sand, dark grayish brown, 10YR4/2, loose, moist, fine grained, round.			
	2	SM	Same as above			
	3	SM	sand, dark grayish brown, 10YR 4/2 / wet, loose, fine grained, round.			
	4		No Sample			
			EOB @ 4.5'			

Hole No. H728-HA98

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: MHE
4. HOLE NO. (As shown on drawing title and file number): H728-HA98
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-27-95; COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 38.01
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, very dark grayish brown, 10YR 3/2, loose, moist, fine grained, round.			
	1	SM	Same as above			
	2	SM	Same as above			
	3	SM	Sand, dark grayish brown, 10YR 4/2, loose, ~~moist~~ wet, fine grained, round.			
	4		No Sample			
			EOB @ 4.5'			

Hole No. H728-HA99

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: MHG
4. HOLE NO. (As shown on drawing title and file number): H728-HA99
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: Hand Auger/3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 / UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-27-95 / COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 38.03
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, dark grayish brown, 10YR 4/2, loose, moist, fine grained, round.			
	1–2	SM	Same as above.			
	2–3	SM	Same as above.			
	3–4	SM	Sand, brown, 10YR 5/3, loose, wet, fine grained, round.			
	4–4.5		No sample			
			EOB @ 4.5'			

Hole No. H728-HA100

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728-HA100
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 4.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 4.5'
16. DATE HOLE: STARTED 6-27-95 | COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 37.82
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Silty sand, 15% silt, dark grayish brown, 10YR4/2, loose, dry, fine grained, round.			
	1–2	SM	Sand, very dark grayish brown, 10YR3/2, loose, moist, fine grained, round.			
	2–3	SM	Same as above.			
	3–4	SM	Same as above wet.			
	4–4.5		No sample			
			EOB @ 4.5'			

Hole No. H728-HA 1Ø1

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728-Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA 1Ø1
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: ?
16. DATE HOLE: STARTED 6-27-95; COMPLETED 6-27-95
17. ELEVATION TOP OF HOLE: 37.85
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, brown, 10YR 4/3, loose moist, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	same as above			Auger refusal @ 3.0'
	3		EOB @ 3.0'			

Hole No. H728-HA 1Ø2

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728 · Phase I	10. SIZE AND TYPE OF BIT Hand Auger / 3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY M&E	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA 1Ø2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED: 1 — UNDISTURBED: Ø
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ?
	16. DATE HOLE — STARTED: 6-27-95 — COMPLETED: 6-27-95
	17. ELEVATION TOP OF HOLE 37.84
7. THICKNESS OF OVERBURDEN 1.5'	18. TOTAL CORE RECOVERY FOR BORING — %
8. DEPTH DRILLED INTO ROCK —	19. SIGNATURE OF INSPECTOR G. Rowell
9. TOTAL DEPTH OF HOLE 1.5'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	Sand, brown, 10YR 4/3, loose, moist, fine grained, round.			
	1		No sample			Auger refusal @ 1.5'
			EOB at 1.5'			

Hole No. H728-HA103

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF Building 728-Phase I	10. SIZE AND TYPE OF BIT Hand Auger 3"
2. LOCATION (Coordinates or Station) Savannah, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY MYE	12. MANUFACTURER'S DESIGNATION OF DRILL NA
4. HOLE NO. (As shown on drawing title and file number) H728-HA103	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5. NAME OF DRILLER G. Rowell	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 3.5'
7. THICKNESS OF OVERBURDEN 3.5'	16. DATE HOLE — STARTED 6-28-95 — COMPLETED 6-28-95
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE 37.53
9. TOTAL DEPTH OF HOLE 3.5'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, brown, 10YR 4/3, loose moist, fine grained, round.			
	1	SM	Same as above			
	2	SM	silty sand, 20-25% silt, low plasticity, wet, fine grained, round. 10YR 2/1, black			
	3		No Sample			
			EOB @ 3.5'			

Hole No. H728-HA1Ø4

DRILLING LOG

DIVISION:

INSTALLATION: HAAF

SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA1Ø4
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5'
10. SIZE AND TYPE OF BIT: Hand Auger 13"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5'
16. DATE HOLE: STARTED 6-28-95; COMPLETED 6-28-95
17. ELEVATION TOP OF HOLE: 37.41
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	Sand, brown, 10YR 4/3, loose, moist, fine grained, round.			
	1–2	SM	Same as above.			
	2–3	SM	Silty sand, 20-25% silt, 10YR 3/1, low plasticity, wet, fine grained, round.			
	3–3.5		No sample			
			EOB @ 3.5'			

HAND AUGERS

105 - 121 NOT COLLECTED

Hole No. H728-HA122

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah, GA
3. DRILLING AGENCY: M&E
4. HOLE NO. (As shown on drawing title and file number): H728- HA122
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3.5'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3.5'
16. DATE HOLE: STARTED 6-20-95; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 19.00
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5% silt, dark grayish brown, 10YR 4/2, loose, moist, fine grained round.			
	1–2	SM	silty sand, 10% silt, very dark brown, 10YR 2/2, loose, moist, fine grained, round.			ODOR
	2–3	SM	sand, gray, 10YR 5/1, loose, moist, fine grained, sub round.			ODOR
	3		No SAMPLE			
	3.5		E.O.B 3.5'			
	4					

Hole No. H728-HA123

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MTE
4. HOLE NO. (As shown on drawing title and file number): H728-HA122
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: –
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: –
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 19.25
18. TOTAL CORE RECOVERY FOR BORING: – %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	sand, very pale brown, 10YR 7/4, loose, wet, medium grained, round.			
	1	SM	same as above, 10YR 6/6, brownish yellow.			
	2	SM	sand, gray, 10YR 5/1, loose wet, medium grained, round.			
	3		E.O.B @ 3.0'			

Hole No. H728-HA124

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: VHE
4. HOLE NO. (As shown on drawing title and file number): H728-HA124
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [x] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-20-95; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 19.45
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	silty sand, 5-10% silt, dark grayish brown, 10YR 4/2, loose, wet, fine grained, subround			
	1–2	SM	Same as above			ODOR
	2–3	SM	Same as above			ODOR
	3		E.O.B @ 3.0'			

Hole No. H728-H125

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728- Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MtE
4. HOLE NO. (As shown on drawing title and file number): H728-H125
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3
10. SIZE AND TYPE OF BIT: HAnd Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 20.20
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		sm	sand, very pale brown, 10YR 7/4, loose, wet, medium grained, round.			
	1	sm	silty sand, 5%-10% silt, dark gray, 10YR 4/1, loose wet, fine grained, round.			ODOR
	2	sm	Same as above			ODOR
	3		E.O.B. @ 3.01			

Hole No. H728-HA126

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728 - Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: M+E
4. HOLE NO. (As shown on drawing title and file number): H728-HA126
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 3'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 3'
16. DATE HOLE: STARTED 6-20-95; COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 20.16
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1	SM	sand, grayish brown, 10YR 5/2, loose, wet, fine grained, round.			
	1–2	SM	same as above			
	2–3	SM	silty sand, 15% silt, very dark brown, 10YR 2/2, loose, wet, fine grained, round.			ODOR
	3		E.O.B. @ 3.0'			
	4					

Hole No. H728-HA127

DRILLING LOG	DIVISION	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Building 728. Phase I
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: MAE
4. HOLE NO. (As shown on drawing title and file number): H728-H127
5. NAME OF DRILLER: G. Rowell
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 2.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 2'
10. SIZE AND TYPE OF BIT: Hand Auger / 3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: NA
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 2'
16. DATE HOLE: STARTED 6-20-95 | COMPLETED 6-20-95
17. ELEVATION TOP OF HOLE: 18.74
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		SM	silty sand, 5% silt, very dark grayish brown, 10YR 3/2, loose, wet, fine grained, round.			
	1	SM	sand, dark grayish brown, 10YR 4/2, loose, wet, fine grained, round.			
	2		E.O.B @ 2.0'			

Hole No. H728-SB1

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB1
5. NAME OF DRILLER: Tom Finkenbinder
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 1 Aug 95; COMPLETED 1 Aug 95
17. ELEVATION TOP OF HOLE: 19.5
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR:

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		Grassy soil and organic dirt			Post hole to 3ft to clear utilities, then auger.
	1		Fine sand, trace silt, SM 10YR 5/1, secondary color 10YR3/1, loose to firm, well sorted, subangular, moist near bottom	—	#1	Headspace = 0 ppm
	3		Sand as above, sample saturated. 8" wood fragment at bottom of spoon.	18/24	▽ Sample wet #2	2-2-4-5 Headspace 0.8 ppm
	5		Sand, very fine to fine, trace silt, SM, 2.5Y 6.5/1, moderately firm, well sorted, subangular to subround.	22/24	#3	6-11-21-23 Headspace Not Collected (NC)
	7		12" sand as above. 8" sand, very fine to fine, trace silt, SM, 2.5Y5.5/1, firm, well sorted, subangular.	20/24	#4	9-12-21-23 NC
	9		Sand as above.	20/24	#5	5-6-7-16 NC
	11		Sand as above.	22/24	#6	8-8-13-20 NC Auger to 14'
	13			—	—	EOB@14'
	14					

Hole No. H728-SB2

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT Hunter AAF
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY PSI
4. HOLE NO. (As shown on drawing title and file number) H728-SB2
5. NAME OF DRILLER Tom Finkenbinder
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 14'
8. DEPTH DRILLED INTO ROCK 0'
9. TOTAL DEPTH OF HOLE 14'
10. SIZE AND TYPE OF BIT 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE — STARTED 1 Aug 95 — COMPLETED 1 Aug 95
17. ELEVATION TOP OF HOLE 20.8
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Grass, organic dirt.			Post hole dig
	1		Fine sand, trace silt, Brn 7.5YR 3/2.5, loose, well sorted, subangular to subround, Sample dry, 10% gravel (1-3cm)	N/A	#1	Headspace = 0ppm
	3		Sand as above, with 10-20% gravel (2-4cm) at bottom of spoon.	10/24	#2	Begin auger and split spoon (3") 3-2-2-2 Headspace = 0ppm
	5		Fine sand, trace silt, Brn 7.5YR 3.5/2, moderately loose to firm, well sorted, subangular. Top 8" dry. Some dark staining nr ∇.	22/24	#3 ∇ sample wet	2-4-6-4 Headspace = 0ppm Sample wet @ 6'; from dry to saturated over 6" transition.
	7		Sand, very fine to fine, trace silt, firm, well sorted, subang. 6" Tan (10YR 7/2) 10" same mtl dk brn 5YR 3/2.	16/24	#4	4-2-4-7. Use 2inch spoon Headspace Not Collected (NC)
	9		Very fine sand, trace silt, firm, well sorted, subangular to subround. 5Y 7/2. Some dark stains near top of sample. No odor.	12/24	#5	1-2-5-7 NC OVA (stain) = 0.0ppm
	11		Very fine sand, 10% silt, SM, 5Y 7/2.5 firm, well sorted, subangular, no staining.	20/24	#6	3-8-12-13 NC Auger to 14'
	13					EOB @ 14'
	14					

Hole No. H 728 -SB3

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Hunter 1
2. LOCATION (Coordinates or Station)	BLDG 728
3. DRILLING AGENCY	PST
4. HOLE NO. (As shown on drawing title and file number)	H728-SB3
5. NAME OF DRILLER	Mike Gribble
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	13.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	13.0'
10. SIZE AND TYPE OF BIT	8 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	MSL
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6; UNDISTURBED
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	-
16. DATE HOLE	STARTED 8/1/95; COMPLETED 8/1/95
17. ELEVATION TOP OF HOLE	21.1
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g — Blows	Headspace OVA, ppm
	0–3 (2)		SAND: fine-med, Black 7.5YR 2.5/1, dry, well sorted, subang., 10% silt. (SM)	post hole to 3'	1	- None -	0
	3–5 (4)		: as above, Lt Br 7.5YR 6/3 + Br 7/4, wet at bottom, v. loose-firm, tr. silt. (SM)	14 58	2	4-8-11-20 ▽ initial wet sample	0 LAB @ 10:55
	5–7 (6)		: as above, Br 10YR 5/3, v. loose-v. firm, wet. tr. mica, (SM)	20 83	3	4-11-19-23 ▽ 6.10' bgs @ 19 hrs	NC not collected
	7–9 (8)		: as above, few mica -10%, loose-firm, wet. (SM)	21 88	4	10-15-16-17	NC
	9–11 (10)		: fine-med, <5% silt, wet, v. loose-firm, 10% mica, tr. blk minerals, Lt. Br. 6Y 2.5Y 6/2. (SM)	100	5	3-4-7-12	NC
	11–13 (12)		: as above. very clean, tr. glauconite!, tr. mica, tr. ferromags, loose-firm, wet	100	6	5-7-11-15	NC
	13 (14)		E.O.B @ 13.0'				
	16						
	18						
	20						

Hole No. H728-SB4

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB4
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: [x] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6 1/4 ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 2 Aug 95 | COMPLETED 2 Aug 95
17. ELEVATION TOP OF HOLE: 19.1
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: Robert ... [illegible]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		Grassy soil and organic dirt			Post hole dig
	1–3		Fine sand, 10% silt, SM, 10YR3/1, loose to firm, well sorted, subangular. Sample is moist.	2 PAL	#1	Headspace = 32 ppm
	3–5		Fine sand, 10% silt, increasing silt to 30% in bottom 6" of spoon, 2.5Y 4.5/1, firm, moderately sorted, subangular. Sample is moist	22/24	#2	Begin 3" split spoon 4-6-5-7 Headspace = 380 ppm
	5–7		10" Fine sand, 10% silt, SM 2.5Y 5/3, loose to firm, well sorted, subangular to subround 8" VF sand, 20% silt, 2.5Y3/1 SM, well sorted, subang to subro, wet	14/24	#3 ▽ sample wet	4-4-5-6 Headspace = 32 ppm
	7–9		Fine sand, trace silt, SM 10YR 6/1, mod firm, well sorted, subround, wet.	24/24	#4	5-8-9-11 Headspace Not collected (NC)
	9–11		Fine sand, trace silt, SM 7.5YR 5.5/1, loose to firm, well sorted, subround, wet.	24/24	#5	5-8-11-15 NC
	11–13		Sand as above.	20/24	#6	8-11-5-25 NC
	13–14		as above	—	—	Auger to 14'
	14					EOB @ 14'

Hole No. H728-SB5

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): HAAF Bldg 728
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB5
5. NAME OF DRILLER: Mike Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED —
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER —
16. DATE HOLE: STARTED 8/1/95 | COMPLETED 8/1/95
17. ELEVATION TOP OF HOLE: 20.7
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: D. Hengle

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Blows — HS OVA/ppm.
	0–2		SAND: fine-med; Dr. Gr. Br. 10YR 4/2, tr. granules, dry. 20% silt. Subang, well sorted. (SW)	Post hole to 3'	1	- None - 0
	4		: as above - to Lt Yell Br 10YR 6/4, moist, v. loose-loose., tr. gravel, 10% silt. (SW)	18 67	2	4-7-9-8 0
	6		: v. DR GRBR 2.5Y 3/2, tr. ferromagn min., tr. remnant banding. wet. (SW)	? 38	3	4-7-50/6 ▽ initial wet sample; Obstruction at 5'. Collected NC
	8		: fine-med; Gray 2.5Y 6/1, tr. mica, clayey 5-40%, thin laminae of clay. wet. v. loose-firm. (SC)	69	4	OFFSET 15' SOUTH; 4-4-7-20 NC
	10		: as above: 2" or/gr clayey layer in center. (SC)	58	5	15-17-13-13 NC
	12		: as above. grading to DR.BL GY 4/1 10B GLEY, Mica thin laminae.	46	6	4-5-6-5 NC
						Augered
	14		E.O.B. @ 14.0'			Water Level 6.20 ft bgs @ 16 hr.
	16					
	18					
	20					

Hole No. H728-SB6

DRILLING LOG	DIVISION So Atl.	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT HAAP B728	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) Sav. GA B. 728	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D-120
4. HOLE NO. (As shown on drawing title and file number) H728-SB6	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED
5. NAME OF DRILLER Mike Gribble	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 8/2/95; COMPLETED 8/2/95
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 20.4
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphr

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2.5		SAND: f-med gr, Br-yell 10YR6/6 to DkBr-3/3 clay 5-25%, well sorted, subang, tr. mica. Petroleum odor. dry-damp (SC)	Post hole, to 3'	1	BLOWS: None - ; HS, OVA, ppm: 1000+
	2.5–4.5		as above 2.5Y3/1 v. Dk Gr. wet at bottom, v.loose-loose. odor (SC)	17 / 71	2	3-3-5-5; ▽ initial wet spoon; 1000+ Lab Sample
	4.5–6.5		: f-med gr, v dk Gr. 2.5Y3/1, wet, clayey-10-30%, tr gravel at bottom, v.loose. (SC) * Augers walking *	15 / 63	3	4-4-5 9/5 (rock); NC; OFFSET 3' East
	6.5–8.5		: as above. = 3" yellow 10YR 7/6 med-coarse, 10% clay. Br-5/3, mostly med sand, clay 10-30%, tr. granules, v.loose, wet.	71	4	4-2-2-3; NC
	8.5–10.5		: as above, tr. thin laminae clay, gravel/concrete at bottom, v.loose. (SC)	10 / 58	5	4-15-5-4; NC
	10.5–12.5		as above., clayey 10-30%, v. loose. = 2" v. clayey layer, gray. (SC)	71	6	4-3-2-2; NC
	12.5–14					Auger

E.O.B. @ 14.0'

Hole No. H728-SB7

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HUNTER AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY:
4. HOLE NO. (As shown on drawing title and file number): H728-SB7
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 2Aug95 | COMPLETED 2Aug95
17. ELEVATION TOP OF HOLE: 19.6
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Grass			Post-hole dig to 3'
	1		Fine sand, 10% silt, bn 10YR5/3, well sorted, subangular, moist, loose to firm	—	#1	HEADSPACE = 3.0 ppm
	3	10" / 14"	Fine sand, silt 10% decreasing to trace, sm. Black 10YR2/1 firm, slightly moist, well ~~rounded~~ sorted, subangular ~~very pale brown~~ RAL lt grey 10YR7/2	24/24	#2 ▽ sample wet	Begin 3" split spoon 5-8-11-13 HEADSPACE = 540 ppm
	5		Fine sand, silt 10%, sm. Silt decreasing to trace at bot of spoon. Black 10YR2/1 to 10YR6/2, firm, well sorted, subangular, sample wet	24/24	#3	3-10-20-28 HEADSPACE = 98 ppm
	7		Fine sand, trace silt, sm. 2.5Y7/1 firm, well sorted, subangular.	20/24	#4	Begin 2" spoon 5-17-15-13 Headspace Not Collected (NC)
	9		Fine sand, trace silt, sm. ~~10YR~~ RAL 10YR5.5/1, firm, well sorted, subangular.	22/24	#5	~~5~~8-10-12-12 RAL NC
	11		Sand as above.	22/24	#6	7-10-14-20 NC
	13		as above	—	—	Auger to 14' EOB @ 14'
	14					

Hole No. H728-SB8

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF Bldg 728
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB8
5. NAME OF DRILLER: Mike Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6¼" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 8/2/95 | COMPLETED 8/2/95
17. ELEVATION TOP OF HOLE: 19.6
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphs

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
	2		Sand: f-med gr. Dk Br 7.5YR 3/2, clay 5-25%, dry, tr. mica. Petrol. odor. some clay balls. subang, well sorted (SC)	Post hole to 3'	1	Blows: -None- ; HS OVA, ppm: 500
	4		: as above. v.loose, wet at bottom lighter gray color banding. (SC)	21 88	2	4-3-4-4 ; ⊻ initial wet sample ; 1000+ Lab Sample
	6		: as above. Dk Yell Br - 10YR 3/3, wet v.loose. clay 10%, tr. mica. strong HC odor (SC)	100	3	2-1-2-2 ; NC not collected
	8		as above; grading to GrGy 6/10BG GLEY, oil staining, clay 10%, tr. green (SC) clay thin laminae	100	4	1-1-3-4 ; NC
	10		: med-coarse, GrGy 6/10BG GLEY clay 5% also in thin laminae, v.loose loose, no stains, wet. (SC) tr. mica.	18 75	5	4-5-7-10 ; NC
	12		: as above.	71	6	4-7-10-12 ; NC
	14					↕ Auger
			E.O.B. 14.0'			
	16					
	18					
	20					

Hole No. H728 - SB9

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT Hunter AAF	10. SIZE AND TYPE OF BIT 6¼ ID HSA
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Dietrich D120
4. HOLE NO. (As shown on drawing title and file number) H728-SB9	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
5. NAME OF DRILLER T. Flakenbinder	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 3 Aug 95 — COMPLETED 3 Aug 95
7. THICKNESS OF OVERBURDEN 14'	17. ELEVATION TOP OF HOLE 20.5
8. DEPTH DRILLED INTO ROCK 0'	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 14'	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Grassy soil and organic dirt			Posthole dig to 3 feet
	1		Fine sand, trace silt, SM, light yel-brn 10YR 5.5/3, loose, well sorted, subangular.	N/A	#1	HEADSPACE = 3.2 ppm
	3		Clayey silty sand, mottled appearance, brn 7.5YR 5.5/4 and grey 7.5YR 5.5/1, 20% silt, 10% clay, moderately to poorly sorted, subangular, dry, root mtl SC	10/24	#2	Begin 2" split spoon 3-5-6-9 HEADSPACE = 2.6
	5		Clayey sand, fine, trace to 10% silt, brn 7.5YR5/8 and minor grey 7.5YR 5/1, poorly sorted, dense, subangular, wet at bottom of spoon, SC	8/24	#3 ▽ sample wet	4-4-4-5 HEADSPACE = 2.2
	7		2" wet clayey sand as above 18" fine sand, trace silt, SM 10YR6.5/1, firm, well sorted, subangular.	20/24	#4	11-17-22-17 Headspace Not Collected (NC)
	9		Fine sand as above, 10YR7/1	22/24	#5	3-3-4-5 NC
	11		Fine sand as above, 2.5Y5/1. 2" interval with increased clay content (up to 30%), plastic.	22/24	#6	2-8-10-15 NC
	13		as above	—	—	Auger to 14' EOB @ 14'

Hole No. H728-SB10

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HUNTER AAF
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB10 ~~B~~ RAL
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6 1/4 ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 3 Aug 95; COMPLETED 8/3/95
17. ELEVATION TOP OF HOLE: 19.4
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: Robert A. L[illegible]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Grassy soil and organic dirt			Posthole dig to 3'
	1	silt ~~clay~~ RAL	Fine sand, ~~little~~ trace silt, 7.5YR 6.5/1 mottled with fine sand and ~~silt~~ (30%) 7.5YR 6/8, SM, moderately sorted, subangular, dry	N/A	#1	Headspace = 0 ppm
	3		8" as above 12" fine sand, trace silt, SM, 7.5YR 6.5/1, well sorted, subang, dry, loose	20/24	#2	Begin 2" split spoon 5-3-5-5 Headspace = 0 ppm
	5		Sand as above, sample moist	6/24	#3 sample wet ▽	5-6-6-8 Headspace = 0.0 ppm
	7		Fine sand, trace silt, SM, 7.5YR 7/1, well sorted, subangular sample saturated. Trace ~~bk~~ mineral grains in sand.	20.5/24	#4	5-10-6-8 Head space Not Collected (NC)
	9		Fine sand, trace silt, SM 7.5YR 5/1, well sorted, subangular, firm.	20/24	#5	5-5-9-8 NC
	11		Sand as above	20/24	#6	5-9-15-15 NC
	13		as above	—	—	Auger to 14' EOB @ 14'
	14					

Hole No. H 728 - SB 11

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H 728 - SB 11
5. NAME OF DRILLER: Mike Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 8/3/95 | COMPLETED 8/3/95
17. ELEVATION TOP OF HOLE: 19.3
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–3	ASPH	SAND: f-med gr, v. DK GR BR 10YR3/2 silty 25%, dry, well sorted, subang. tr. organics. (SM)	Post hole to 3'	1	Blows: -None- ; OVA ppm HS: 0
	3–5		: Dk Yell Br 10YR 3/4 + St. Br 7.5YR 7/6 mottling, clay 10-40%, moist, v. loose-loose. tr. mica. (SC)	21 / 88	2	3-4-5-8 ; 0
	5–7		as above: grading to Lt Br Gy 10YR 6/2 30-40% clay, moist, v. loose-loose, wet at very bottom (SC)	17 / 71	3	2-4-6-9 ; 0 ; ▽ initial wet sample.
	7–9		As above, grading to mostly med. sand Lt. Gr 10YR 7/1, clay 5-15%, wet, v. loose-loose, well sorted, subang. (SC)	100	4	3-3-6-7 ; NC
	9–11		: med-coarse, 10YR 5/2 GR Br. clay 10% tr. ferromags, wet, loose-firm. tr. mica. tr. clay laminae (thin)	14 / 58	5	8-12-10-10 ; NC
	11–13		: as above, v. loose-loose. 3" layer of sandy clay Yell Br 10YR 5/8, very plastic - color change 2.5YR 5/2 Gr Br.	17 / 71	6	2-3-5-8 ; NC
	13–14					Auger

E.O.B. @ 14.0'

Depth scale: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Hole No. H728-SB12

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF SHEETS

1. PROJECT: Hunter AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB12
5. NAME OF DRILLER: Tom Finkenbinder
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 4Aug95 | COMPLETED 4Aug95
17. ELEVATION TOP OF HOLE: 18.8
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		Grassy soil over sandy gravel			Begin posthole dig to 3'
	1–3		Fine sand, trace silt, SM, brn 10YR6/4, some darker staining, fuel oil odor, gravel ~~at~~ top of interval, 30%, poorly to well sorted, subangular, moist	—	#1	Headspace >1000ppm
	3–5		Fine sand, trace silt, SM, grey 7.5YR5.5/1, minor darker staining, fuel oil odor, well sorted, subangular, moist	18/24 smple wet ▽	#2	Begin 2" split spoon 13-13-15-18 Headspace >1000ppm
	5–7		Fine sand, 10% silt, SM, grey 2.5Y6.5/1, ~~some~~ dark staining in top of spoon 2.5Y3.5/1, fuel oil odor, well sorted, subangular, saturated.	20/24	#3	15-17-11-10 Headspace Not Collected (NC)
	7–9		Fine sand, trace silt, SM, grey 2.5Y6.5/1, no staining, faint f.o. odor, well sorted, subangular, 4" color change to 7.5YR5/1 at bottom of spoon.	20/24	#4	12-13-12-18 NC
	9–11		Sand as above, 7.5YR5/1, minor f.o. odor.	16/24	#5	5-7-13-14 NC
	11–13		Sand as above, no f.o. odor	22/24	#6	8-11-20-23 NC
	13–14		as above	—	—	Auger to 14' EOB@14'

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Hole No. H728-SB13

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) Savannah GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D120
4. HOLE NO. (As shown on drawing title and file number) H728-SB13	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED
5. NAME OF DRILLER M. Gribble	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 8/3/95 — COMPLETED 8/3/95
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 18.7
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphus

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–3		SAND: f-med gr, Dk GR 10YR4/1, dry 20% silt, v.loose, well sorted, subang. (SM)	Post hole to 3'	1	Blows — None — Could not use hammer – overhead lines, push spoons. HS OVA, ppm 0
	3–5		CLAY: St. Br 7.5YR 5/6, moist, plastic, 30% sand 16 / SAND: f-med; Lt Br GR 10YR6/2, silt 10%, moist, well sorted, tr. orange mottling (SM SW)	67	2	0
	5–7		: mostly med gr, white 10YR 8/1, v. little fines 5%, well sorted, moist, tr. ferromag minerals, tr. clay balls 2 mm. (SW)	58	3	Lab sample 0
	7–9		: as above, saturated	70	4	⊻ initial wet spoon. NC not collected
	9–11		CLAY: sandy 40% Yell Br 10YR 5/8; moist, plastic (CL) / SAND: mostly med gr, Dk gr. 2.5Y4/1, 5% fines, tr. mica, wet, (SW) well sorted, subang.	50	5	NC
	11–13		: as above, fairly uniform.	75	6	NC
	13–14					Auger

E.O.B. 14.0'

Hole No. H728-SB14

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): Savannah GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB14
5. NAME OF DRILLER: Mike Gribble
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK: ∅
9. TOTAL DEPTH OF HOLE
10. SIZE AND TYPE OF BIT: 6¼" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 8/4/95 | COMPLETED 8/4/95
17. ELEVATION TOP OF HOLE: 19.0
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND - mostly med gr, Dk Gr 10YR 4/1, clayey 20%, moist, well sorted, subang (SC)	Post hole to 3'	1	Blows: No blows - can't use hammer due to Overhead lines. OVA, ppm Headspace: 0
	4		: as above, clay 30-40%, moist. (SC)	100	2	0
	6		: as above, (SC) - Gray 10YR 5/1 to Lt. Gr 7/1 - less clay 10-15%, wet at bottom	50	3	≡ initial wet sample. Lab Sample 0
	8		Sand: mostly med gr, Pinkish Gr 7.5YR 6/2, wet, tr. clay 5%, tr. ferromagmin[e]rals, wellsorted, subang, (SW)	63	4	Not Collected
	10		: Bluish Gr - GLEY 5/10B, med. gr, clay balls 2-3mm, thin laminae, tr. mica, 5-15% clay. (SW-SC)	50	5	NC
	12		4" Dk Red Br 5YR 3/2, plastic, 20% sand moist. (CL) Sand; BlueGr as above, little fines 5% (SW)	50	6	NC
	14					Augor

E.O.B. @ 14.0'

16

18

20

Hole No. H728-SB15

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB15
5. NAME OF DRILLER: Tom Finkenbinder
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 10" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0 5 TAL
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 4 Aug 95; COMPLETED 4 Aug 95
17. ELEVATION TOP OF HOLE: 37.5
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1.5'		Concrete			Concrete core
	1.5'–3		Fine sand, trace silt, SM lt.brn 2.5Y5.5/6, loose to firm, well sorted, subangular, slightly moist	N/A	#1	Posthole dig to 3' Headspace = 0ppm
	3–5		2" sand as above grading to Sand, fine SW, trace black mineral grains, white 2.5Y8/1, well sorted, subangular, firm, moist	22/24	#2	Begin 2" split spoon 8-8-10-14 Headspace = 0ppm
	5–7		Sand as above, sample moist	20/24	#3	8-12-13-11 Headspace = 0ppm
	7				▽ sample wet	
	7–9		Sand as above, sample wet	18/24	#4	7-8-15-11 Headspace = 0ppm
	9–11		Sand as above	22/24	#5	9-11-14-16 Headspace Not Collected (NC)
	11–13		Fine sand, trace silt, SM white 2.5Y7.5/1, well sorted, subangular, firm to v. firm	22/24	#6	13-19-30-34 NC Auger to 14'
	13–14		as above	—	—	End of boring at 14'

Hole No. H728-SB16

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) Sav. GA.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D 120
4. HOLE NO. (As shown on drawing title and file number) H728-SB16	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED
5. NAME OF DRILLER M. Gribble	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN 14.0'	16. DATE HOLE — STARTED 8/4/95 — COMPLETED 8/4/95
8. DEPTH DRILLED INTO ROCK Ø	17. ELEVATION TOP OF HOLE 35.9
9. TOTAL DEPTH OF HOLE 14.0'	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR D. Humphus

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Concrete			BLWS — OVA, ppm Headspace
			Post hole / Auger			
	2		SAND: f-med gr, White 10YR 8/1 to Lt yell Br 6/4; dry, wellsorted, subang. tr. silt. v. loose to loose. (SW)	100	1	2-3-3-5 — 0
	4		as above: (SW); damp. — v. Dk Br 10YR 2/2, organic rich, wet v. loose. no odor, tr silt.	100	2	2-2-2-1 — 0
	6		: as above SAND: v. Dk Br 10YR 2/2, wellsorted, fine-med, wet. v. loose-firm, tr. mica. tr. silt (SW)	67	3	3-5-9-15 initial wet sample — Not Collected
	8		: Pale Br 10YR 6/3, fine-mostly med. tr. silt, wellsorted, wet, tr. ferromags. (SW) v. loose-firm, tr. mica.	50	4	3-9-15-18 — NC
	10		as above: Lt. Br Gr 2.5Y 6/2, tr. glauconite. (SW)	50	5	3-8-15-21 — NC
	12		: as above, Br 10YR 5/3 grading to White - 8/1 last 3 inches (SW)	67	6	2-3-10-12 — NC
	14		E.O.B. @ 14.0'			
	16					

Hole No. H728-SB17

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB17
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6 1/4 ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 8 Aug 95; COMPLETED 8 Aug 95
17. ELEVATION TOP OF HOLE: 36.9
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: Robert [illegible]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1.5		Concrete			Concrete core tarmac to 1.5'
	1.5		Fine sand, SW, olive yellow 2.5Y6/6, well sorted, loose, subangular, slightly moist.	N/A	#1	Posthole dig to 3' Headspace = 0 ppm
	3		Fine sand, SW, white 10YR8/1, well sorted, subangular, loose to firm, slightly moist.	27/24	#2	Begin 3" split spoon 7-9-8-12 Headspace = 0 ppm
	5		Sand as above, extremely uniform.	Sample wet ▽ 24/24	#3	14-16-9-8 Headspace: 0 ppm
	7		Sand as above	20/24	#4	Begin 2" split spoon 7-8-12-18 Headspace not collected (NC)
	9		Sand as above, white 10YR8/1 to lt grey 10YR7/1	24/24	#5	10-15-18-27 NC
	11		Sand as above, white 10YR8/1 to grey 10YR6.5/1	22/24	#6	10-30-30-40 NC
	13–14'		as above	—	—	Auger to 14' EOB @ 14'

Hole No. H728-SB18

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF	10. SIZE AND TYPE OF BIT: 6 1/4 ID HSA
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: PSI	12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
4. HOLE NO. (As shown on drawing title and file number): H728-SB18	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
5. NAME OF DRILLER: T, Finkenbinder	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 9 Aug 95; COMPLETED 9 Aug 95
7. THICKNESS OF OVERBURDEN: 14'	17. ELEVATION TOP OF HOLE: 37.4
8. DEPTH DRILLED INTO ROCK: 0	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE: 14'	19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1.5		Concrete to 1.5'			Concrete core tarmac
	1.5–3		Fine sand, trace silt, SM, light yel-brn 2.5Y 6/4, well sorted, subangular, loose, slightly moist.	N/A	#1	Begin posthole digging to 3' Headspace = 0
	3–5		12" Sand as above grading to Fine sand, SW, 2.5Y 7/4, well sorted, firm to very firm (1-3cm discreet chunks), subangular, dry.	24/24	#2	Begin 3" split spoon 7-12-11-10 Headspace = 0
	5–7		10" Sand, Fine, SW, white 10YR 7.5/1, well sorted, subangular, dry, loose to firm. 8" Fine sand w/ silt, SM, dk. yel-brn 10YR 3/4, well sorted, subangular, loose to firm, moist.	18/24	#3	7-10-9-9 Headspace = 0
	7–9		Fine sand, SW, brn 10YR 5/3, well sorted, subangular, loose to firm, wet.	sample wet 16/24	#4	Begin 2" split spoon 7-10-10-15 Headspace not collected (NC)
	9–11		Fine sand, SW, white 10YR 8/1, well sorted, subangular, firm.	18/24	#5	NC 7-10-10-15
	11–13		Sand as above, white 10YR 8/1 with 10% streaks grey 10YR 6/1, firm to very firm.	18/24	#6	NC 7-22-30-42
	13–14'		as above	—	—	Auger to 14' EOB @ 14'

Hole No. H728-SB19

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HUNTER AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB19
5. NAME OF DRILLER: Tom Finkenbinder
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 10" HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 6 Aug 95 | COMPLETED 6 Aug 95
17. ELEVATION TOP OF HOLE: 33.3
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR:

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		Grassy soil and dirt			Posthole dig to 3ft
	1–3		Fine sand, SW, pale brn 10YR7/3, well sorted, subangular, loose, slightly moist.	N/A	#1	Headspace = 0
	3–5		6" sand as above 10" Fine sand, SW, white 2.5Y8/1, well sorted, subangular, loose to firm, slightly moist	16/24	#2	Begin 2" split spoon 2-7-7-10 Headspace = 0
	5–7		Fine sand, SW, white 2.5YR8/1 to pale brn 10YR7/3, 4" dark staining at bottom, well sorted, subangular, slightly moist, loose to firm.	22/24 wet sample	#3	6-4-4-5 Headspace = 0
	7–9		Fine sand, SW, black 10YR2/1 (4") to grey 10YR/6/1, well sorted, subangular, firm, sample wet. Possibly organic mtl causing dark color.	18/24 GW@5hrs	#4	8-10-12-14 Headspace Not Collected GW@ 8.0' (rel to ground surface) 5 hours after mw installation
	9–11		14" grey sand as above grading to very fine sand, 20% silt, 20% clay, mod. sorted, subangular, very firm, brn 10YR5/3, SC	24/24	#5	7-3-6-10 NC
	11–13		Fine sand, 10% silt, SM, grey 10YR6/1 to brn 10YR5/2, well sorted, subangular, firm.	24/24	#6	7-13-15-18 NC
	13–14		as above	—	—	Auger to 14' End of boring @ 14'

Hole No. H728-SB20

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF	10. SIZE AND TYPE OF BIT: 10" HSA => 6¼ ID
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: PSI	12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
4. HOLE NO. (As shown on drawing title and file number): H728-SB20	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
5. NAME OF DRILLER: Tom Finkenbinder	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN: 14'	16. DATE HOLE: STARTED 6 Aug 95; COMPLETED 6 Aug 95
8. DEPTH DRILLED INTO ROCK: 0'	17. ELEVATION TOP OF HOLE: 39.9
9. TOTAL DEPTH OF HOLE: 14'	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		Grassy soil and dirt			Posthole dig to 3'
	1–3		Fine sand, trace silt, SM brn-yel 10YR 6/6; well sorted, subangular, loose, slightly moist.	N/A	#1	Headspace = 0ppm
	3–5		Sand and silt as above (6") grading to sand, v. fine to fine, SW, grey 10YR 7.5/1, well sorted, subangular, slightly moist, loose.	16/24	#2	Begin 2" split spoon 3-6-5-3 Headspace = 0ppm
	5–7		Fine sand, SW, pale brown 10YR 6.5/4, well sorted, subangular, loose, moist.	18/24	#3 sample wet	4-4-4-5 Headspace = 0ppm
	7–9		Fine sand, SW, white 2.5Y 7.5/1, well sorted, subangular, wet, loose to firm.	16/24	#4	7-8-9-6 Took geotech sample. Headspace Not collected (NC)
	9–11		Fine sand, SW, pale yel 2.5Y 8/2, well sorted, subangular, firm.	22/24	#5	6-10-13-13 NC
	11–13		Fine sand, SW, lt. grey 2.5Y 7.5/1 to grey 2.5Y 5.5/1, well sorted, subangular, firm to v. firm.	24/24	#6 @ 4hrs	16-30-32-37 NC GWE 12.1' (rel to ground) 4 hours after well installation
	13–14		as above	—	—	Auger to 14' End of Boring @ 14'

Hole No. H728-SB21

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): Sav. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB21
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 8/8/95 | COMPLETED 8/8/95
17. ELEVATION TOP OF HOLE: 36.1
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphs

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
						Blows / OVA, ppm Headspace
	0–2		SAND: mostly med gr, Pale Br 10YR6/3 dry, tr. black minerals, tr. silt. (SW)	Post Hole to 3'	1	-None- / 0
	4		as above, tr. orange/tan banding dry, loose-firm.	92	2	7-11-14-11 / 100
	6		V.Dk Gr Br 10YR 3/2, silty 30%, organics, HC odor, loose-firm (SM), wet	100	3	12-7-7-7 ▽ initial wet sample ▽ W.L. @ 3hr / 460 Lab
	8		as above: 1" wood piece Dk Br + Black mottling, v. loose-loose wet, (SM)	50	4	6-4-4-3 / Not Collected
	10		as above - clay of 20% tr. clay thin laminae, v. loose.	50	5	4-3-2-4 / NC
	12		Br 10YR 4/3, tr. organics, silt 10% v. loose-loose. Green clay - end of spoon, organics, plastic	62	6	5-4-4-5 / NC
	14			—	—	Auger

E.O.B @ 14.0'

16

Hole No. H728-SB22

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) Sav. GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D120
4. HOLE NO. (As shown on drawing title and file number) H728-SB22	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED
5. NAME OF DRILLER M. Gribble	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 8/8/95 — COMPLETED 8/8/95
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 32.7
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2		SAND: fine-med, 25% Gravel, 20% silt, orange/br/blk mottling, moist. (GC)	Post hole to 3'	1	Blows — None — due to overhead lines. OVA, ppm Headspace: Ø
	4		: Br 7.5YR4/3, med. sand, well sorted wet, tr. mica, tr. silt (SW)	63	2	▼ @18hr ▽ = initial wet sample. 210 Lab Sample
	6		: Br 10YR5/3 to DkBr 7.5YR3/2, silt 10%, wet, tr. organics, sl. indurated at bottom ← DK Br. (SW)	100	3	Not Collected
	8		SAND: mostly med gr. DK Br 7.5YR3/2, silt 10%, tr. organics, tr mica, tr. Fe-cemented granules, wet, well sorted (SW)	67	4	NC
	10		: as above, tr Rx frag (~~shale~~) DH coal; siltier zone 25-30%	50	5	NC
	12		: as above. tr Fe cemented Granules	83	6	NC
	14		Green clay, plastic	—	—	Auger
			E.O.B @ 14.0' bgs.			
	16					

Hole No. H728-SB23

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): SW. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB23
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: ∅
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 8/6/95 | COMPLETED 8/6/95
17. ELEVATION TOP OF HOLE: 32.1
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Blows / OVA, ppm Headspace
	0–2		SAND: fine-med gr, v. Dk GrBr 10YR3/2 well sorted, subang, moist, silt ~10% (SW/SM)	Post hole to 3'	1	-none- due to overhead lines / 0
	2–4		: as above: wet (SW/SM) 2" possible staining, black, slight odor silty 30%, dk Yell Br 10YR3/4 (SM)	100	2	≚ initial wet sample / ≚ W.L. at 1.5hr / Lab Sample 4
	4–6		- as above - mostly med, tr. coarse. tr. mica.	100	3	Not Collected
	6–8		SAND: mostly med, tr coarse, DkBR 7.5YR 3/2, tr. mica, well sorted, subang. low silt <5% (SW)	100	4	NC
	8–10		: as above (SW)	90	5	NC
	10–12		: mostly coarse/lower gr. to med, tr. black FeO/MgO? nodules 2-3 mm, silt 5% (SW)	80	6	NC
	12–14		as above	—	—	Auger

E.O.B 14.0'

Hole No. H728-SB24

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: Hunter AAF	10. SIZE AND TYPE OF BIT: 6 1/4 ID HSA
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: PSI	12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
4. HOLE NO. (As shown on drawing title and file number): H728-SB24	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED 0
5. NAME OF DRILLER: T. Finkenbinder	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 6Aug 95; COMPLETED 6Aug 95
7. THICKNESS OF OVERBURDEN: 14'	17. ELEVATION TOP OF HOLE: 37.7
8. DEPTH DRILLED INTO ROCK: 0'	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE: 14'	19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Grassy sand and dirt			Posthole dig to 3'
	1		Fine sand, trace silt, SM brown 10YR 5/6 to 10YR 4/4 well sorted, subangular, loose, slightly moist	N/A	#1	Headspace = 0
	3		Fine sand, SW, lt. yel-brn 2.5Y6/3, well sorted, subang, v.loose, slightly moist	20/24	#2	Begin 2" split spoon 1-~~1~~ RAL -1-1-1 Headspace = 0
	5		Fine sand, pale brn 2.5Y7/3, well sorted, subangular, v.loose, sample wet @ 6'.	18/24 ▽ sample wet	#3	2-3-5-5 Headspace = 0
	7		Fine sand, SW, light grey 2.5Y7/2, well sorted, subangular, loose to firm.	20/24	#4	7-8-10-14 Not collected (NC)
	9		Fine sand, trace silt, white 2.5Y8/1 to lt. grey 2.5Y7/2, well sorted, subangular, v. firm	24/24	#5	18-18-20-32 NC
	11		Fine sand, trace silt, lt. grey 2.5Y7/2, well sorted, subangular, v.firm to firm.	24/24	#6	10-15-20-25 NC Geotech sample
	13		as above	—	—	Auger to 14' End of Boring @ ~~14~~ RAL 14'
	14					

Hole No. H728-SB25

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAP
2. LOCATION (Coordinates or Station): SAV. GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB25
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 8/7/95 | COMPLETED 8/7/95
17. ELEVATION TOP OF HOLE: 38.5
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Concrete			Blows — OVA ppm Headspace
	2		SAND, f-med, v. DkGr 2.5Y 3/1, dry, silty 10%, tr. mica, HC odor, well sorted, subang. (SW/SM)	Post hole to 3'	1	None — 9
	4		Gravel; Sand - DkGrBr 2.5Y 4/2, sl. color banding, damp, loose-firm, black staining at bottom, HC odor (SW)	50	2	16-10-8-16 — 60
	6		: as above, friable - stained even hard, damp, firm-dense (SW) Asphalt/HC odor	67	3	37-16-20-25 — 64
	8		: as above, wet, firm-v. firm, black staining SW asphalt odor	58	4	25-15-15-18 ▼ initial wet sample; W.L. ▼ 70 min — 110
	10		: as above loose-firm, black staining asphalt odor	90	5	15-7-12-6 — Not Collected
	12		: as above, v. loose. LtBr Gr 2.5Y 6/2 No staining	100	6	3-2-1-2 — Not Collected
	14		as above	—	—	Auger
			E.O.B. @ 14.0'			
	16					
	18					

Hole No. H728-SB26

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HUNTER AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB26
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 15'
10. SIZE AND TYPE OF BIT: 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 7 Aug 95 | COMPLETED 7 Aug 95
17. ELEVATION TOP OF HOLE: 38.4
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1.2		Concrete to 1.2 feet			Posthole dig to 3'
	1.2–3		Fine sand, SW, dk grey-brn 10YR 4/2, well sorted, subangular, slightly moist, loose, some dark staining, no odor	20/24	#1	Headspace = 1ppm
	3–5		Fine sand, trace silt, SM v. dk grey brn 10YR 3/2, 50% dark staining black 10YR 2/1, fuel oil odor, well sorted, subangular, firm.	22/24	#2	Begin 2" split spoon 18-20-19-22 Headspace = 840
	5–7		Sand as above, fuel oil odor. ½ inch concrete at bottom of spoon. sample dry.	16/24	#3	22-25-37-22 Headspace = 560
	7–9		Fine sand, trace silt, SM, v. dk grey brn 10YR 3/2, 75% dark staining black 10YR 2/1, well sorted, subangular, wet, loose, mod f.o. odor.	☒ sampled. 12/24	#4	10-8-12-7 Headspace not collected (NC)
	9–11		4" Fine sand, 20% silt, black 10YR 2/1, weathered f.o. odor, mod sorted, subangular, loose, 6" as above, grey brn 10YR 4/2, weathered f.o. odor.	10/24	#5	4-4-4-5 NC
	11–13		Fine sand, 10% silt, grey brn 10YR 4/2, well sorted, subangular, no odor, loose	14/24	#6	4-1-2-2 NC
	13–15		as above	—	—	Auger to 15' End of boring @ 15'

Hole No. H728-SB27

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HUNTER AAF
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB27
5. NAME OF DRILLER: T. Finkenbinder
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14'
8. DEPTH DRILLED INTO ROCK: 0'
9. TOTAL DEPTH OF HOLE: 14'
10. SIZE AND TYPE OF BIT: 6¼ ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Dietrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 7 Aug 95 | COMPLETED 7 Aug 95
17. ELEVATION TOP OF HOLE: 37.9
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1		6" asphalt over 2-6cm aggregate and sand			Concrete core asphalt. Posthole dig to 3'
	1–3		Fine sand, SW, brn 10YR 6/4, well sorted, subangular, loose over organic black silt, 20% sand, black 10YR 2/1, firm, dry	N/A	#1	Headspace = 550
	3–5		Fine sand, 10% silt, dk brn 10YR 3/3, well sorted, subangular, wet at bottom, loose to firm	22/24 sample wet ∇	#2	Begin 2" split spoon 6-8-8-9 Headspace = 200
	5–7		Fine sand, trace silt, SM, dk yel-brn 10YR 4/3, well sorted subangular. Silt increasing to 20% at bottom 4" of spoon.	24/24	#3	12-9-9-6 Not collected (NC)
	7–9		Fine sand, 10% silt, brown 10YR 4/4 to dk brown 10YR 3/2, v. firm, well sorted, subanglar,	24/24	#4	3-3-8-12 Geotech sample NC
	9–11		Fine sand, 10% silt, dk brown 10YR 3/2, well sorted, subangular, v. firm.	12/12	#5	55-52/5 NC
	11–13		Fine sand, 10% silt, SM, yel-brn 10YR 4.5/6, well sorted, subangular, firm to v. firm	12/24	#6	11-23-30-36 NC
	13–14		as above	—	—	Auger to 14' End of Boring @ 14'

Hole No. H728-SB28

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): SAV, GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB28
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 8/7/95 | COMPLETED 8/7/95
17. ELEVATION TOP OF HOLE: 37.6
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: D. Humphr[illegible]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Asphalt 7.5"			Blow S — OVA ppm Headspace
	2		SAND: f-med gr, Lt olive Br 2.5Y5/6, tr. silt, well sorted, subang, dry (SW)	Post hole to 3'	1	None — 8.5
	4		SAND: fine- silty 35%, Black 10YR2/1, damp-wet at bottom, v.loose-loose, (SM) tr organics	100	2	2-3-4-6 — ab 300
	6		as above, 15% organics. wet. v.loose-firm. (SM)	20 83	3	3-5-5-11 ▽ initial ▼ wet sample @10 days — 200
	8		as above. v.firm-v.dense, wet (SM)	50	4	24-50/6 — Not Collected
	10		: as above-mostly med, tr. glauconite some Fe cementing, grading to Lt. olive Br. 2.5Y5/6, silt 5% loose-firm (SW)	50	5	7-11-11-14 — Not Collected
	12		: as above, tr. mica, (SW) loose-v firm, well sorted, subang tr. glauconite, no cementing. wet. silt <5%	67	6	6-15-17-22 — Not Collected
			as above	—	—	↕ Auger
	14		E.O.B. @ 14.0'			

Hole No. H728-29

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT: HAAF
2. LOCATION (Coordinates or Station): SAV. GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): H728-SB29
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [x] VERTICAL [ ] INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 14.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 14.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich D120
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6; UNDISTURBED
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 8/9/95; COMPLETED 8/9/95
17. ELEVATION TOP OF HOLE: 37.4
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–3		Asphalt; Lime rock base; SAND: med, GrBr 10YR 5/2, 10% silt, dry, well sorted, subang. (SW/SM)	—	1	Blows: None; OVA, ppm Headspace: 12
	3–5		SILT: sandy 30%, organic rich, V. DKBR 10YR 2/2, wet at bottom, loose-firm, tr. clay thin laminae, SAND - Br 10YR 5/3 last 2"	20 / 83	2	3" spoon; 14-10-11-11; 85
	5–7		as above: V. DrBr 10YR 3/2, silty 10-20, tr. organics, tr. blk minerals, wet (SW/SM)	85	3	11-7-6-7; 3" spoon; ▽ initial, ▼ wet sample @ 30 min; 250
	7–9		: as above, less silt 5-10%, tr. organics, tr. blk minerals, v. loose-v. firm, wet (SW) well sorted.	83	4	4-10-11-26; Not Collected
	9–11		: as above Dr Red Br 5YR 3/2 tr. mica, tr. silt, no organics (SW)	75	5	23-33-50/6; NC
	11–13		: as above, St Br 7.5YR 4/6, tr. dark spotting.	75	6	23-50/6; NC
	13–14		as above	—	—	Auger
	14		E.O.B @ 14.0'			

Hole No. H 728-SB30

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT HAAF	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV. GA.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL Diedrich D-120
4. HOLE NO. (As shown on drawing title and file number) H 728-SB30	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED: 6 — UNDISTURBED:
5. NAME OF DRILLER M. Gribble	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 8/15/95 — COMPLETED 8/15/95
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 37.6
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Blows — OVA, ppm Headspace
	0–2		Concrete 15" Sand: med-fine, DkBr, 10YR 3/3, tr. silt, dry, well sorted, subang. (SW)	Post hole to 3'	1	-NA- — 50
	4		: v. DkBr 10YR 2/2, as above, damp, loose, tr. organics (SW)	21 88	2	8-10-9-8 — 760
	6		: DkGr 10YR 4/1 as above 3" v. Dk GrBr - 3/2 damp, organics Lt Br Gr - 6/2 - wet, firm-v. firm, silt 5% (SW)	100	3	10-13-18-26 3' spoon — ▽ initial wet sample — 1000+ LAB
	8		: as above, v. loose - loose v. dk Br 7.5YR 2.5/2, mostly fine sand, silt 20%, wet, tr. mica, (SM)	100	4	3-4-5-8 — ▽ 6.9 bgs @ 15 min — Not Collected
	10		: as above. v. firm - v. dense. tr. blk minerals (SM) - - - sl. indurated, Fe cemented nodules silt 5% (SW)	50	5	30-50/5 — NC
	12		as above: Yell Rd 5YR 4/6, no cementation, silt 5%. (SW)	75	6	8-30-50/6 — NC
	14		as above	—	—	Auger
			E.O.B. @ 14.0'			
	16					

APPENDIX E

FIELD EQUIPMENT CALIBRATION SHEETS

FIGURE B4.4
SOIL GAS INSTRUMENTATION CALIBRATION

Date: 07/10 - 07/15/95

Instrument: HP 5890 Series II Gas Chromatograph
equipped with a flame ionization detector (FID)

Calibration Standard:

Primary Standard
Manufacturer: National Institute of Science

Lot #: 09214BZ
03456AZ
02504MY
00921KY

Concentration: Benzene 10,000 mg/L
Toluene 10,000 mg/L
Ethyl Benzene 10,000 mg/L
Ortho Xylene 10,000 mg/L

All Primary Standards were prepared by Scott Norris in the Tracer Research Laboratory in Tucson, Arizona. Primary Standards were prepared in methanol.

Calibration Standards used in the field are prepared by injecting 4 microliters (µL) of primary standard into a 40 milliliter (mL) VOA filled with distilled water.

TRACER RESEARCH CORP.

JOB: 5S50302S/METCALF &EDDY/HUNTER AIR BASE/SAVANNAH, GEORGIA
DATE: 07/10/95
ANALYST: DAVID KOVACH
FIELD ASST.: DOUG WILSON

CALIBRATION WORKSHEET

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
BENZENE	A	100	2364438	1000.0	4.2E-14	4.9E-14	5.7E-15	11.7179	25
		100	1939402	1000.0	5.2E-14				
		100	1895589	1000.0	5.3E-14				

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
TOLUENE	A	100	2901104	1000.0	3.4E-14	4E-14	4.8E-15	11.911	25
		100	2377806	1000.0	4.2E-14				
		100	2313290	1000.0	4.3E-14				

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
E-BENZENE	A	100	3446458	1000.0	2.9E-14	3.3E-14	3.9E-15	11.6621	25
		100	2857296	1000.0	3.5E-14				
		100	2751470	1000.0	3.6E-14				

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
XYLENE	A	100	2325181	1000.0	4.3E-14	5E-14	6.4E-15	12.7677	25
		100	1861085	1000.0	5.4E-14				
		100	1833458	1000.0	5.5E-14				

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
TVHC(C4-C9)	A	100	11037534	4000.0	3.6E-14	4.2E-14	5E-15	11.9578	25
		100	9035571	4000.0	4.4E-14				
		100	8795098	4000.0	4.5E-14				

COMPOUND	DET	INJ SIZE	AREA CT.	CONC.[ug/	RF	AVE RF	SSTD	%RSD	ACC RG
TVHC(C10-CX)	A	100	11037534	4000.0	3.6E-14	4.2E-14	5E-15	11.9578	25
		100	9035571	4000.0	4.4E-14				
		100	8795098	4000.0	4.5E-14				

TRACER RESEARCH CORPORATION **CALIBRATION CHECK**

JOB: 5S50302S/METCALF &EDDIE/HUNTER AIR BASE/SAVANNAH, GEORGIA

DATE: 07/12/95

ANALYST: DAVID KOVACH

FIELD ASST.: DOUG WILSON

					CAL CHECK 1	TIME: 1845				CAL CHECK 2	TIME: 1850			
Compound	DET	RF	RUN TIME	CONC	AREA	RF	DIFF	ACC RGE	CONC	AREA	RF	DIFF	ACC RGE	CONC
		[illegible]	min	ug/L			%	%	ug/L			%	%	ug/L
[illegible]	[illegible]	[illegible]		1000	1875023	[illegible]	0.1	25	1000	2496756	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]		1000	2301984	[illegible]	[illegible]	25	1000	3235117	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]		1000	[illegible]	[illegible]	1.0	25	1000	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]		1000	[illegible]	[illegible]	[illegible]	25	1000	[illegible]	[illegible]	24.7	25	1000
[illegible]	[illegible]	[illegible]		4000	[illegible]	[illegible]	4.5	25	4000	[illegible]	[illegible]	[illegible]	25	4000
[illegible]	[illegible]	[illegible]		4000	[illegible]	[illegible]	4.5	25	4000	[illegible]	[illegible]	[illegible]	25	4000

TRACER RESEARCH CORPORATION **CALIBRATION CHECK**

JOB: 5S50302S/METCALF &EDDIE/HUNTER AIR BASE/SAVANNAH, GEORGIA

DATE: 07/13/95

ANALYST: DAVID KOVACH

FIELD ASST.: DOUG WILSON

Compound	DET	RF	RUN TIME	CONC
		[illegible]	min	ug/L
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		4000
[illegible]	A	[illegible]		4000

CAL CHECK 1 — TIME: 0914

Compound	AREA	RF	DIFF	ACC RGE	CONC
			%	%	ug/L
[illegible]	1344709	[illegible]	[illegible]	25	1000
[illegible]	2360094	[illegible]	[illegible]	25	1000
[illegible]	2355034	[illegible]	[illegible]	25	1000
[illegible]	1966261	[illegible]	[illegible]	25	1000
[illegible]	9156719	[illegible]	[illegible]	25	4000
[illegible]	9156719	[illegible]	[illegible]	25	4000

CAL CHECK 2 — TIME: 1259

Compound	AREA	RF	DIFF	ACC RGE	CONC
			%	%	ug/L
[illegible]	2133741	[illegible]	[illegible]	25	1000
[illegible]	2735490	[illegible]	[illegible]	25	1000
[illegible]	3333509	[illegible]	[illegible]	25	1000
[illegible]	2285582	[illegible]	[illegible]	25	1000
[illegible]	10545564	[illegible]	[illegible]	25	4000
[illegible]	10545565	[illegible]	[illegible]	25	4000

CAL CHECK 3 — TIME: 1748

Compound	AREA	RF	DIFF	ACC RGE
			%	%
[illegible]	1799770	[illegible]	[illegible]	25
[illegible]	2047460	[illegible]	[illegible]	25
[illegible]	3320537	[illegible]	[illegible]	25
[illegible]	1481556	[illegible]	[illegible]	25
[illegible]	7579577	[illegible]	[illegible]	25
[illegible]	7579577	[illegible]	[illegible]	25

CONC
ug/L
1000
1000
1000
1000
4000
4000

TRACER RESEARCH CORPORATION **CALIBRATION CHECK**

JOB: 5S50302S/METCALF &EDDIE/HUNTER AIR BASE/SAVANNAH, GEORGIA

DATE: 07/14/95

ANALYST: DAVID KOVACH

FIELD ASST.: DOUG WILSON

					CAL CHECK 1	TIME 0744				CAL CHECK 2	TIME 1045				CAL CHECK 3	TIME 1712		
Compound	DET	RF	RUN TIME	CONC	AREA	RF	DIFF	ACC REF	CONC	AREA	RF	DIFF	ACC REF	CONC	AREA	RF	DIFF	ACC REF
		[illegible]	min	mg/L			%	%	mg/L			%	%	mg/L			%	%
[illegible]	[illegible]	[illegible]		[illegible]	1777424	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	20.4	25	[illegible]	2101851	[illegible]	[illegible]	25
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	[illegible]	25
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	2343110	[illegible]	[illegible]	25
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	[illegible]	25
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	25	4000	[illegible]	[illegible]	[illegible]	25	4000	10421662	[illegible]	[illegible]	25
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	25	4000	[illegible]	[illegible]	[illegible]	25	4000	10421662	[illegible]	[illegible]	25

CONC
ug/L
1000
1000
1000
1000
4000
4000

TRACER RESEARCH CORPORATION **CALIBRATION CHECI**

JOB: 5S50302S/METCALF &EDDIE/HUNTER AIR BASE/SAVANNAH, GEORGIA

DATE: 07/15/95

ANALYST: DAVID KOVACH

FIELD ASST.: DOUG WILSON

CAL CHECK 1

TIME [illegible]

Compound	DET	RF	RUN TIME	CONC	AREA	RF	DIFF	ACC RNG	CONC
		[illegible]	min	ug/L			%	%	ug/L
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOLUENE	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
XYLENE	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TRACER RESEARCH CORPORATION — CALIBRATION CHECK

JOB: 5S50302S/METCALF &EDDIE/HUNTER AIR BASE/SAVANNAH, GEORGIA
DATE: 07/11/95
ANALYST: DAVID KOVACH
FIELD ASST.: DOUG WILSON

Compound	DET	RF	RUN TIME	CONC
		[illegible]	min	ug/L
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		1000
[illegible]	A	[illegible]		4000
[illegible]	A	[illegible]		4000

CAL CHECK 1 — TIME: 1022

Compound	AREA	RF	DIFF	ACC RGE	CONC
			%	%	ug/L
[illegible]	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	2154166	[illegible]	[illegible]	25	1000
[illegible]	2471797	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	8124874	[illegible]	17.7	25	4000
[illegible]	8124874	[illegible]	[illegible]	25	4000

CAL CHECK 2 — TIME: [illegible]

Compound	AREA	RF	DIFF	ACC RGE	CONC
			%	%	ug/L
[illegible]	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	[illegible]	[illegible]	[illegible]	25	1000
[illegible]	1837502	[illegible]	[illegible]	25	1000
[illegible]	8762424	[illegible]	[illegible]	25	4000
[illegible]	8762424	[illegible]	[illegible]	25	4000

CAL CHECK 3 — TIME: 1133

Compound	AREA	RF	DIFF	ACC RGE
			%	%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	3532744	[illegible]	[illegible]	[illegible]
[illegible]	4028076	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	12851175	[illegible]	[illegible]	[illegible]
[illegible]	12851175	[illegible]	[illegible]	[illegible]

CAL CHECK #

TIME: 1737

CONC	AREA	RF	DIFF	ACC RGE	CONC
ug/L			%	%	ug/L
1000	3423154	[illegible]	40.2	25	[illegible]
1000	4354022	[illegible]	42.6	25	[illegible]
1000	3995746	[illegible]	44.3	25	[illegible]
1000	3875490	[illegible]	40.0	25	[illegible]
4000	170245234	[illegible]	44.1	25	[illegible]
4000	170289054	[illegible]	44.1	25	[illegible]

INSTRUMENT CALIBRATION

DATE. 6-13-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	91 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0750				
CALIBRATED BY:	GR				

CALIBRATION CHECK:	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
TIME:	1830				
BY:	GR				
STATUS:	89 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6-14-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	97 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:					
TIME CALIBRATED:					
CALIBRATED BY:					
CALIBRATION CHECK:					
TIME:	1830				
BY:	GL				
STATUS:	95 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/15/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A 41858				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm methane				
READING/ADJUSTMENT	95 ppm				
ZERO GAS:	NA				
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0738				
CALIBRATED BY:	DLH				

CALIBRATION CHECK:					
TIME:	1800				
BY:	GR				
STATUS:	94 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/16/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A 41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	95 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0730				
CALIBRATED BY:	GR				
CALIBRATION CHECK:					
TIME:	1830				
BY:	DLH				
STATUS:	98				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

17

DATE. 6/16/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	96 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0755				
CALIBRATED BY:	DLH				

CALIBRATION CHECK:	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
TIME:	1830				
BY:	DLH				
STATUS:	98 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/18/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	96ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0740				
CALIBRATED BY:	KS				
CALIBRATION CHECK:					
TIME:	1800				
BY:	DLH				
STATUS:	95ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/19/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A 41828				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	95 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0750				
CALIBRATED BY:	DLH				
CALIBRATION CHECK:					
TIME:					
BY:					
STATUS:					
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/20/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A 41858				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	94 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0750				
CALIBRATED BY:	DLH				

CALIBRATION CHECK:					
TIME:	1920				
BY:	DLH				
STATUS:	94 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE: 6/21/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41858				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	—				
CONCENTRATION	95.5 ppm CH_4				
READING/ADJUSTMENT	95 ppm				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0750				
CALIBRATED BY:	DLH				
CALIBRATION CHECK:					
TIME:	1930				
BY:	DLH				
STATUS:	94 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6/~~26~~ 27 GL /95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41858				
CALIBRATION STANDARD					
MANUFACTURER	EAGLE				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 PPM CH_4				
READING/ADJUSTMENT	95				
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0815				
CALIBRATED BY:	KS				
CALIBRATION CHECK:					
TIME:	1900				
BY:	GL				
STATUS:	96 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 6-28-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41858				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)					
CONCENTRATION	95.5 ppm-CH_4				
READING/ADJUSTMENT					
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:	✓				
TIME CALIBRATED:	0805				
CALIBRATED BY:	GL				

CALIBRATION CHECK:	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
TIME:	1800				
BY:	GL				
STATUS:	94 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/10/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	HAZCO 2399				
CALIBRATION STANDARD					
MANUFACTURER	EAGLE				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	84				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	-				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0715				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1650				
BY:	DH				
STATUS:	86				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/11/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	Hazco 2399				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	94				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	–				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0705				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1530				
BY:	DH				
STATUS:	86				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/12/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	HAzco 2399				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	100				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0655				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1710				
BY:	DH				
STATUS:	95				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/13/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	Hazco 2391				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	92				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0650				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1800				
BY:	DH				
STATUS:	90				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/14/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	Hazco 2377				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	98				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	-				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0650				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1400				
BY:	94				
STATUS:	DH				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/15/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	HAZCO 2399				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	029194				
CONCENTRATION	95.5				
READING/ADJUSTMENT	~~100~~ DH 94				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	-				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0650				
CALIBRATED BY:	DH				
CALIBRATION CHECK:					
TIME:	1210				
BY:	DH				
STATUS:	98				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 7/31/95

INSTRUMENT (1)	OVA-FID	pH PEN	HYDAC 910 COND PEN	CGI	HNu-PID
MODEL NUMBER	128	910			
SERIAL / ID NUMBER	A41858	Hazco 5127			
CALIBRATION STANDARD					
MANUFACTURER	~~Eagle~~ Canaan	Fisher	Fisher		
IDENTIFICATION (LOT #)	NA	–	1268		
CONCENTRATION	98.7	7.0/10.0	996		
READING/ADJUSTMENT	86	7.0/10.0	996		
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	–				
READING/ADJUSTMENT	0				
BATTERY CHECK:	OK				
TIME CALIBRATED:	1255	1415	1415		
CALIBRATED BY:	RAL	DH	DH		
CALIBRATION CHECK:					
TIME:	1715	1715	1716		
BY:	DH	DH	DH		
STATUS:	90	6.90/9.65	875		
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 1 Aug 95

INSTRUMENT (1)	OVA-FID	OVA-FID II ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	128	128			
SERIAL / ID NUMBER	A42171	A41858			
CALIBRATION STANDARD					
MANUFACTURER	RAL ~~Foxboro~~ Canaan	Canaan			
IDENTIFICATION (LOT #)	88-14736	88-14736			
CONCENTRATION	98.7	98.7			
READING/ADJUSTMENT	84	86			
ZERO GAS:					
MANUFACTURER	ambient	ambient			
IDENTIFICATION (LOT #)	X	X			
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	ok	ok			
TIME CALIBRATED:	0710	0715			
CALIBRATED BY:	RAL	RAL			

CALIBRATION CHECK:					
TIME:	1620	~~15~~ RAL 1700			
BY:	DH	RAL			
STATUS:	94	80			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/2/95

INSTRUMENT (1)	OVA-FID	OVA 2 ~~pH PEN~~	COND PEN	CGI	HNu-PIO
MODEL NUMBER	128	128			
SERIAL / ID NUMBER	A A2171	A A1858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88-14736				
CONCENTRATION	98.7	98.7			
READING/ADJUSTMENT	90	94			
ZERO GAS:					
MANUFACTURER	ambient	—			
IDENTIFICATION (LOT #)	—	—			
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0705	0715			
CALIBRATED BY:	DK	KS			
CALIBRATION CHECK:					
TIME:	1530	1530			
BY:	KS	KS			
STATUS:	98	92			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/3/95

INSTRUMENT (1)	OVA-FID	OVA #2 ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	AA2171	AA2858			
CALIBRATION STANDARD					
MANUFACTURER	Canadn				
IDENTIFICATION (LOT #)	88-14736				
CONCENTRATION	98.7	98.7			
READING/ADJUSTMENT	90	96.0			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—	—			
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0645	0745			
CALIBRATED BY:	DH	KS			
CALIBRATION CHECK:					
TIME:	1518	1615			
BY:	DH	MAL			
STATUS:	99	98			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/4/95

INSTRUMENT (1)	OVA-FID	OVA 2 ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	-128-				
SERIAL / ID NUMBER	A42171	A42858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88-14736				
CONCENTRATION	- 98.7 -				
READING/ADJUSTMENT	100	94			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0650	0730			
CALIBRATED BY:	DH	KS			
CALIBRATION CHECK:					
TIME:	1616	1416			
BY:	DH	KS			
STATUS:	98	94			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/5/95

INSTRUMENT (1)	OVA-FID	OVA 2 ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	- 128 -				
SERIAL / ID NUMBER	A4 2171	A 4 2888			
CALIBRATION STANDARD					
MANUFACTURER	Canam				
IDENTIFICATION (LOT #)	88 - 14736				
CONCENTRATION	98.7				
READING/ADJUSTMENT	94	94			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—				
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0655	0710			
CALIBRATED BY:	DH	RAC			
CALIBRATION CHECK:					
TIME:	1550	1530			
BY:	DH	KS			
STATUS:	100	84			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   .HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/6/95

INSTRUMENT (1)	OVA-FID	~~pH PEN~~ OVA #2	COND PEN	CGI	HNu-PID
MODEL NUMBER	— 128 —				
SERIAL / ID NUMBER	A42171	AA2858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88 - 14736				
CONCENTRATION	— 98.7 —				
READING/ADJUSTMENT	97	98			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—	—			
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0700	0715			
CALIBRATED BY:	DH	KS			
CALIBRATION CHECK:					
TIME:	1615	1625			
BY:	KS	KS			
STATUS:	94	93			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/7/95

INSTRUMENT (1)	OVA-FID	OVA 2 ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	— 128 —				
SERIAL / ID NUMBER	A42171	A42858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88 - 14736				
CONCENTRATION	— 98.7 —				
READING/ADJUSTMENT	90	100			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—				
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	ok	ok			
TIME CALIBRATED:	0655	0715			
CALIBRATED BY:	DH	RAL			
CALIBRATION CHECK:					
TIME:	1607	1640			
BY:	DH	RAL			
STATUS:	98	95			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE: 8/8/95

INSTRUMENT (1)	OVA-FID	OVA #2 ~~pH PEN~~	COND PEN	CGI	HNu-PID
MODEL NUMBER	— 128	—			
SERIAL / ID NUMBER	A42171	A42858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88-14 736				
CONCENTRATION	— 98.7	—			
READING/ADJUSTMENT	100	100			
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)	—	—			
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	ok	ok			
TIME CALIBRATED:	0710	0710			
CALIBRATED BY:	RAL	RAL			

CALIBRATION CHECK:					
TIME:	1450	1700			
BY:	DH	KS			
STATUS:	100	92			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/9/95

INSTRUMENT (1)	OVA-FID	OVA 2 pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	-128-				
SERIAL / ID NUMBER	A42171	A42858			
CALIBRATION STANDARD					
MANUFACTURER	Canaan				
IDENTIFICATION (LOT #)	88-14736				
CONCENTRATION	- 98.7 -				
READING/ADJUSTMENT	100	92			
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	—				
READING/ADJUSTMENT	0	0			
BATTERY CHECK:	OK	OK			
TIME CALIBRATED:	0630	0710			
CALIBRATED BY:	DM	KS			
CALIBRATION CHECK:					
TIME:	1000	1004			
BY:	DH	DH			
STATUS:	98	94			
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8-15-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A42171				
CALIBRATION STANDARD					
MANUFACTURER	CANAAN				
IDENTIFICATION (LOT #)	88-14736				
CONCENTRATION	98.7 ppm CH4				
READING/ADJUSTMENT	84				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	Ø				
BATTERY CHECK:	OK				
TIME CALIBRATED:	0710				
CALIBRATED BY:	GL				
CALIBRATION CHECK:					
TIME:	1510				
BY:	DH				
STATUS:	89 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE: 8/16/95

INSTRUMENT (1)	OVA-FID	pH PEN	HYPAC COND PEN	CGI	HNu-PID
MODEL NUMBER	128	910			
SERIAL / ID NUMBER	A42171 / A42858	HAZCO 2511	HAZCO 5127		
CALIBRATION STANDARD					
MANUFACTURER	Canaan	HACH			
IDENTIFICATION (LOT #)	88-14136	–	–		
CONCENTRATION	98.7	7.0/10.0	~~7.0/10.0~~ 996		
READING/ADJUSTMENT	99 / 97	7.0/10.0	~~7.0/10.0~~ 996		
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	–				
READING/ADJUSTMENT	ø				
BATTERY CHECK:	OK	OK	OK		
TIME CALIBRATED:	0705	0715	0715		
CALIBRATED BY:	DH / GR	DH	DH		
CALIBRATION CHECK:					
TIME:	1556 / 1557	1606			
BY:	DH / DH	DH	DH		
STATUS:	92 / 88	7.05/10.01 950 cond.			
TIME:					
BY:					
STATUS:					

1. **OVA-FED:** Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8-17-95

INSTRUMENT (1)	OVA-FID	OVA ~~pH PEN~~	Hydac ~~COND PEN~~	CGI	HNu-PID
MODEL NUMBER	128	128	910		
SERIAL / ID NUMBER	A42171	A42858			
CALIBRATION STANDARD					
MANUFACTURER	CANAAN	CANAAN	HACH		
IDENTIFICATION (LOT #)	88-14736	88-14736	–		
CONCENTRATION	98.7 CH4 ppm	98.7 CH4 ppm	7.0/10.0/996		
READING/ADJUSTMENT	96	98	7.0/10.0/996		
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)	\	\	\		
READING/ADJUSTMENT	0	0	\		
BATTERY CHECK:	OK	OK	OK		
TIME CALIBRATED:	0719	0719	0716		
CALIBRATED BY:	GL	GL	GL		

CALIBRATION CHECK:					
TIME:	1520	1520	1730		
BY:	DH	DH	DH		
STATUS:	94	92	6.97/9.86/972		
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE: 8/18/95

INSTRUMENT (1)	OVA-FID	OVA ~~pH PEN~~	Hydac ~~COND PEN~~	Hydac ~~CGI~~	HNu-PID
MODEL NUMBER	128	128	910	910	
SERIAL / ID NUMBER	A42171	A42858	2511	2619	
CALIBRATION STANDARD					
MANUFACTURER	Calgaz	Calgaz	Hach	Hach	
IDENTIFICATION (LOT #)	88-14736	88-1476			
CONCENTRATION	98.7 ppm CH_4	98.7 ppm CH_4	7/10/1996	7/10/996	
READING/ADJUSTMENT	97	94	7.4/10.0/1996	7.0/10.0/996	
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	Ø	Ø			
BATTERY CHECK:	OK	OK	OK	OK	
TIME CALIBRATED:	0710	0710	0715	0715	
CALIBRATED BY:	GL	GL	GL	GL	

CALIBRATION CHECK:					
TIME:	1231	1232	1243	1243	
BY:	DH	DH	DH	DH	
STATUS:	86	89	6.96/9.93/983	7.01/10.0/999	
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

pH PEN: Electronic pH tester manufactured by Fisher Brand

COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8-19-95

INSTRUMENT (1)	OVA-FID	OVA ~~pH PEN~~	Hydac ~~COND PEN~~	Hydac ~~CGI~~	HNu-PID
MODEL NUMBER	128	128	910	910	
SERIAL / ID NUMBER	A42171	A42858	2511	2619	
CALIBRATION STANDARD					
MANUFACTURER	Canaan	Canaan	Hach	Hach	
IDENTIFICATION (LOT #)	88-14736	88-14736			
CONCENTRATION	98.7 ppm CH_4	98.7 ppm CH_4	7/10/996	7/10/996	
READING/ADJUSTMENT	98 ppm	97 ppm	7/10/996	7/10/996	
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	Ø	Ø			
BATTERY CHECK:	OK	OK	OK	OK	
TIME CALIBRATED:	0720	0720	0715	0715	
CALIBRATED BY:	GR	GR	GR	GR	

CALIBRATION CHECK:					
TIME:	1535	1535	1531	1531	
BY:	DH	DH	DH	DH	
STATUS:	97	95	7.39/10.16 ~~233~~/933	7.26/10.23/963	
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/20/95

INSTRUMENT (1)	OVA-FID	OVA ~~pH PEN~~	Hydac ~~COND PEN~~	Hydac ~~CGI~~	HNu-PID
MODEL NUMBER	128	128	910	910	
SERIAL / ID NUMBER	A42171	A42858	2511	2619	
CALIBRATION STANDARD					
MANUFACTURER	Canadian	Canadian	Hach	Hach	
IDENTIFICATION (LOT #)	88-14736	88-14736			
CONCENTRATION	98.5 ppm CH_4	98.5 ppm CH_4	7/10/996	7/10/996	
READING/ADJUSTMENT	100 ppm	100 ppm	7/10/996	7/10/996	
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	Ø	Ø			
BATTERY CHECK:	OK	OK	OK	OK	
TIME CALIBRATED:	0650	0650	0655	0655	
CALIBRATED BY:	GL/DH	GL/DH	GL/DH	GL/DH	

CALIBRATION CHECK:					
TIME:	1355	1353	1635	1330	
BY:	DH	DH	GL	DH	
STATUS:	94	93	6.97/9.95/1008	7.12/10.03/993	
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 8/21/95

INSTRUMENT (1)	OVA-FID	OVA ~~pH PEN~~	Hydac ~~COND PEN~~	Hydac ~~CGI~~	HNu-PID
MODEL NUMBER	128	128	910	910	
SERIAL / ID NUMBER	A42171	A42858	2511	2619	
CALIBRATION STANDARD					
MANUFACTURER	Camann	Camann	Hach	Hach	
IDENTIFICATION (LOT #)	88-14736	88-14736			
CONCENTRATION	98.5 CH_4 ppm	98.5 CH_4 ppm	7/10/996	7/10/996	
READING/ADJUSTMENT	91 ppm	100 ppm	7/10/996	7/10/996	
ZERO GAS:					
MANUFACTURER	Ambient	Ambient			
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT	Ø	Ø			
BATTERY CHECK:	OK	OK	OK	OK	
TIME CALIBRATED:	0655	0655	0705	0705	
CALIBRATED BY:	GL	GL	GL	GL	

CALIBRATION CHECK:					
TIME:	1356	1354	1348	1345	
BY:	DH	DH	DH	DH	
STATUS:	90	94	6.97/9.94/987	7.01/10.0/982	
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE: 9-5-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER	128				
SERIAL / ID NUMBER	A41858				
CALIBRATION STANDARD					
MANUFACTURER	Eagle				
IDENTIFICATION (LOT #)	950751				
CONCENTRATION	95 ppm CH_4				
READING/ADJUSTMENT	~~80~~ 78				
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	Ø				
READING/ADJUSTMENT	Ø				
BATTERY CHECK:	O/K				
TIME CALIBRATED:	1445				
CALIBRATED BY:	CR				

CALIBRATION CHECK:					
TIME:	1830				
BY:	CR				
STATUS:	90 ppm				
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 9-6-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	pH ~~CGI~~	Cond ~~HNu-PID~~
MODEL NUMBER	128	910	910	910	910
SERIAL / ID NUMBER	A41858	9305	9305	9303	9303
CALIBRATION STANDARD					
MANUFACTURER	Eagle	Fisher/HACH	Fisher	Fisher/HACH	Fisher
IDENTIFICATION (LOT #)	950751	946626-24 / 922835-11	09-328-3	946626-24/ 2283511	09-328-3
CONCENTRATION	95 ppm CH_4	4/7	996	4/7	996
READING/ADJUSTMENT	78	4.01/7.00	996	4.02/7.05	996
ZERO GAS:					
MANUFACTURER	Ambient				
IDENTIFICATION (LOT #)	Ø				
READING/ADJUSTMENT	Ø				
BATTERY CHECK:	ok	OK	OK	ok	ok
TIME CALIBRATED:	0720	0745	0745	1350	1340
CALIBRATED BY:	of	DLH	DLH	DLH	DLH

CALIBRATION CHECK:					
TIME:					
BY:					
STATUS:					
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 9-7-95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	pH ~~CGI~~	Cond ~~HNu-PID~~
MODEL NUMBER	pH ~~HyDac 9~~	HyDac 910	HyDac 910	HyDac 910	HyDac 910
SERIAL / ID NUMBER		9303	9303	9305	9305
CALIBRATION STANDARD					
MANUFACTURER		Fisher/HACH	Fisher	Fisher/HACH	Fisher
IDENTIFICATION (LOT #)		946626-24/22835111	09-328-3	94662624/22835-11	09-328-3
CONCENTRATION		4/7	996	4/7	996
READING/ADJUSTMENT		4.02/7.05	996	4.01/6.97	
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:		ok	ok	ok	will not cal
TIME CALIBRATED:		0716	0716	0716	
CALIBRATED BY:		DZH	DZH	DZH	DZH

CALIBRATION CHECK:					
TIME:					
BY:					
STATUS:					
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

INSTRUMENT CALIBRATION

DATE. 9/8/95

INSTRUMENT (1)	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
MODEL NUMBER		HyDac 910	HyDac 910		
SERIAL / ID NUMBER		9303	9303		
CALIBRATION STANDARD					
MANUFACTURER		Fisher / HACH	Fisher		
IDENTIFICATION (LOT #)		946626-24 22835-11	09-328-3		
CONCENTRATION		4/7	996		
READING/ADJUSTMENT		4.07/7.08	996		
ZERO GAS:					
MANUFACTURER					
IDENTIFICATION (LOT #)					
READING/ADJUSTMENT					
BATTERY CHECK:		ok	ok		
TIME CALIBRATED:					
CALIBRATED BY:		DLH	DLH		

CALIBRATION CHECK:	OVA-FID	pH PEN	COND PEN	CGI	HNu-PID
TIME:					
BY:					
STATUS:					
TIME:					
BY:					
STATUS:					

1. OVA-FED: Organic Vapor Analyzer, Flame Ionization Detector manufactured by Foxboro

   pH PEN: Electronic pH tester manufactured by Fisher Brand

   COND PEN: Total dissolved solids tester with automatic temperature correction. Manufactured by Fisher Brand.

   CGI: Combustible Gas Indicator manufactured by Industrial Scientific Devices.

   HNu-PID: Photo - Ionization Detector manufactured by HNu.

APPENDIX F

SOIL AND GROUNDWATER SAMPLING SHEETS

FIELD LOGBOOK SOIL/SEDIMENT SAMPLING DATA

Date 6/13/95 Location H728-HA01

Samplers Used Daniel Howard, Greg Rowell

Drawing of sampling location (including location description as well as the presence of debris, surface sheens, recent excavations, vegetation, etc.)

Weather Sunny, slight breeze, temp 80-85°F

Soil/sediment sampling parameters:

Description of sample sandy soil with gray clay

Time of sample collection 1159

Depth of boring ~~water (for sediment sampling)~~ total: 3ft sample: 2ft

Decontamination (page number reference) DRL/ CDAP B-37

Spoons or spatulas spoon

Trowel

Hand corer

Hand auger hand auger

Bowls ✓

Split spoons

Photograph frame numbers

Signature (of field team personnel making data entry)

Daniel Howard

FIELD LOGBOOK SOIL/SEDIMENT SAMPLING DATA

Date 6/13/95 Location H728-HA02

Samplers Used D. Howard, G. Rowell

Drawing of sampling location (including location description as well as the presence of debris, surface sheens, recent excavations, vegetation, etc.)

Weather sunny, slight breeze, temp ≈85°F

Soil/sediment sampling parameters:

Description of sample sandy soil with dark brown soil

Time of sample collection 1259

Depth of boring ~~water (for sediment sampling)~~ total: 4ft sample: 4ft

Decontamination (page number reference) DHL / CDM 8.37

Spoons or spatulas spoons

Trowel

Hand corer

Hand auger ✓

Bowls ✓

Split spoons

Photograph frame numbers

Signature (of field team personnel making data entry)

Daniel Howard

FIELD LOGBOOK SOIL/SEDIMENT SAMPLING DATA

Date 6/13/95 Location H728-HA03

Samplers Used D. Howard, G. Rowell

Drawing of sampling location (including location description as well as the presence of debris, surface sheens, recent excavations, vegetation, etc.)

Weather Sunny, slight breeze, temp 85°F

Soil/sediment sampling parameters:

Description of sample gray sandy soil with small amount of gray clay

Time of sample collection 1344

Depth of boring ~~water (for sediment sampling)~~ total: 3 ft sample: 3 ft.

Decontamination (page number reference) ~~SOP~~/ DAP B-37

Spoons or spatulas spoon ~~[illegible]~~

Trowel

Hand corer

Hand auger ✓

Bowls ✓

Split spoons

Photograph frame numbers

Signature (of field team personnel making data entry)

Daniel Howard

FIELD LOGBOOK SOIL/SEDIMENT SAMPLING DATA

Date 6/13/95 Location H728-HA04

Samplers Used D Howard, G Rowell

Drawing of sampling location (including location description as well as the presence of debris, surface sheens, recent excavations, vegetation, etc.)

Weather Sunny, slight breeze, temp 80-85° F

Soil/sediment sampling parameters:

Description of sample see boring log

Time of sample collection 1430

Depth of soil boring ~~water (for sediment sampling)~~ Total: 3 ft sample: 2 ft

Decontamination (page number reference) CDAP B-37

Spoons or spatulas spoon

Trowel

Hand corer

Hand auger ✓

Bowls ✓

Split spoons

Photograph frame numbers

Signature (of field team personnel making data entry)

Daniel Howard

FIELD LOGBOOK SOIL/SEDIMENT SAMPLING DATA

Date 6/13/95 Location H728-HA05

Samplers Used D. Howard, G Rowell

Drawing of sampling location (including location description as well as the presence of debris, surface sheens, recent excavations, vegetation, etc.)

Weather Sunny, slight breeze, temp 80-85°F

Soil/sediment sampling parameters:

Description of sample see boring log

Time of sample collection 1528

Depth of boring ~~water (for sediment sampling)~~ total: 3 sample: 3

Decontamination (page number reference) DAP B-37

Spoons or spatulas spoon

Trowel

Hand corer ~~X~~ DH

Hand auger ✓

Bowls ✓

Split spoons

Photograph frame numbers

Signature (of field team personnel making data entry)

David Howard