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SAMPLING WORK PLAN FOR AREA OF CONCERN D NS MAYPORT FL

9/1/2007

TETRA TECH NUS

Comprehensive **L**ong-term **E**nvironmental **A**ction **N**avy

CONTRACT NUMBER N62467-04-D-0055

Sampling Work Plan
for
Area of Concern (AOC) D

Naval Station Mayport
Mayport, Florida

Contract Task Order 0078

September 2007

NAVFAC Naval Facilities Engineering Command
Southeast
2155 Eagle Drive
North Charleston, South Carolina 29406

TETRA TECH NUS, Inc.

07JAX0077

SAMPLING WORK PLAN
FOR
AREA OF CONCERN (AOC) D

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command
Southeast
2155 Eagle Drive
North Charleston, South Carolina 29406

Submitted by:
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CONTRACT NUMBER N62467-04-D-0055
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PREPARED UNDER THE SUPERVISION OF:

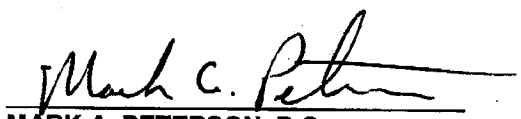

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FIGURE

ACRONYMS

AOC	Area of Concern
bls	Below Land Surface
CLEAN	Comprehensive Long-term Environmental Action Navy
CTO	Contract Task Order
EA	Environmental Assessment
FDEP	Florida Department of Environmental Protection
FOL	Field Operations Leader
ID	Identification
IDW	Investigation Derived Waste
mg/kg	Milligrams per Kilogram
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NAVFAC SE	Naval Facilities Engineering Command Southeast
NAVSTA	Naval Station
Navy	United States Navy
QC	Quality Control
RFI	Resource Conservation and Recovery Act Facility Investigation
SCTL	Soil Cleanup Target Level
SOP	Standard Operating Procedure
SWP	Sampling Work Plan
TtNUS	Tetra Tech NUS, Inc.
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

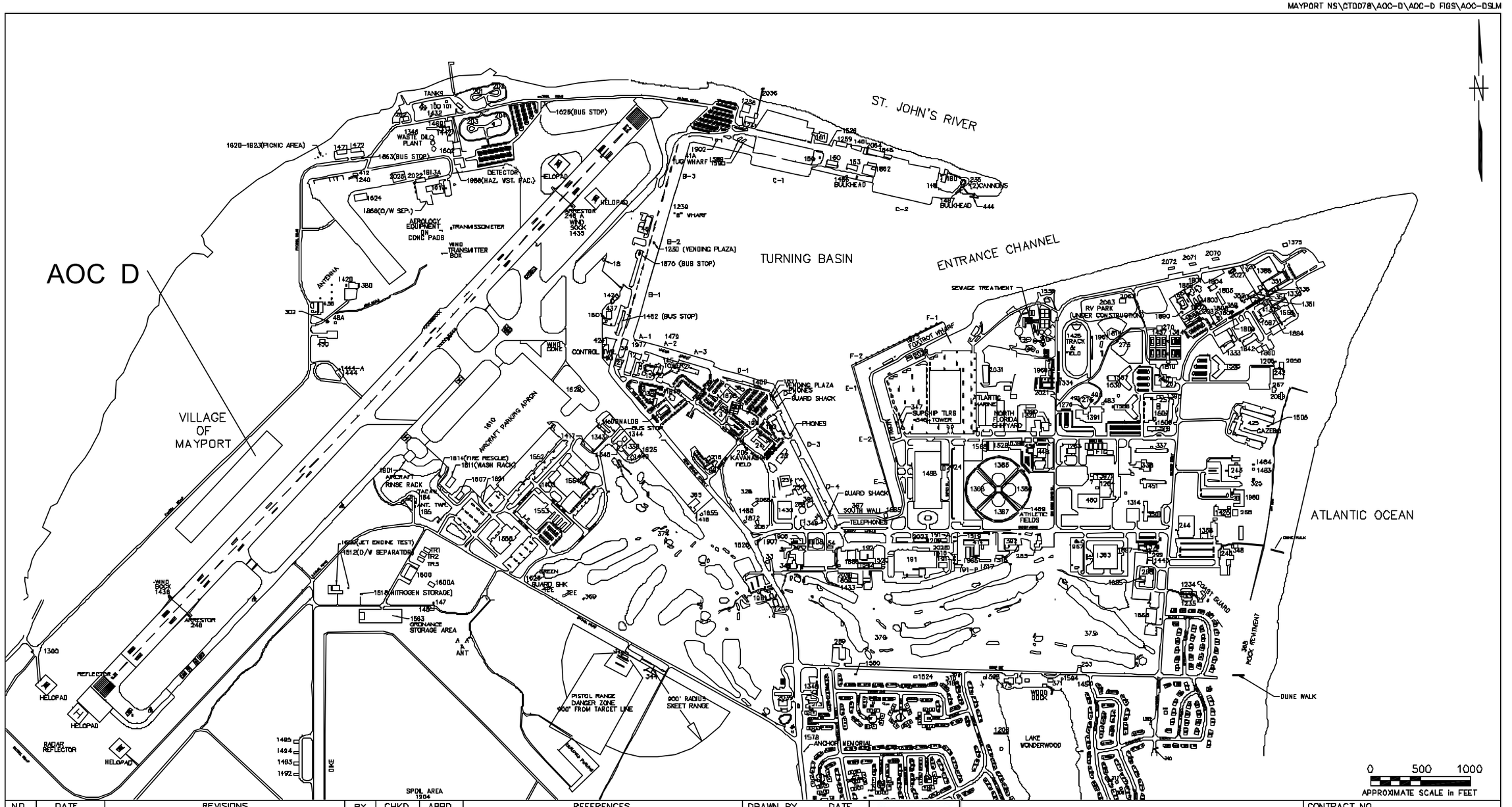
Tetra Tech NUS, Inc. (TtNUS) has prepared this Sampling Work Plan (SWP) for Area of Concern (AOC) D at Naval Station (NAVSTA) Mayport, Mayport, Florida. This SWP was prepared for the United States Navy (Navy), Naval Facilities Engineering Command Southeast (NAVFAC SE) under Contract Task Order (CTO) 0078, for the Comprehensive Long-term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0055.

This work plan is designed to guide soil assessments only at AOC D. The area of investigation is an open field along the flight line of NAVSTA Mayport covering an approximate area of 225 feet in width and 990 feet in length or approximately 5 acres. Future courses of action will be based on the results of soil analyses.

2.0 SITE DESCRIPTION

NAVSTA Mayport is located within the corporate limits of the City of Jacksonville, Duval County, Florida, and is approximately 12 miles to the east northeast of downtown Jacksonville and adjacent to the town of Mayport. The Station complex is located on the northern end of a peninsula bounded by the Atlantic Ocean to the east and the St. Johns River to the north and west. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport, which is located to the west between the Station and the St. Johns River.

AOC D is approximately 500 feet south of the midpoint at the NAVSTA Mayport runway and is distinguishable by grass covered soil, positioned approximately 220 feet west of the runway and 180 feet east of Patrol Road. The elongated soil mound parallels the runway to the west. This area is a secure area and requires approval from NAVSTA Mayport flight operations personnel prior to entering. A map depicting the location of the site in relation to the rest of the base is presented as Figure 2-1.



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY DATE: DRS 08/20/07
CHECKED BY DATE:
COST/SCHED-AREA:
SCALE: AS NOTED

NAVFAC

SITE LOCATION MAP
AOC D
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 00758
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2-1
REV. 0

3.0 HISTORY OF AOC D

The soils located at AOC D were deposited by Triton Marine Construction Corp between November 2002 and January 2003 as part of the dredging/soil excavation of the turning basin. Prior to the placement of this material, Ecology and Environment, Inc. was commissioned by NAVFAC SE to conduct an Environmental Assessment (EA) of the Harbor Operations/Small Craft Berthing and Adjacent Facilities. The report dated April 2000 and titled "Sediment and Groundwater Quality Investigation in Support of EA and Permitting for Harbor Operations/Small Craft Berthing and Adjacent Faculties at Naval Station Mayport Jacksonville, Florida" was written by Ecology and Environment, Inc. of Miami Lakes, Florida.

The objective of the investigation was to collect soil and groundwater samples and establish the physical and chemical nature of the material to be removed to create the Harbor Operations basin and establish potential water quality impacts. Many soil and groundwater samples were collected for analysis during this investigation although the focus of this SWP pertains to soil/sediment stockpiled from the Foxtrot Wharf at the turning basin.

Three sample intervals [(A) 14 to 16 feet, (B) 28 to 30 feet, and (C) 38 to 40 feet] were collected from within the soil excavation area. Soil sample locations W1 and W2 were submitted as representative soil samples from the turning basin for laboratory analysis of priority pollutant metals, volatile organic compounds, and semi-volatile organic compounds. Based on the results of the investigation, the dredge material removed for characterization contained elevated levels of arsenic for each sample bore hole. The W1 sample intervals W1-A [(0.825 milligrams per kilogram (mg/kg)] and W1-B (0.689 mg/kg) and W2 sample intervals W2-A (1.04 mg/kg) and W2-C (5.69 mg/kg) exceeded the Soil Cleanup Target Levels (SCTLs) for arsenic. The regulation at the time of the investigation per Chapter 62-777, Florida Administrative Code, listed the Residential Direct Exposure Level is 0.8 mg/kg and the Industrial Direct Exposure Level as 3.7 mg/kg. No Toxicity Characteristic Leaching Procedure analysis was conducted on these samples. The current arsenic SCTLs are 2.1mg/kg for residential and 12mg/kg for industrial.

In a letter dated July 18, 2003, from Cheryl Mitchell of NAVSTA Mayport to Ms. Mary Nogus of the Florida Department of Environmental Protection (FDEP), the Navy submitted as-built information concerning the capping of the potentially arsenic contaminated soil located along the runway at NAVASTA Mayport. A letter dated July 2, 2003, from Mr. Kevin Lange of HDR Engineering, Inc. to Ms. Mary Nogas of the FDEP documents the completion of a 2-foot cap of soil placed on the potential arsenic impacted soil. The soil was place along the flightline by Triton Marine Construction Corporation of Jacksonville, Florida during the period of time between November 2002 and January 2003.

Based on conversations during the November 2006 NAVSTA Mayport Partnering Team meetings, specifically a plan to divide the site into 19 ¼-acre parcels and collect four soil samples from each ¼-acre of the stockpile material was generated. As necessary, Florida Land Use statistics will be used to determine the risk factor of the arsenic to the environment in this area.

4.0 OBJECTIVES AND SCOPE OF PROPOSED ASSESSMENT

4.1 OBJECTIVES

The SWP provides the rationale and methodology for performing field activities to characterize soil conditions at the referenced site. The objective of the field investigation is to determine if soil has been adversely impacted by previous operations at the site. The data collected during the investigation will be used to prepare an AOC D Soil Sample Report. The AOC D Soil Sample Report will assimilate information from the investigation and provide a characterization of site conditions for which to base future courses of action.

The objectives of the AOC D SWP are as follows:

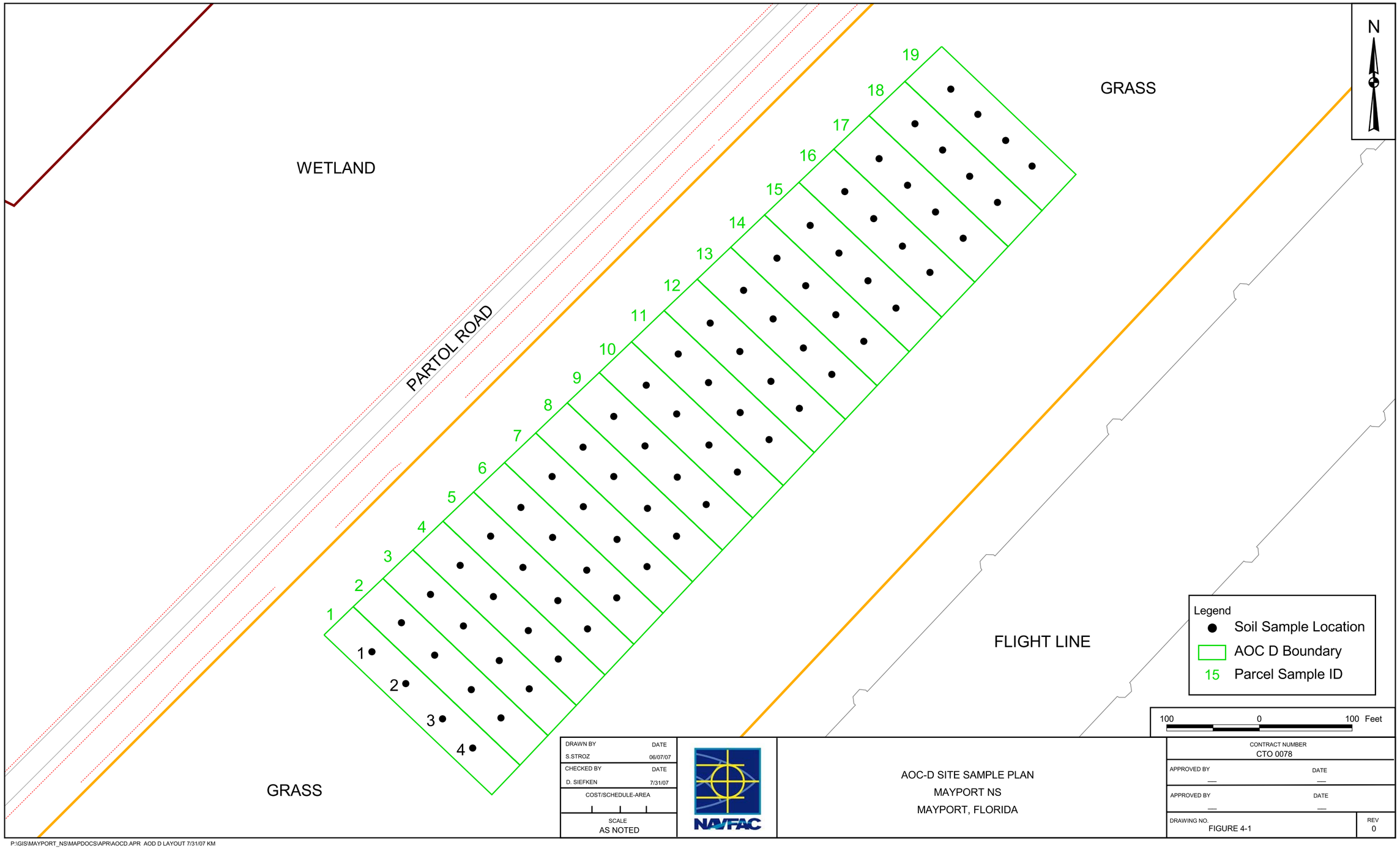
- Using a hand auger, advance approximately 3 to 4 feet below land surface (bls) and collect a soil sample. The sample will be collected and analyzed by Katahdin Laboratories, a Florida state licensed laboratory.

- The results of the investigation will be compiled in a Soil Sample Letter Report and used to determine if additional investigation is warranted. If contamination is present, then appropriate corrective measures may be considered and corrective actions will be implemented at AOC D as required.

4.2 PROPOSED ASSESSMENT ACTIVITIES

To support site assessment activities, a TtNUS representative will collect 76 soil samples using a hand auger as shown on Figure 4-1. Samples will be submitted to Katahdin Laboratories for analysis of arsenic. The field activities described above will be conducted during a 1-week sampling event. Prior to the field activities, mobilization, coordination, and procurement activities will be conducted. Tasks associated with mobilization include the following:

- Field coordination (i.e., coordinating for site access, obtaining field equipment and consumables, etc.).
- Subcontractor procurement and coordination.
- Utility clearance.
- Prior to the sampling, TtNUS representatives shall fulfill the requirements of the NAVSTA Mayport Excavation Permit requirement and, while on base, the TtNUS representative shall abide by base rules for civilian personnel.



DRAWN BY	DATE
S.STROZ	06/07/07
CHECKED BY	DATE
D. SIEFKEN	7/31/07
COST/SCHEDULE-AREA	
SCALE	AS NOTED

NAVFAC

AOC-D SITE SAMPLE PLAN
MAYPORT NS
MAYPORT, FLORIDA

CONTRACT NUMBER	CTO 0078
APPROVED BY	DATE
—	—
APPROVED BY	DATE
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DRAWING NO.	REV
FIGURE 4-1	0

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- Project “Kick-off” and health and safety daily “tailgate” meetings.
- Gather information to support a Resource Conservation and Recovery Act Facility Investigation (RFI), if required.

The work in the following sections will be complete in accordance with the TtNUS’ company Standard Operating Procedures (SOPs) and FDEP SOPs (SOP 000/01, 2004).

4.2.1 Site Preparation

Prior to sampling, the establishing of site boundaries shall be completed. Using aerial photographs, field observation, and a survey map prepared by the subcontractor, the boundaries of the dredge material shall be marked in the field prior to sampling. The site is rectangular in shape, and the eastern boundary of the dredge material maintains a tangent position of 220 feet west of the runway. The runway portion of the tarmac is linear and oriented in the northeastern to southwestern directions. The approximate size of the dredge material area to be assessed is approximately 5 acres and covers an approximate area measuring 225 feet in width and 990 feet in length. The rectangular site will be divided into lateral transects forming ¼-acre parcels. Each ¼-acre parcel shall be given a letter beginning with A for specific parcel and sample identification (ID). See sample ID nomenclature in Section 4.2.3 for specific sample ID documentation.

4.2.2 Soil Sampling Methods

Sampling protocol shall be followed per FDEP SOP 0001/01, TtNUS SOPs and the work will be conducted in a safe manner in accordance with the Site Health and Safety Plan. At this site, all site workers are required to maintain current Occupational Safety and Health Administration 40-hour and or 8-hour (refresher) Hazardous Waste Training and maintain Level D personal protective equipment while on site.

A single field sampling phase is needed to complete the arsenic sampling at AOC D. Four soil samples will be collected from each ¼-acre parcel. Sample locations shall be equal distance apart to ensure greatest coverage and collected using a hand auger pushed to a depth of 3 to 4 feet bls. The depth of 3 to 4 ft is required because a 2 ft fill cap that was placed over the arsenic impacted soil. The hand auger will be cleaned with Liquinox, deionized water, and isopropanol between sample locations. All personnel coming in contact with the samples will wear latex gloves and change gloves between sample locations to help minimize cross contamination. All decontamination water shall be containerized for disposal. Once collected, the sample shall be place on ice in preparation for shipment to Katahdin Laboratories.

A soil and sediment sample log sheet will be maintained for each of these samples. These samples will be analyzed for arsenic using United States Environmental Protection Agency (USEPA) Method SW846 6010.

4.2.3 Equipment Decontamination

The equipment involved in field sampling activities will be decontaminated prior to and during sampling activities in accordance to FDEP SOP FC1000: Cleaning/Field Decontamination Procedures. Non-disposable equipment used for collecting samples will be decontaminated prior to beginning field sampling and between sample locations.

4.2.4 Sample Handling

Sample handling includes the selection of sample containers, preservatives, allowable holding times, and the analyses requested. Sample handling procedures will be in accordance with FDEP SOP 001/01 FS1000 and FS2200. The arsenic samples require 4 ounces of soil and have a 180-day hold time. Once collected, the samples are to be placed on ice and cooled to 4 degrees Celsius.

4.2.5 Sample Nomenclature

Sample ID shall have a sample prefix (MPT) to designate which base the samples are collected followed by sequential lettering (A through D) which designates the parcel, the sample number from within the parcel, and the sample depth.

Example: MPT-A-02-04

This example is representative of a sample collected from the first parcel, the second sample location, and collected at a depth of 4 feet bls. For soil samples, the sequence number will be representative of the lower depth of the soil sample (e.g., a soil sample collected from the 3 to 4 foot interval of a soil boring will have a sequence number of 4).

4.2.6 Sample Custody, Packaging, and Shipping

Custody of samples must be maintained and documented at all times. Chain-of-custody begins with the collection of the samples in the field. FDEP SOP 001/01 FS 1000 and TtNUS SOP SA-6.3 provide a description of the chain-of-custody procedures to be followed.

Samples will be packaged and shipped in accordance with FDEP SOP 001/01 FS1000: General Sampling and applicable sections of FS2200 and FS3000. FS1000 also addresses the topics of containers, holding times, and sample preservations. The field operations leader (FOL) will be responsible for completion of the following forms when samples are collected for shipping:

1. Sample labels
2. Chain-of-custody labels
3. Appropriate labels applied to shipping coolers
4. Chain-of-custody forms
5. Federal Express air bills

All samples are to be shipped to Katahdin Analytical which uses two sample receiving addresses. For samples that arrive to the laboratory on Monday through Friday, address A for the laboratory (see below) will be used. Samples collected on Friday and shipped on Saturday require coordination with the Andrea Colby of Katahdin Analytical for a laboratory employee to pick up the samples at Federal Express. The Federal Express hold for pick up location is the address listed below as address (B).

(A) Katahdin Analytical
600 Technology Way
Scarborough, ME 04074
Ph 207/874-2400

(B) Saturday receipt only:
Katahdin Analytical
95 Hutchins Drive
Portland, ME 04102
Ph 207/874-2400

4.2.7 Quality Control (QC) Samples

QC samples will be collected during the soil and groundwater assessment event in general accordance to FDEP SOP 001/01 FQ1000: Field Quality Control Requirements. Appropriate documentation of QC samples will be collected or generated during environmental sampling activities. QC samples will be collected in accordance with the requirements established during the Plan of Action negotiations. The total numbers of QC and laboratory samples required are listed in Table 4-1.

Equipment Rinsate and Field Blanks – Equipment blanks are required for sampling equipment used during the investigation. At least one blank is required and then every five percent of soil samples collected.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) – At lease one sample or five percent of all samples in a sample set.

TABLE 4-1
SUMMARY OF SAMPLING ACTIVITIES

Sampling Work Plan
AOC D
Naval Station Mayport
Mayport, Florida

Sample Type	Soil Samples	MS/MSD	Trip Blanks	Rinsate Blanks[1]	Field Blanks	Total Samples	Parameter	Analysis Method
Soil Samples	76	8	none	1	7	91	Arsenic	USEPA SW-846 6010

[1] = A pre-equipment rinsate blank will be collected.

4.2.8 Record Keeping

In addition to chain-of-custody records associated with sample handling, packaging, and shipping, certain standard forms will be completed for sample description and documentation. These shall include sample log sheets (for soil samples), daily activities record, and logbooks.

The FOL will maintain a bound/weatherproof field notebook. The FOL, or designee, will record pertinent information related to sampling or field activities. This information may include sampling time, weather conditions, unusual events (e.g., well tampering), field measurements, site visitors, descriptions of photographs, etc. At the completion of field activities, the FOL shall submit to the TtNUS Task Order Manager all field records, data, field notebooks, logbooks, chain-of-custody receipts, sample log sheets, daily logs, etc.

4.2.9 Investigative Derived Waste (IDW) Management

Purge water and decontamination water will be collected and containerized in Department of Transportation approved (Specification 17C) 55-gallon drums. Each drum will be sealed, labeled, and transported to a pre-designated staging area designated by NAVSTA Mayport personnel (behind Building 1613) located within NAVSTA Mayport pending groundwater analytical results. All decontamination materials generated during the site investigation will be containerized for proper disposal. It is the responsibility of TtNUS to arrange for disposal of the IDW through the NAVSTA Mayport Hazardous Waste Storage Facility following completion of the field sampling. Appropriate IDW documentation will be maintained in the project field log book. In addition to documenting the IDW in the field log book, an IDW management sheet will be completed for each drum stored at Building 1613, and a

copy of this sheet will be provided to Diane Racine, NAVSTA Mayport, on a weekly basis. See Appendix A for a copy of the IDW management sheet.

4.2.10 Reporting

Information obtained from field activities detailed in this SWP will be incorporated into a RFI, if required, for AOC D. Field forms to be used during this project are provided as Appendix A.

APPENDIX A

FIELD FORMS

Tetra Tech NUS, Inc.

DAILY ACTIVITIES RECORD

PROJECT NAME: _____ **PROJECT NUMBER:** _____

CLIENT: _____ **LOCATION:** _____

DATE: _____ **ARRIVAL TIME:** _____

Tt NUS PERSONNEL: _____ **DEPARTURE TIME:** _____

CONTRACTOR: _____ **DRILLER:** _____

ITEM	QUANTITY ESTIMATE	QUANTITY TODAY	PREVIOUS TOTAL QUANTITY	CUMULATIVE QUANTITY TO DATE

COMMENTS: _____

_____

_____

_____

APPROVED BY:

_____ _____

Tt NUS REPRESENTATIVE DRILLER

DATE: _____

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: _____
Project No.: _____

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: _____
Sample Location: _____
Sampled By: _____
C.O.C. No.: _____

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: / Method: / Monitor Readings (Range in ppm):	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Naval Station Mayport Investigative Derived Waste Drum Log

Contractor Company Name: _____

Individual Name: _____

Location Name: _____
(i.e. SWMU number, Bldg number)

Date of generation: _____

Expected date of results: _____

Drum Number: _____
(Use site # and unique drum number)

Type of Waste (i.e. drill cuttings, purge water)	**Quantity of Waste** (gals/lbs)	**Date**	**Individual's Initials/ Name**

Enclosure (1)

Revised 1/24/2006