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WORK PLAN ADDENDUM 5 FOR POLYAROMATIC HYDROCARBONS CONTAMINATED
SOIL REMOVAL AT STUDY AREA 16, 18 AND 54 WITH TRANSMITTAL LETTER NTC
ORLANDO FL
2/19/2002
CH2M HILL



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February 19, 2002

Ms. Barbara Nwokike
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Subject: Contract No. N62467-98-D-0995
Contract Task Order No. 0017
Naval Training Center (NTC) Orlando - Orlando, Florida
Work Plan Addendum No. 05 for the PAH-Contaminated Soil Removal at Study
Areas 16, 18, and 54

Dear Ms. Nwokike:

Enclosed please find one hard copy and two electronic copies of Work Plan Addendum No. 05 for the PAH-Contaminated Soil Removal at Study Areas 16, 18, and 54. The scope of work for the removal activities at each of the sites has been agreed upon by the Orlando Partnering Team.

We are prepared to mobilize for site activities the week of February 25, 2002. Accordingly, your expeditious approval of this document is greatly appreciated.

If you have any questions regarding this document, please call.

Sincerely,

CH2M HILL CONSTRUCTORS, Inc.

A handwritten signature in blue ink that reads "Steven N. Tsangaris".

Steven N. Tsangaris, P.E.
Project Manager

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CCI Project File No. 152044

**Work Plan Addendum No. 05
PAH-Contaminated Soil Removal at
Study Areas 16, 54, and 18
Naval Training Center
Orlando, Florida**

Revision 00

**Contract No. N62467-98-D-0995
Contract Task Order No. 0017**

Submitted to:

**U.S. Naval Facilities
Engineering Command
Southern Division**

Prepared by:



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February 2002

Work Plan Addendum No. 05

PAH-Contaminated Soil Removal at Study Areas 54, 16, and 18

Naval Training Center

Orlando, Florida

Revision 00

Contract No. N62467-98-D-0995

Contract Task Order No. 0017

Submitted to:

**Department of the Navy, Southern Division
U.S. Naval Facilities Engineering Command**

Prepared by:



February 2002

Prepared/Approved By:

Steve Tsangaris, P.E., Project Manager

Date

Approved By:

R. Scott Newman, Program Manager

Date

Client Acceptance:

U.S. Navy, Responsible Authority

Date

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Acronym List

AALA	American Association of Laboratory Accreditation
AASHTO	American Association of State Highway and Transportation Officials
ACO	Administrative Contracting Officer
AFCEE	Air Force Center for Environmental Excellence
ASTM	American Society for Testing and Materials
bls	below land surface
CCI	CH2M HILL Constructors, Inc.
CFR	Code of Federal Regulation
CLEAN	Comprehensive Long-term Environmental Navy
COTR	Contracting Officer Technical Representative
CTO	Contract Task Order
DOT	Department of Transportation
DQO	Data Quality Objectives
FAC	Florida Administrative Code
FAR	Federal Acquisition Regulation
FDEP	Florida Department of Environmental Protection
HLA	Harding-Lawson Associates
HMR	Hazardous Materials Regulation
HSP	Health and Safety Plan
IR CDQM	Installation Restoration Chemical Data Quality Manual
LDR	Land Disposal Restriction
MCLB	Marine Corps Logistics Base
mg/kg	milligrams per kilogram
mL	milliliter
MRD	Missouri River Division
MSDS	Material Safety Data Sheet
MS/MSD	matrix spike/matrix spike duplicate
NAVFAC	Naval Facilities Engineering Command
NGVD	National Geodetic Vertical Datum
NIST	National Institute of Standard sand Technology
NTC	Naval Training Center
NVLAP	National Voluntary Laboratory Accreditation Program
OSHA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PPE	personal protective equipment
ppm	parts per million
PSC	Potential Source of Contamination
QA/QC	quality assurance/quality control
RAC	Response Action Contract
RCI	reactivity, corrosivity, ignitability
RCRA	Resource Conservation and Recovery Act
RPM	Remedial Project Manager

SA	Study Area
SAP	Sampling and Analysis Plan
SCTL	Soil Cleanup Target Levels
SVOC	Semi-volatile organic compound
SWMU	Solid Waste Management Unit
TAL	Target analyte list
TAT	Turnaround time
TCL	Target compound list
TCLP	Toxicity characteristic leachate procedure
TSCA	Toxic Substances Control Act
TtNUS	Tetra Tech NUS, Inc.
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
WMP	Wastestream Management Plan

1.0 Introduction

CH2M HILL Constructors, Inc. (CCI) has been contracted by the Department of the Navy, Southern Division Naval Facilities Engineering Command (NAVFAC), to prepare this Work Plan Addendum No. 5 for the removal of polynuclear aromatic hydrocarbon (PAH) contaminated soil at Study Areas (SA) 54, 18, and 16 at the Naval Training Center (NTC), Orlando, Florida. This work is being performed under Response Action Contract (RAC) No. N62467-98-D-0995, Contract Task Order (CTO) No. 0017.

CCI will use the procedures outlined in this Work Plan Addendum to complete the work at these three sites. Under this scope of work, the following tasks will be performed:

SA 54

- Utility surveys
- Partial chain-link fence removal and replacement
- Tree removal and disposal
- Manual digging and disposal of PAH contaminated soils in utility corridors
- Excavation and disposal of the PAH contaminated soils
- Clean backfill of the excavated areas
- Site restoration
- Storage, characterization, transportation, and disposal of wastes (including contaminated soil)
- Final decontamination and demobilization

SA 18

- Utility surveys
- Excavation and disposal of the PAH contaminated soils
- Clean backfill of the excavated areas
- Site restoration (including asphalt road replacement, if necessary)
- Storage, characterization, transportation, and disposal of wastes (including contaminated soil)
- Final decontamination and demobilization

SA 16

- Utility surveys

- Excavation and disposal of the PAH-contaminated soils
- Clean backfill of the excavated areas
- Site restoration (including asphalt road replacement, if necessary)
- Storage, characterization, transportation, and disposal of wastes and contaminated soil
- Final decontamination and demobilization

Horizontal and vertical excavation limits have been determined using laboratory data provided in previous investigation reports obtained by CCI; therefore, no confirmation sampling will be required.

This Work Plan Addendum is organized into the following sections of text and appendices:

Section 1.0 Introduction includes the site background and conditions, the required scope of work, and the project schedule for these sites.

Section 2.0 Sampling and Analysis Plan addresses project-specific sampling and analysis issues for waste characterization and disposal activities to be completed at these sites.

Section 3.0 Waste Management Plan discusses the characterization, disposal, handling, and transportation of wastes (including contaminated soils) encountered or generated during the work completed at SA 16, SA 54, and SA 18.

Section 4.0 Quality Control Plan. The site-specific project organization for this CTO is included in this Work Plan Addendum. Other quality control information includes the quality administrators, the project organization for the work to be completed at SA 16, SA 54, and SA 18, and the definable features of work for each project site.

Section 5.0 References lists the references used in developing this Work Plan Addendum.

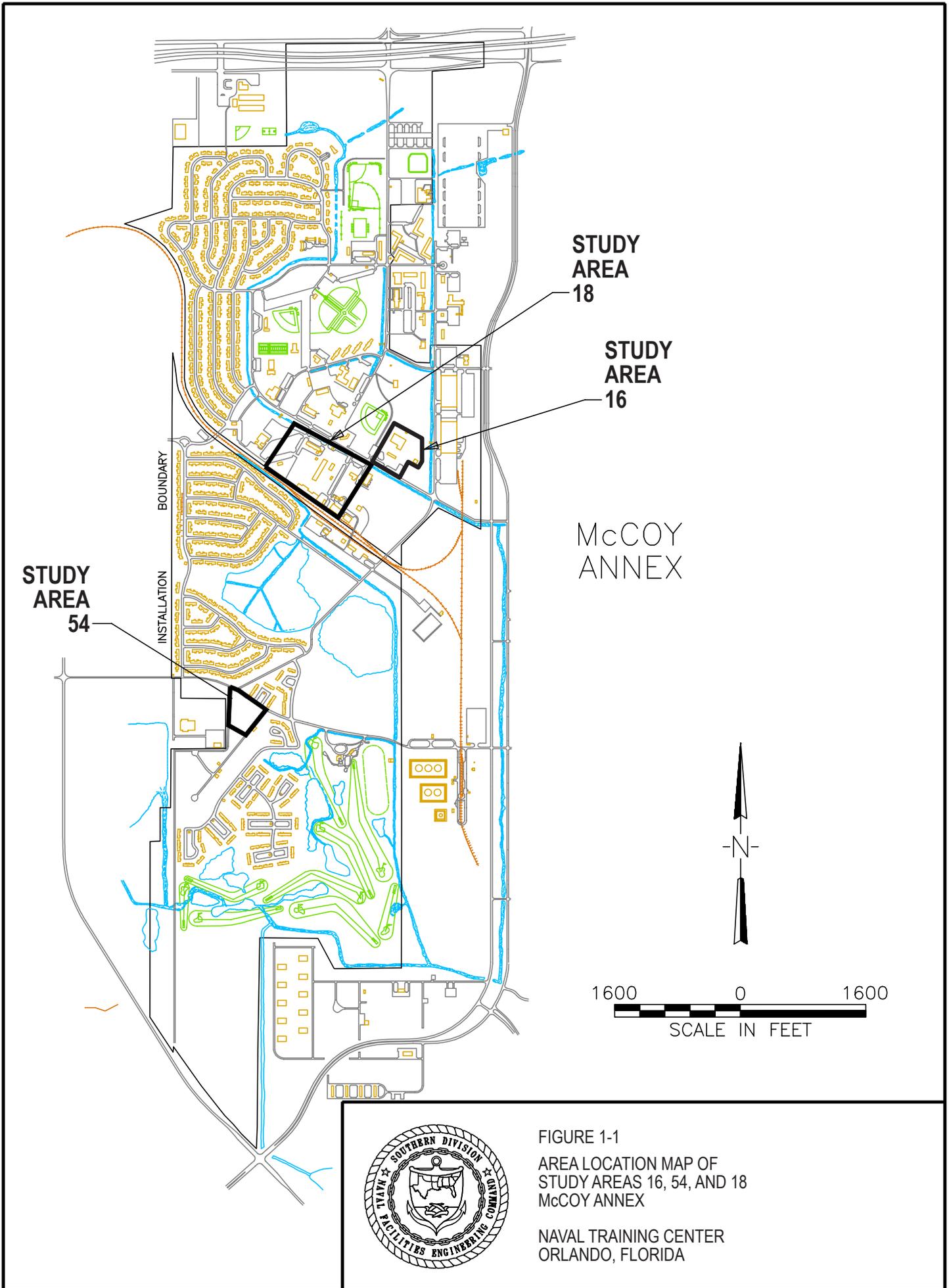
The following support documents are presented as appendices to this Work Plan Addendum.

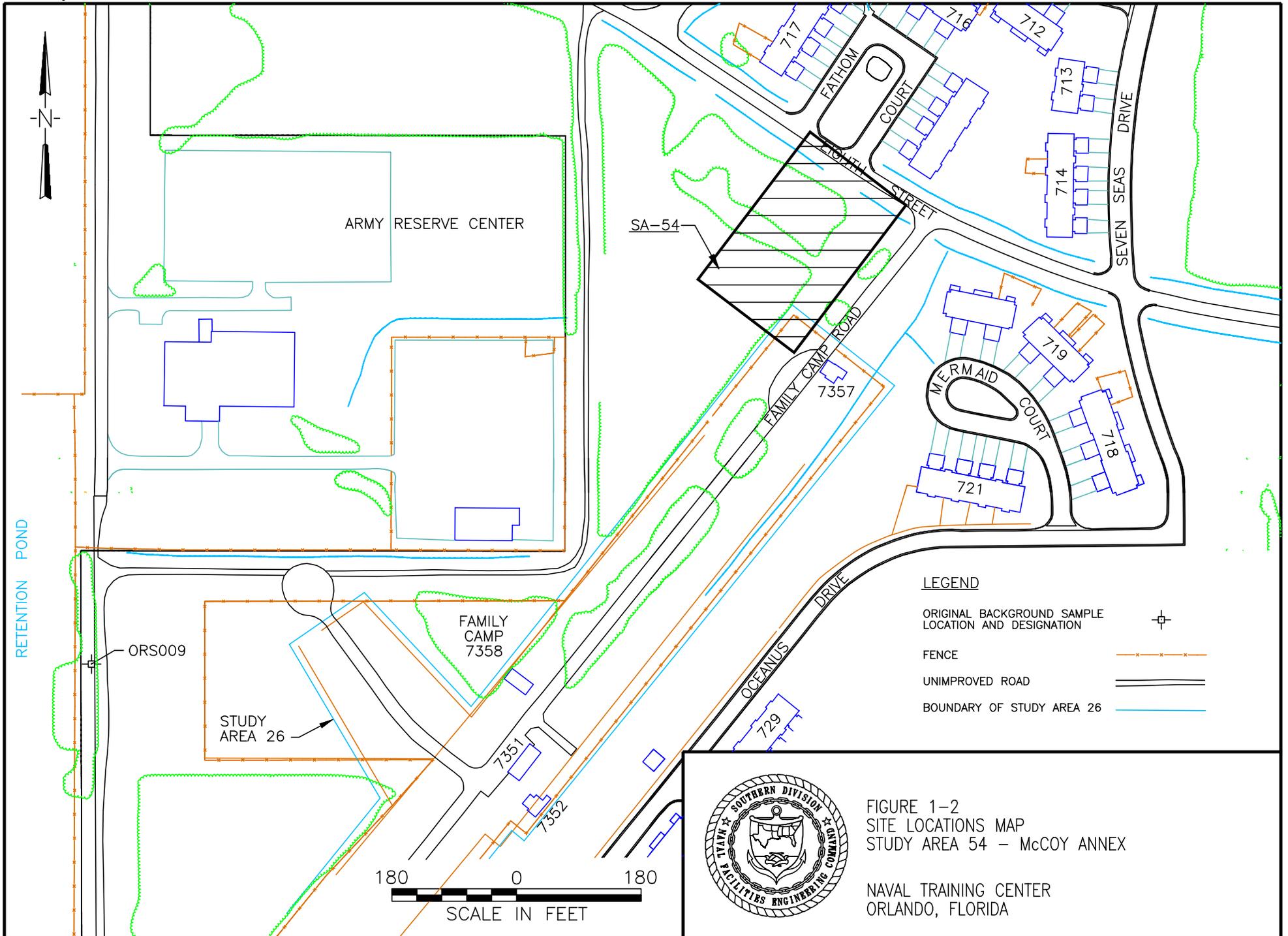
- Appendix A - Project Schedule
- Appendix B - Submittal Register
- Appendix C - Testing Plan and Log

1.1 Site History and Previous Investigations

1.1.1 Study Area 54

SA 54 is located in the southwest portion of McCoy Annex at the former NTC Orlando, Florida. An area location map showing SA-54 is shown on Figure 1-1. The site is located in a pine grove on the corner of Eighth Street and Family Camp Road. The SA 54 site location map is shown in Figure 1-2.





LEGEND

ORIGINAL BACKGROUND SAMPLE LOCATION AND DESIGNATION



FENCE



UNIMPROVED ROAD



BOUNDARY OF STUDY AREA 26



FIGURE 1-2
SITE LOCATIONS MAP
STUDY AREA 54 - MCCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

According to a previous report (HLA, August 1999), the family campsite was once a small airstrip called the Pinecastle Aero Club. There was an aircraft hangar and several other buildings associated with that club. The airstrip was operated in the 1950s. During this period, the specific area was used to park trucks and maintenance vehicles where diesel fuel may have discharged to the ground. In December 1996, one soil sample (ORS016) was collected from this area. The December 1996 results indicated total PAH concentrations exceeded soil cleanup target levels (SCTLs) under Chapter 62.777, Florida Administrative Code (FAC), in the surface soils (0 to 2 feet below land surface [bls]).

In 1999, Harding-Lawson Associates (HLA) conducted a soil assessment by establishing a grid sampling system from soil sample ORS016. The soil assessment was conducted to determine the extent of PAH constituents in the surface soils. The sampling methodology included the use of immunoassay (IA) test kits and laboratory confirmation analysis for USEPA Method 8270. Two samples were collected per boring location (surface to 1 foot bls and 2 to 3 feet bls). Based on the laboratory confirmation results, two soil borings (ORS057 and ORS058) collected within the grid system indicated PAH concentrations above the SCTLs at both depth intervals.

In July 2001, Tetra Tech NUS Inc. (TtNUS) conducted further soil assessment activities by establishing a grid system around previous soil borings installed at the site. A total of 69 surface soil boring samples were collected at various depths for PAH constituent analysis using USEPA Method 8310 to establish the limits of the area to be remediated. Based on the laboratory analytical results, two soil removal areas (Areas A and B) were designated at SA 54, as determined by the TtNUS assessment. A site map showing the excavation areas is shown in Figure 1-3.

The objective of the cleanup activities will be to remove and dispose of contaminated soil at the site exceeding the State of Florida commercial/industrial SCTLs.

1.1.2 Study Area 18

The site area is located in the central portion of McCoy Annex. An area location map showing SA 18 is shown on Figure 1-1.

This site was used as a naval training facility, and specific areas on the site were used to park military equipment and maintenance vehicles where diesel fuel may have discharged to the ground. Four excavation areas (Areas 1 through 4) have been identified, based on previous assessment activities conducted by CLEAN contractors. These excavation areas are included in Figure 1-4.

The objective of the cleanup activities will be to remove and dispose of contaminated soil at the site exceeding the State of Florida residential SCTLs.

1.1.3 Study Area 16

The site area is located in the central portion of McCoy Annex. An area location map showing SA 16 is shown on Figure 1-1.

This site served as the former motor pool. The site is relatively flat with surface drainage towards drainage ditches east and southeast of the site. An area of the drainage ditch to the

LEGEND

- SOIL SAMPLE 
- PAH > IND. SCTL 
- NO PAH > IND. SCTL 

LOCATION COORDINATES		
LOCATION	NORTHING	EASTING
35	1488245	545698
34	1488235	545708
50	1488238	545725
30	1488280	545753
68	1488301	545792
75	1488331	545778
90	1488385	545783
91	1488393	545789
92	1488401	545796
92a	1488418	545807
106a	1488451	545755
106	1488427	545739
100	1488378	545752
108	1488368	545717
71	1488325	545722
61	1488314	545729
97	1488297	545711
63	1488279	545694
66	1488267	545679
102	1488247	545651
103	1488216	545626
95	1488200	545638
116	1488191	545659
115	1488206	545672
114	1488221	545685

ROUNDED TO NEAREST FOOT

NOTES:

- 1) EXCAVATION DEPTH TO BE 2 FEET; REPLACE WITH CLEAN SOIL.
- 2) A WATER LINE IS LOCATED SOUTHWEST OF DRAINAGE SWALE ALONG EIGHTH STREET.

TREE NOTES:

APPROX. 60 PINE TREES TO BE REMOVED. 8"-10" AVERAGE DIA. 40'-60' TALL

AREA B
AREA TO BE EXCAVATED
(30 CUBIC YARDS)

AREA A
AREA TO BE EXCAVATED
(1038 CUBIC YARDS)

OVERBURDEN SOIL PILE
(TO BE REMOVED APPROX. 20 CUBIC YARDS)

FENCE AREA TO BE REMOVED AND REPLACED

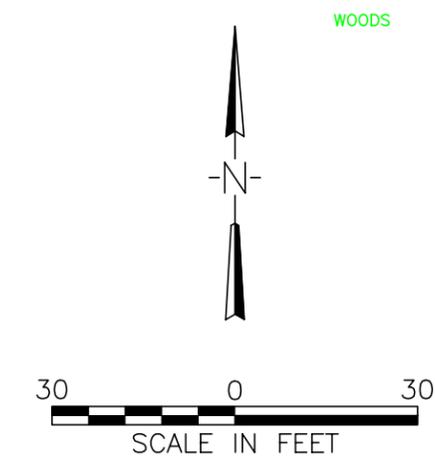


FIGURE 1-3
SOIL EXCAVATION LOCATION MAP
STUDY AREA 54 - McCOY ANNEX
AUGUST 2001
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

n11x17b.dgn

SOURCE:
ROADS, BUILDINGS, ETC. ARE FROM A SURVEY
BY DEMAPS, INC. AND REPS, INC. IN 1997.

LEGEND

- MONITORING WELL ⊙
- SURFACE SOIL SAMPLE ⊕
- NO PARAMETERS > RESIDENTIAL SCTL ⊕
- AT LEAST 1 PARAMETER > RESIDENTIAL SCTL ⊕

NOTES:

- 1) ALL SURFACE SOIL SAMPLE LOCATIONS ARE APPROXIMATE.
- 2) LOCATIONS FOR WELLS OLD-18-05 AND OLD-18-06 ARE APPROXIMATE.
- 3) EXCAVATION DEPTH TO BE 2 FEET; REPLACE WITH CLEAN SOIL.

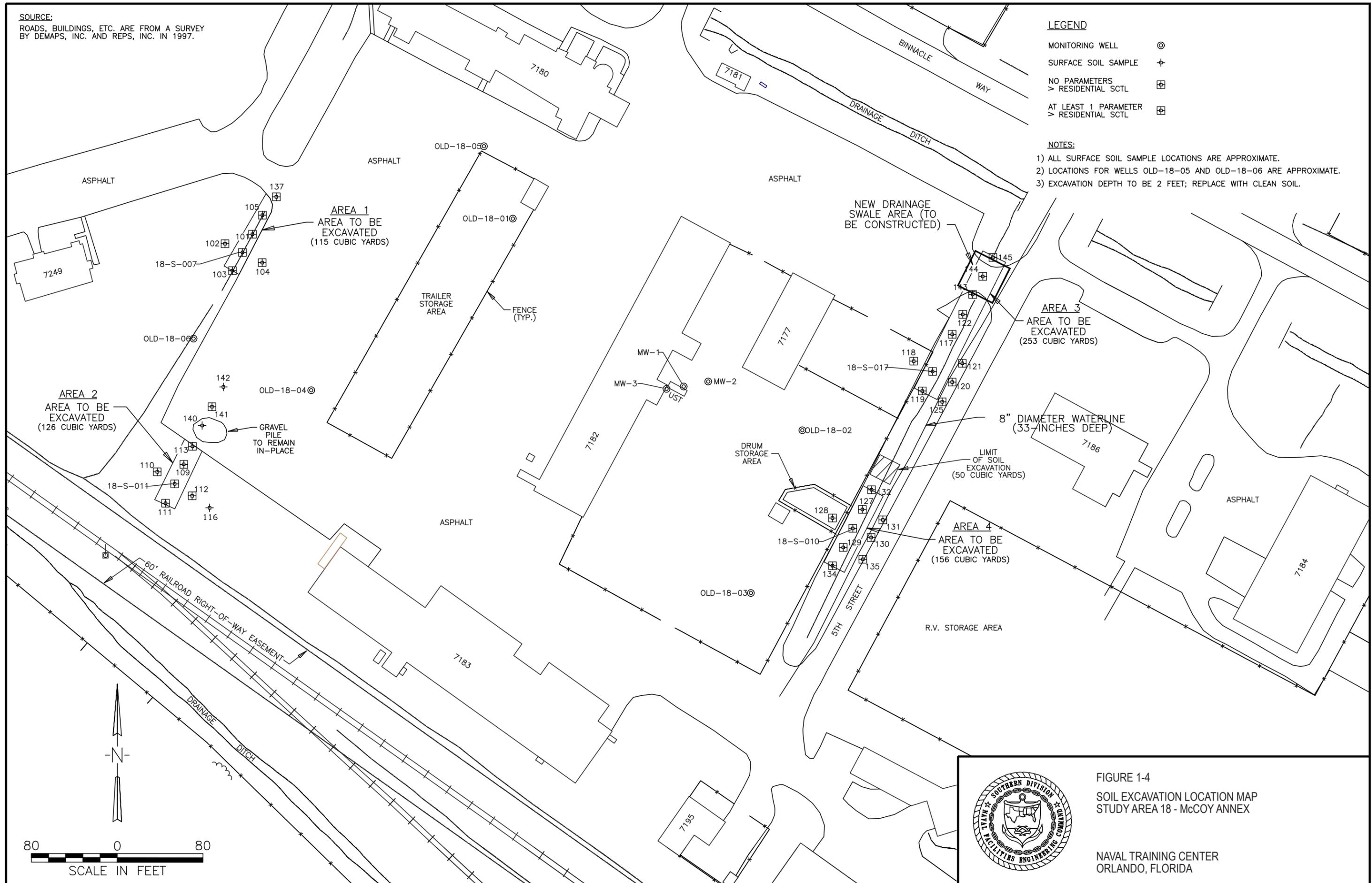


FIGURE 1-4
SOIL EXCAVATION LOCATION MAP
STUDY AREA 18 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

southeast of the former motor pool area was identified in previous investigations (conducted by Comprehensive Long-term Environmental Navy [CLEAN] contractors) as requiring excavation. This excavation area is included on Figure 1-5.

The objective of the cleanup activities will be to remove and dispose of contaminated soil at the site exceeding the State of Florida industrial SCTLs.

1.2 Scope of Work

1.2.1 Mobilization, Pre-Excavation Activities and Setup of Temporary Facilities

This task will consist of the mobilizing personnel, equipment, subcontractors, and materials to SA 54, SA 16, and SA 18, and the establishment of temporary facilities to conduct the contaminated soil removal. A pre-construction meeting will be held at the NTC caretaker office prior to initiating work at the site. A site walk through will be conducted at both sites. Cellular telephones will be used for site communication at both sites. Storm water control measures (e.g., silt fence installation) will be implemented, as necessary, to control erosion and storm water run-on and run-off.

Study Area 54

Since most of the work area at SA-54 is included in a pine tree grove, trees will need to be removed prior to initiating excavation activities. CCI will obtain all necessary permits to remove the trees. Approximately 60 Southern Pines will be removed (stump and root base included) and disposed offsite. Only the trees within the footprint of the excavation areas will be removed.

The portion of the existing chain link fence located at sample locations 114, 115, and 116 (see Figure 1-3) will be partially and temporarily removed in order to conduct the soil excavation activities in this area. The chain link fence will be replaced or reinstalled in the same area upon completion of backfilling, compaction, and sodding.

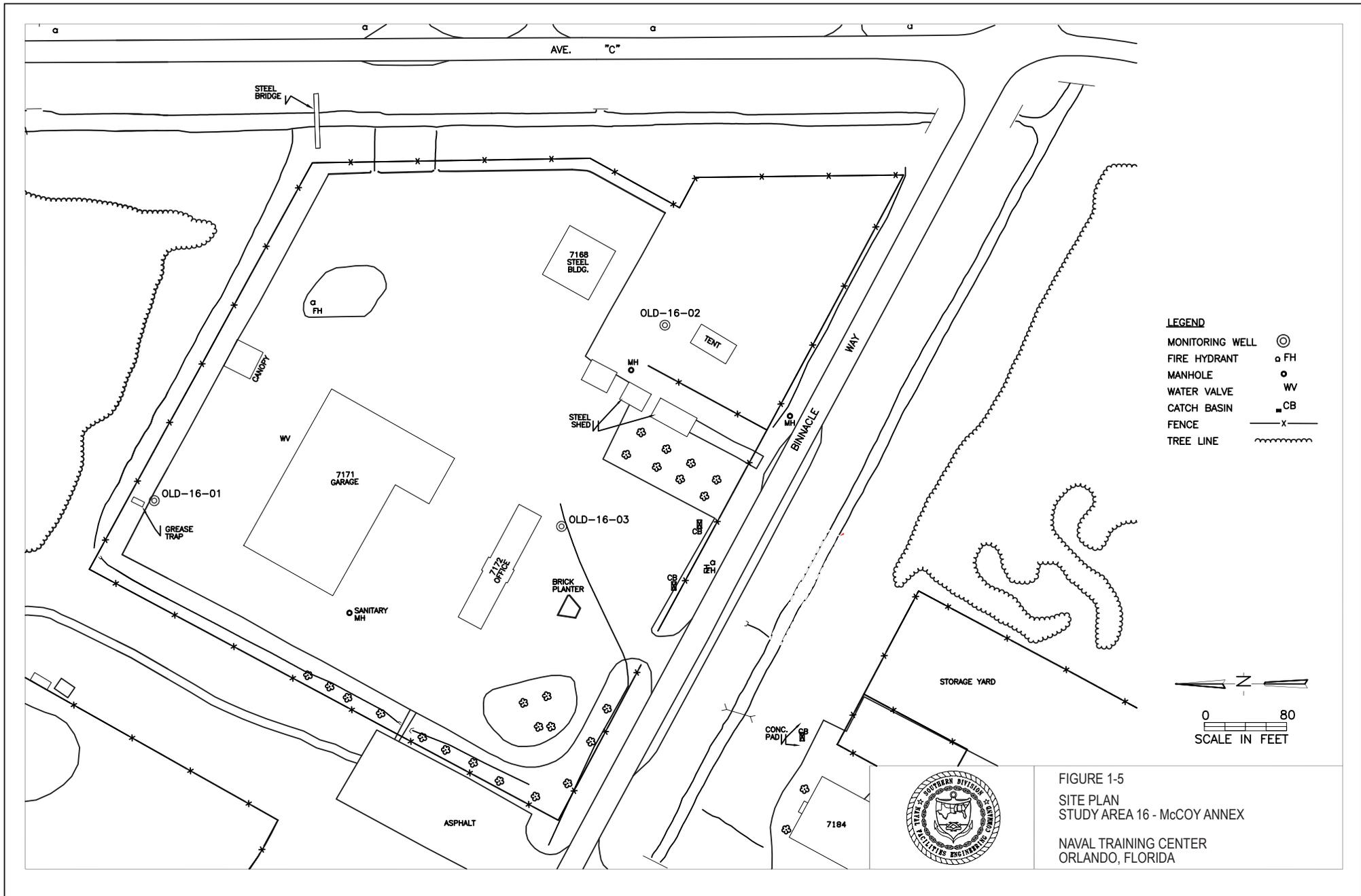
Study Area 18

One 24-inch-diameter concrete storm water drainage culvert is located in the drainage swale area near Excavation Area 3. The culvert is 80 feet long and the top of the pipe is 33 inches bls. Excavation will be required in the drainage swale area 2 feet bls. Therefore, the culvert may require removal and replacement.

1.2.2 Subsurface Utilities/Excavation Permit

Prior to the commencement of any excavation, CCI will obtain utility clearance and excavation permits. Documentation of the utility survey (including water, electricity, natural gas, fuel pipelines, telephone, or other utility lines) and its results will be completed before performing any subsurface activities. Any utilities identified adjacent to the work area will be clearly marked and identified. Once work begins, the progress of excavation conducted with heavy equipment will be continuously monitored by using a "spotter" for evidence of subsurface obstructions.

Underground utility locates were conducted by the Navy and other personnel at each of the sites.



Study Area 54

Underground utilities identified at the north end of the Excavation Area A at SA 54 are as follows:

- One 2-inch-diameter telephone conduit - 33 inches bls
- One BellSouth phone cable line - 36 inches bls
- One 2-inch-diameter telephone conduit - 36 inches bls
- One 4-inch-diameter steel natural gas line - 30 inches bls
- One 6-inch-diameter steel JP-5 Jet Fuel line - 35 inches bls

One 18-inch-diameter concrete storm water drainage culvert is located in the drainage swale area in the north side of Excavation Area A. The culvert is 30 feet long and the depth is 16 inches bls. Excavation will be required in the drainage swale area 2 feet bls. Therefore, the culvert may require removal and replacement.

Study Area 18

Underground utilities identified at SA 18 include an 8-inch-diameter fire hydrant line near Area 4, with the top of the pipe located 33 inches bls (see Figure 1-4). No other underground utilities were identified at Areas 1 through 3.

Study Area 16

No underground utilities have been identified in the area to be excavated at SA 16.

1.2.3 Contaminated Soil Excavation Activities

Study Area 54

Two excavations (Area A and Area B) are proposed at SA-54. The anticipated extent of soil excavation is shown on Figure 1-3. The locations will be excavated to a depth of 2 feet bls.

Exact excavation limits will be marked by survey stakes located throughout the site prior to excavation. Post-excavation laboratory confirmation sampling for soil is not required. No additional soil excavating beyond the pre-established limits will be conducted. Excavation activities will be conducted using a backhoe.

Manual digging along utility corridors at the north end of Area A is anticipated. Once the utilities are visually exposed, normal excavation will be conducted with caution. Manual digging equipment to be used along the underground utility areas will include, but not be limited to, posthole diggers, picks and shovels.

Soil overburden material (approximately 5 feet high by 10 feet wide), located outside of the fence area near sample location 114, will be removed and handled as PAH-contaminated soil, and disposed accordingly.

Assuming the excavation limits above, approximately 1,068 in-place cubic yards will require excavation at both Areas A and B, and approximately 20 cubic yards for the onsite overburden pile. Pending pre-disposal analytical results from soil samples, the contaminated material will be excavated and loaded directly into trucks and transported to the approved disposal facility.

Study Area 18

Four separate excavations (Areas 1, 2, 3, and 4) are proposed at SA-18. CCI has been directed by the Navy and regulatory agencies that the limits of the excavation will be established from the previous and most recent soil assessment conducted by TtNUS in August 2001. The anticipated extent of the soil excavations and estimated volumes for Areas 1 through 4 are shown on Figure 1-4, the soil excavation location map for SA-18. The excavation limits and estimated volumes to be removed are based on recent survey data conducted by TtNUS. The locations will be excavated to a depth of 2 feet bls.

Exact excavation limits will be marked by survey stakes located throughout the site. Post-excavation laboratory confirmation sampling for soil is not required. No additional soil excavating beyond the pre-established limits will be conducted.

Assuming the excavation limits shown on Figure 1-4, an approximate total of 700 in-place cubic yards will require excavation at Areas 1 through 4. Pending pre-characterization analytical results from soil samples collected by CCI, the contaminated material will be excavated and loaded onto Department of Transportation (DOT)-approved trucks for transportation to an approved disposal facility.

Study Area 16

The anticipated horizontal extent of soil excavation at SA 16 is shown on Figure 1-5. The location will be excavated to a depth of 2 feet bls. CCI has been directed by the Navy and regulatory agencies that the limits of the excavation will be established from the previous and most recent soil assessment conducted by TtNUS in August 2001.

Exact excavation limits will be marked by survey stakes. Post-excavation soil laboratory confirmation sampling is not required. No additional soil excavating beyond the pre-established limits will be conducted.

Assuming the excavation limits shown on Figure 1-5, an approximate total of 120 in-place cubic yards will require excavation. Pending pre-characterization analytical results from soil samples collected by CCI, the contaminated material will be excavated and loaded onto DOT-approved trucks for transportation to an approved disposal facility.

1.2.4 Contaminated Soils Management, Characterization, and Disposal

Soil samples will be collected in representative areas within the excavation boundaries prior to excavation activities. Laboratory results will be submitted to the disposal facility for acceptance. The disposal samples will be analyzed using USEPA SW-846 procedures at a Navy-, Air Force Center for Environmental Excellence (AFCEE)-, or United States Army Corps of Engineers (USACE)-Missouri River Division (MRD)-approved laboratory (on a 7-day turnaround time [TAT]) for the presence of the following using USEPA SW-846 procedures:

- Toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOCs) (Methods 1311/8260B)
- TCLP semi-volatile organic compounds (SVOCs) (Methods 1311/8270C)
- TCLP pesticides (Methods 1311/8081A)

- TCLP herbicides (Methods 1311/8151)
- TCLP metals (Methods 1311/6010B/7470A)
- PCBs (Method 8082)
- Reactivity, corrosivity, ignitability (RCI) (Methods 1010 or 1020A, 9040B, Chapter 7.3)

Prior to offsite disposal of any waste (hazardous or non-hazardous, liquid or solid), CCI will provide NAVFAC with a waste approval package for each wastestream. This package will include a waste profile naming the NTC as the generator of the waste, analytical summary table(s) applicable to the waste, a letter of approval from the proposed waste disposal facility to accept the waste, Land Disposal Restriction (LDR) notification for any hazardous wastes, a completed waste manifest, and any other applicable information necessary to complete review of the disposal package. CCI has allowed 1 week in its schedule for obtaining the signature of the generator.

A copy of all final manifests will be provided to NAVFAC. Certificates of destruction/disposal and weight tickets from State-certified scales will also be provided.

1.2.5 Liquid Waste Management, Characterization, and Disposal

Aqueous waste from decontamination activities and water that accumulates in the excavation (or otherwise comes in contact with contaminated soil) will be contained in 55-gallon drum(s) or other vessels (e.g., tanker cars) approved by CCI.

For containerized liquids (i.e., decontamination water, etc.), CCI will collect representative samples for waste characterization (see Section 2.2.2). One representative sample from each container will be collected and analyzed at a Navy-, AFCEE-, or USACE and Florida-approved laboratory for the following parameters using USEPA SW-846 procedures:

- Target Compound List (TCL) VOCs (Method 8260B)
- TCL SVOCs (Method 8270C)
- TCL pesticides (Method 8081A)
- Herbicides (Method 8151A)
- Target analyte list (TAL) metals (Methods 6010B or 6020 and 7471A)
- TCL PCBs (Method 8082)
- RCI (Methods 1010 or 1020A, 9040B, Chapter 7.3)

Analyses will be provided on a 7-day TAT basis. The results of the analyses will be forwarded to NAVFAC following receipt of the analytical results along with the waste profile package as described above. Upon receipt of the signed profiles/ manifests, the material will be loaded onto properly licensed vehicles and transported to a disposal/treatment facility permitted to accept this material.

A copy of the manifest(s) will be provided to NAVFAC. Certificates of destruction/ disposal and weight tickets from State-certified scales will also be obtained.

1.2.6 Surveying

Survey stakes show the horizontal limits of the excavations surveyed by TtNUS for each site. CCI will survey areas within the excavation limits to ensure that the 2-foot depth requirements for excavation are met.

1.2.7 Backfill and Site Restoration

Upon completion of the excavation activities, CCI will furnish and place uncontaminated backfill into the excavations, as detailed in the following sections.

Backfill Material

Uncontaminated backfill materials from an offsite source(s) will be furnished to completely backfill the excavation. To document that the offsite material is uncontaminated, one representative sample from each offsite source will be collected and analyzed (with no longer than a 7-day TAT) for the presence of the following using USEPA SW-846 procedures and Level III QA/QC protocols:

- TCL VOCs (Methods 5035/8260B)
- TCL SVOCs (Method 8270C)
- TCL pesticides (Method 8081A)
- Herbicides (Method 8151)
- PCBs (Method 8082)
- TAL metals (Methods 7471 and 6010B)
- pH

The analytical results will be provided to NAVFAC to demonstrate that the offsite soil source(s) is free from contamination prior to bringing the material onsite.

Backfill

Soil fill material will be placed in lifts, graded, and tamped. Soil will be placed in 12-inch lifts and compacted to 85 percent maximum dry density in accordance with American Society for Testing and Materials (ASTM) D698.

During backfilling operations, an excavator or backhoe will be used to provide an even distribution of fill material. Field testing is outlined in Section 4.0, Quality Control Plan.

Site Restoration

The backfilled areas will be graded to provide drainage, then hand raked following machine grading. The disturbed areas will then be hydroseeded, fertilized, and mulched at SA 54. Bahia sod will be required at SA 18. Irrigation maintenance will be required at both sites for the period of 90 days.

A grass sodded drainage swale will be required and constructed beyond the existing Area 3 swale area (see Figure 1-4) at SA 18. No asphalt paving will be required in this area.

1.2.8 Final Decontamination and Demobilization

A final cleanup of all areas impacted by site activities will be performed. Personnel and equipment will be decontaminated prior to leaving the area to avoid the possibility of

inadvertently spreading contamination. Equipment will be properly decontaminated to remove all contamination that may be adhering to the equipment components as a result of the removal action. All debris and rinsate generated by the treatment activities will be properly containerized, sampled, analyzed, and disposed offsite as specified in this scope of work. Decontamination of personnel and equipment will be performed in accordance with the Health and Safety Plan (to be submitted under separate cover) and the applicable provisions of 29 CFR 1910.120.

Following approval from NAVFAC, all personnel, equipment, temporary facilities and utilities will be demobilized from the site. In addition, any remaining debris or other wastes generated during the work will be removed and properly disposed.

1.2.9 Project Submittals

CCI's Site Supervisor will be responsible for preparing a field activity summary that describes the work performed and estimated quantities of materials removed each day. CCI will complete the applicable portions of the Contractor Quality Control Report and the Contractor Production Report.

Within 60 calendar days following completion of the work, CCI will prepare a Source Removal Report describing the work. This report will combine both SA-54 and SA-18 and will be submitted to NAVFAC. The following are a minimum of Source Removal Report topics:

- Description of the excavation activities, including field notes and daily logs
- Photographs
- Chronology of significant events that occurred during the project
- Analytical results
- Documentation of proper transport and disposal of all materials
- Post-excavation survey results and site map
- Problems encountered
- Recommendations and conclusions

1.3 Project Schedule

The major project activities and estimated durations for each of the tasks to be performed under this CTO are provided in Appendix A. The proposed site hours of operation are 10 hours/day (7:00 a.m. to 5:00 p.m.) week days only, excluding federal holidays. This anticipated schedule will vary depending on the actual limits of the excavations, weather delays, and the actual durations required to determine whether further excavation or backfill can occur.

1.4 Communications Plan

A communication matrix outlining the lines of communication for the Southern Division, NAVFAC, NTC and CCI personnel for this work is presented in Table 1-1. Table 1-2 provides a project personnel directory.

TABLE 1-1
Communications Matrix

CCI Position	Navy Direct Report
Scott Newman, Program Manager	Eva Clement, ACO Jimmy Jones, COTR
Philip Altman, Senior Project Manager	Jimmy Jones, COTR Richard Stanley, Contracting Officer
Steve Tsangaris, CTO Project Manager	Barbara Nwokike, RPM

ACO = Administrative Contracting Officer
 COTR = Contracting Officer Technical Representative
 RPM = Remedial Project Manager

1.5 Traffic Control Plan

Traffic control will be the responsibility of the CCI Site Superintendent. CCI will consult with NTC to evaluate placement of equipment and traffic flow to minimize the impact of this work. Further, CCI will review all NTC regulations and standard operating procedures regarding vehicle movement and control inside the property.

TABLE 1-2

Project Personnel Directory for NTC Orlando

Contact	Role	Address	Phone No.	Fax No.	E-Mail
Barbara Nwokike	Navy Remedial Project Manager	U.S. Naval Facilities Engineering Command Southern Division, Code 1873 2155 Eagle Drive N. Charleston, SC 29406	(843) 820-5566	(843) 820-5563	nwokikebr@efdsouth.navy.mil
Craig Haas/TPA	Site Supervisor/QC Manager	CCI 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(770) 604-9182	(770) 604-9183	chaas@ch2m.com
Scott Newman/ATL	Program Manager	CCI 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(770) 604-9182 x 519	(770) 604-9183	mailto:snewman@ch2m.com
Richard Rathnow/ORO	Health & Safety Manager	CH2M HILL 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(865) 483-9005		rrathnow@ch2m.com
Eric Brothers/ATL	Contracts Administrator/ Project Controls	CCI 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(770) 604-9182 x 559	(770) 604-9183	mailto:ebrother@ch2m.com
Theresa Rojas/ATL	Program Quality Control & Project Chemist	CCI 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(770) 604-9182 x 568	(770) 604-9183	trojas@ch2m.com
Lisa Schwan/ATL	Project Chemist	CCI 115 Perimeter Center Place, N.E., Suite 700 Atlanta, GA 30346-1278	(770) 604-9182 x 561	(770) 604-9183	lschwan@ch2m.com
Steve Tsangaris/TPA	Project Manager	CH2M HILL 4350 W. Cypress Street, Suite 600 Tampa, FL 33607	(813) 874-0777 x 4305	(813) 874-3056	Stsangar@ch2m.com

2.0 Sampling and Analysis Plan

The Sampling and Analysis Plan (SAP) provided in this Work Plan Addendum, outlines the required sampling activities associated with the removal and disposal of the PAH-contaminated soils at SA 16, 18, and 54 at NTC Orlando, Florida. This SAP outlines the required locations, frequency, and analyses for the soil samples to be collected prior to and during remedial activities. In addition, this Plan provides the required analyses for disposal characterization for wastes generated during removal activities, if required.

The Basewide Work Plan provides sample collection frequency and sampling methodology for waste characterization and incidental samples collected during the remedial phase of the project completed under this contract; sample quality assurance/quality control procedures to be maintained during all sample collection activities; and sample equipment decontamination procedures.

Samples will be collected in accordance with the Florida Department of Environmental Protection (FDEP) Standard Operating Procedures, Department of Environmental Regulation QA-001/92 and the USEPA Region IV Environmental Investigative Standard Operating Procedures and Quality Assurance Manual (EISOPQAM), 1996 and 1997 revisions. Where these documents conflict, the more stringent will apply. The sampling team will be qualified under the Navy Installation Restoration Chemical Data Quality Manual (IRCDQM) sampling requirements.

2.1 Data Quality Objectives for Measurement Data

The data quality objectives (DQOs) for each sampling task described above are listed in Table 2-1. The sampling and analytical requirements, along with the required level of quality and data packages, are listed in Table 2-2.

A Navy-, USACE-, or AFCEE- and Florida-approved laboratory will be used for all sample analyses.

TABLE 2-1
Data Quality Objectives

Sampling Activity	Data Quality Objective Category
Pre-characterization sampling at PAH-contaminated area (offsite laboratory analyses)	Definitive
Waste characterization of the aqueous waste (offsite laboratory analyses)	Definitive
Backfill characterization (offsite laboratory analyses)	Definitive

Table 2-2
 Sampling and Analysis Summary, CTO 17

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	DQO Level/ Data Package Reqmnt	Required Analysis	Analytical Methods	Holding Time	Sample Preservation	Containers
Waste Characterization of Solids and Liquids													
Soil Characterization Sampling	Study Areas 16, 18, 54: Areas to be excavated	Soil	Once	1 from SA 16 & 18; 2 from SA 54; Total = 4	Auger down to various depths within areas to be excavated	SS Auger, SS Spoons, SS Bowl	7 day	DQO Level III, CCI Level B	TCLP Volatiles	1311/8260B	14 day TCLP extr; 14 day analysis	Cool to 4°C	(1) 4 oz amber glass
									TCLP Semi-Volatiles	1311/8270C	14 day TCLP extr; 7 day extr; 40 day analysis		
									TCLP Pesticides	1311/8081A	14 day TCLP extr; 7 day extr; 40 day analysis		
									TCLP Herbicides	1311/8151A	14 day TCLP extr; 7 day extr; 40 day analysis	Cool to 4°C	(3) 8 oz amber glass
									TCLP Metals	1311/6010B, 7470A	6 month TCLP extr; 6 month analysis Hg: 28 day TCLP extr; 28 day analysis		
									PCBs	8082	14 days ext; 40 days analysis		
									Ignitability	1030	ASAP		
									Corrosivity	9045A	ASAP		
Reactivity	Chapter 7.3	ASAP											

Table 2-2
Sampling and Analysis Summary, CTO 17

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method	Sampling Equipment	TAT	DQO Level/ Data Package Reqmnt	Required Analysis	Analytical Methods	Holding Time	Sample Preservation	Containers
Disposal of Aqueous Waste	Drums/tanks	Water	Once	1 per container or per 6 drums	Grab	Drum thief or dip jar	7 days	DQO Level III, CCI Level B	TCL Volatiles	8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
									TCL Semi-volatiles	8270C	7 day extr; 40 day analysis	Cool to 4°C	(3) 1L amber glass
									TCL Pesticide	8081A	7 day extr; 40 day analysis		
									Herbicides	8151A	7 day extr; 40 day analysis		
									TAL Metals	6010B/7470A	180 days; Hg = 28 days	HNO3 pH< 2; Cool to 4°C	(1) 500ml HDPE
									PCBs	8082	7 day extr; 40 day analysis	Cool to 4°C	(1) L amber glass
									Reactivity	1010/1020A	ASAP	Cool to 4°C	(1) L amber glass
									Ignitability	9040B	ASAP		(1) 250 mL amber glass
Corrosivity	Chapter 7.3	ASAP		(1) L amber glass									
On-Site and Imported Backfill Material Sampling													
Characterization of Fill Material	Once per off-site backfill source per material	Soil	1 composite sample of 4 grabs (1 grab for volatiles)	1	Composite 5 random grabs into 1 sample (1 grab for volatiles)	SS spoon, SS bowl, Encore samplers	3 days	DQO Level III, CCI Level B	TCL Volatiles	5035/8260B	48 hours	Cool to 4°C	(3) 5g Encore Samplers
									TCL Semi-Volatiles	8270C	14 day extr; 40 day analysis	Cool to 4°C	(4) 8 oz amber glass
									TCL Pesticides	8081A	14 day extr; 40 day analysis		
									Herbicides	8151A	14 day extr; 40 day analysis		
									TAL Metals	SW-846 6010A/7471	6 month; Hg 28 days		
									PCBs	8082	14 days ext; 40 days analysis		
Trip Blank	Water	1 per VOC cooler	As necessary	Prepared by Lab	N/A	3 days	DQO Level III, CCI Level C	TCL Volatiles	5035/8260B	48 hours	Cool to 4°C	(3) 5g Encore Samplers	

The objectives of the cleanup activities at SAs 16 and 54 is to remove and dispose of contaminated soil at the site exceeding FDEP Table II, SCTLs, Industrial Direct Exposure levels in accordance with FAC 62-777. At SA 18, the objective is to remove and dispose of contaminated soil exceeding FDEP Table II, SCTLs, Residential Direct Exposure Levels.

2.2 Waste Characterization and Incidental Wastestream Sampling and Analyses

2.2.1 Soil Pre-Characterization

Three areas (SA 16, SA 18 and SA 54) will be excavated to pre-determined limits as described in Section 1.0. Pre-characterization samples will be collected and, pending results, the contaminated material will be excavated and loaded directly into trucks and disposed at an approved facility. Soil samples will be collected as follows, delivered to a Navy-, USACE-, or AFCEE- and Florida-approved laboratory and analyzed for the parameters listed in Table 2-2. Composite samples will be collected as follows:

1. Choose five random points within the designated pre-determined boundaries at each of the SAs.
2. At each of the five points, auger down to varying depths, collecting grabs at each point and depositing into a stainless steel bowl, ensuring to collect at least one sample from deepest depth of anticipated excavation. At one point, collect volatiles as a single grab sample and place into a 4-ounce container with no headspace. Do not composite volatiles sample.
3. Homogenize the five grab samples by the quartering technique using the stainless steel spoon.
4. Fill the appropriate sample jars approximately $\frac{3}{4}$ full with the homogenized sample.
5. Close the jars, label, and package the sample for shipment to the lab.

Navy Level B Quality Control and a CCI Level B package will be required along with appropriate Quality Control samples for the required stockpile samples. All analytical data will be submitted by both hard copy and electronic files.

2.2.2 Liquid Characterization

Waste characterization samples will be collected to evaluate the handling, transportation, and disposal requirements of generated decontamination water and any excavation contact water. It is anticipated that the aqueous waste from decontamination activities will be containerized in drums or portable tanks. Samples will be collected one per container or per six drums or as required by disposal facility. Liquid samples will be collected as follows and delivered to a Navy, USACE, or AFCEE and Florida-approved laboratory and analyzed for the parameters listed in Table 2-2.

A sample will be collected from the drums or tanks using either a dip jar or bailer. The sample containers for volatiles analyses will be filled first. The 40-milliliter (mL) vials will be

filled so that there is no headspace in each vial. The sample containers for the remaining analyses will then be filled.

Navy Level B Quality Control and a CCI Level B package will be required along with appropriate Quality Control samples for the required waste characterization and incidental wastestream samples. All analytical data will be submitted by both hard copy and electronic files.

2.3 Sampling Collection Procedures

Soil samples from the feed and treated soil will be collected in accordance with the FDEP Standard Operating Procedures for Laboratory Operations and Sample Collection Activities, DEP-QA-001/92, which were adopted as part of CCI's, JA Jones' and its subcontractors' FDEP-approved CompQAP and analyzed in accordance with Table 2-2. Generally, samples will be collected as follows:

Procedure for Collecting Volatile Soil Samples

1. Using split spoon or similar coring device, core through the middle of the 5-gallon container.
2. Open the split spoon or similar device.
3. Open the Encore® reusable package and remove the core device and cap.
4. Place into the T-handle and core the sample directly from the split spoon.
5. Remove from the soil, brush off the sides, and put the cap seal onto the sampler.
6. Label and reseal in the original package.
7. Place into cooler for shipment.

Procedure for Collecting Non-Volatile Samples

1. Dump contents of 5-gallon container onto visqueen. Blend, cone and quarter soil using stainless steel spoon.
2. Fill the appropriate sample jars approximately $\frac{3}{4}$ full with the homogenized sample.
3. Close the jar, label, and package the sample for shipment to the lab.

Navy Level C Quality Control and a CCI Level C data package will be required along with appropriate Quality Control samples for the required groundwater and air analyses. All analytical data will be submitted by both hard copy and electronic files.

2.4 Imported Backfill Sampling and Analyses

Imported backfill material is not currently anticipated, but if excavated material must be disposed offsite, analytical data must be provided showing uncontaminated material. If no data are provided by the vendor providing the backfill material (sand, topsoil, clay, etc.), then one sample will be collected per source and material. The samples will be collected

using the procedures described below and delivered to Navy-, USACE-, or AFCEE- and Florida-approved laboratory and analyzed for the parameters listed in Table 2-2.

Procedure for Collecting Volatile Soil Samples

1. Remove the top 6 inches of soil using a stainless spoon.
2. Open the split spoon or similar device.
3. Open the Encore reusable package and remove the core device and cap.
4. Place into the T-handle and core the sample directly from the cleared sample point.
5. Remove from the soil, brush off the sides, and put the cap seal onto the sampler.
6. Label and reseal in the original package.
7. Place into cooler for shipment.

Procedure for Collecting Non-Volatile Samples

1. Collect several spoonfuls of the soil into a stainless steel bowl.
2. Blend, cone and quarter soil using stainless steel spoon.
3. Fill the appropriate sample jars approximately $\frac{3}{4}$ full with the homogenized sample.
4. Close the jar, label, and package the sample for shipment to the lab.

Navy Level C Quality Control and a CCI Level C data package will be required along with appropriate Quality Control samples for the required groundwater and air analyses. All analytical data will be submitted by both hard copy and electronic files.

2.5 Field Quality Control

Field duplicate samples, pre-equipment blank samples, post-equipment blank samples, and matrix spike/matrix spike duplicates (MS/MSD) are not required for disposal sampling. One trip blank sample will be provided at a frequency of one per sample cooler containing volatile samples for the backfill sample only.

2.6 Analytical Methods

2.6.1 Analytical Methods

Samples will be collected for analytical methods summarized in Table 2-2.

Preliminary analytical results will be faxed to Bonnie Hogue at the following fax number per the TAT listed in Table 2-2 from day of sample receipt. The final hard copy data and electronic file will be delivered to Tatiana Romanova within 14 days of sample receipt.

Bonnie Hogue/Tatiana Romanova
CCI
115 Perimeter Center Place, Ste 700
Atlanta, GA 30346
(770) 604-9182 x263 (B. Hogue); x562 (T. Romanova)
(678) 579-8106 (fax)
bhogue@ch2m.com
tromanov@ch2m.com

3.0 Waste Management Plan

As part of the field activities, waste material will be generated in association with personal protection and removal of PAH-contaminated soil at SAs 54, 18, and 16 at NTC Orlando. Materials or wastes that may be generated and/or managed during these activities will include tree removal and disposal, contaminated soil, and aqueous waste from decontamination.

Wastes will be characterized using process knowledge and/or analytical data. Waste characterization information for wastes will be documented on a waste profile form provided by the offsite treatment or disposal facility as part of the waste acceptance process. An approved copy of the waste profile will be received prior to offsite transportation of the material. The profile typically requires the following information:

- Generator information including name, address, contact, and phone number
- Site name including street/ mailing address
- Activity generating waste
- Source of contamination
- Historical chemical use for area
- Physical state of waste (e.g., solid, liquid, etc.)

3.1 Waste Characterization

Wastes will be classified as required under the RCRA and FDEP Agency's hazardous waste regulations. Section 2.0, the Sampling and Analysis Plan, provides detailed information on the sampling and analysis requirements for waste characterization, as required for disposal. In some cases, offsite facilities may require additional analyses to evaluate the wastes prior to acceptance.

Waste will be characterized based on two categories of waste: hazardous and solid. Hazardous waste is a solid waste that is listed as a hazardous waste and/or exhibits a hazardous characteristic (ignitability, corrosivity, reactivity, or toxicity). Solid waste is any waste (solid, liquid, or containerized gas) that is discarded and is not excluded under RCRA regulations. A solid waste is discarded when the waste has been abandoned, recycled, or is inherently waste-like.

Waste stream characterization will be documented at the site. The following should be considered when characterizing a waste stream:

- Assume waste is hazardous until proven non-hazardous.
- Characterize before waste is generated (may be able to do this using only process knowledge).
- Estimate waste volumes.
- Identify disposal facility sampling and analytical requirements.

Waste characterization may require multiple analytical test methods, depending upon the potential composition and legal requirements. Analytical test methods will depend upon the following considerations:

- The nature and quantity of waste
- Legal requirements for transporting, treating, and disposing of the waste
- Analytical method detection limits
- Analysis required by the disposal facility

Testing the waste using standard USEPA methods or process knowledge will be used to determine if waste is hazardous (e.g., historical data or information in MSDS). With this information, a waste is characterized by asking the following questions:

1. Is it a solid waste?
2. Is it excluded?
3. Is it a listed hazardous waste?
4. Is it “contained in” environmental media or debris?
5. Does it exhibit a hazardous characteristic?

Regulated wastes will carry a specific “waste code” for identification.

Uncontaminated (or decontaminated) wastes generally will be characterized using process knowledge, and disposed as municipal solid waste.

3.2 Waste Management

For this plan, it is assumed that the contaminated soils will be directly loaded and pre-characterized. By doing this, onsite management of the soil will not be necessary. In the event that soil and other wastes need to be managed onsite, the following procedures will be followed.

3.2.1 Waste Storage Time Limit

Hazardous wastes will be removed within 90 days from generation and other wastes will be removed from the site as soon as possible. The date of generation is the day that a waste is first placed in a container, tank, or stockpile.

3.2.2 Labels

All waste containers will be labeled. Labels will include the type of waste, location from which the waste was generated, and accumulation start date. Containers, roll-off containers, and tanks used to store/accumulate waste will include one of the following labels:

- “Analysis Pending” or “Waste Material” labels may be used until analytical results are received and reviewed. This label will include the accumulation start date.
- “Hazardous Waste” - Pre-printed hazardous waste labels with the following information:
 - Accumulation start date
 - Generator name

- EPA ID number for site
- Waste codes
- **Manifest number (for containers of less than 110 gallons)**
- “Non-Hazardous Waste” - preprinted labels with the following information:
 - Accumulation start date
 - Generator Name
 - EPA ID Number
 - Waste-specific information (e.g., contaminated debris)

3.2.3 General Waste Management Requirements

Waste Storage Areas

Waste storage areas will contain emergency equipment equivalent to the hazard posed by waste. Typical items in a hazardous waste storage area include fire extinguishers, decontamination equipment, and an alarm system (if radio equipment is not available to all staff working in storage area). **Spill control equipment (e.g., sorbent pads) will be available in the waste storage areas, and where liquids are transferred from one vessel to another.**

Wastes will be stored in one of the following settings and according to the following requirements:

Drums/Small Containers

- Drums and small containers of hazardous waste will be transported to the temporary accumulation areas on wood pallets and will be secured together with non-metallic bonding.
- Drums will be inspected and inventoried upon arrival onsite for signs of contamination and/or deterioration.
- Adequate aisle space (e.g., 30 inches) will be provided for containers such as 55-gallon drums to allow the unobstructed movement of personnel and equipment. A row of drums should be no more than two drums wide.
- Each drum will be provided with its own label.
- Drums will remain covered except when removing or adding waste to the drum. Covers will be properly secured at the end of each workday.
- Secondary containment will be provided for drums of liquid hazardous waste or hazardous wastes that are incompatible with other wastes or materials stored nearby.

Portable Tanks

- Tanks will be inspected upon arrival onsite for signs of deterioration and contamination. Any tank arriving onsite with contents will be rejected.
- Tanks will be provided with covers.
- Each tank will be labeled.

- Tanks containing hazardous waste or incompatible liquids will be provided with secondary containment.

Storage Piles

Where appropriate, construction debris and waste, or intact equipment may be accumulated in storage piles. All storage piles will be managed in such a manner as to maintain good housekeeping, and to prevent the spread of contamination.

- Contaminated materials - the storage piles will be provided with secondary containment (i.e., a liner, and perimeter berm to prevent rupture and release or infiltration of liquids), and a cover, as appropriate.
 - Minimum 6-mil polyethylene sheeting will be used for liners and covers.
 - The perimeter berm, typically hay bales placed beneath the liner, will be constructed to allow for collection of any liquids draining from the stockpile.
 - Contaminated liquids that accumulate in the secondary containment will be pumped (or otherwise removed) to a container or tank.
- Uncontaminated or decontaminated debris and waste/storage piles should be placed on a liner. These piles will be covered as necessary to prevent storm water run-on and run-off.

Roll-off Containers

- Roll-off containers will be inspected upon arrival onsite. Any roll-off containers arriving with contents will be rejected.
- Roll-off containers for hazardous soils will be provided with covers and disposable liners. Liners will be disposed of as contaminated debris.
- When not in use, securely fastened covers will be installed on all roll-off containers.
- Old labels will be removed.
- Roll-off containers will be inspected by the transporter after removal of the liner and decontaminated in the event of evidence of liner failure.

Waste/Fuel Storage Area Inspections

Areas used for waste/container storage will be inspected for malfunctions, deterioration, discharges, and leaks that could result in a release. The following inspection schedule will be followed:

- At least weekly inspection of containers, tanks and roll-off containers (for leaks, signs of corrosion, or signs of general deterioration)
- At least weekly inspection of storage piles (for liner and berm integrity)
- At least weekly inspection of fuel storage areas (e.g., look for eroding containment systems and rusting tanks/ancillary equipment)

3.3 Transportation

Each transportation vehicle and load of waste will be inspected before leaving the site. The quantities of waste leaving the site will be recorded. A contractor licensed for commercial transportation will transport non-hazardous wastes. In the event that wastes are hazardous, the transporter will be licensed in accordance with 49 CFR 171-179. A copy of the documentation indicating that the selected transporter has appropriate licenses will be received prior to transport of any waste material.

3.3.1 Manifests/Shipping Documentation

Each load of waste material will be manifested prior to leaving the site. At a minimum, the manifest form will include the following information:

- Transporter information including name, address, contact and phone number
- Generator information including name, address, contact, and phone number
- Site name including street/ mailing address
- Description of waste (e.g., hazardous waste, liquid)
- Type of container
- Quantity of waste (volumetric estimate)

Additionally, each shipment of waste will also have a waste profile, a Land Disposal Restriction (LDR) Notification/Certification for hazardous wastes, and a haul ticket.

If the signed hazardous waste manifest from the designated offsite facility is not received within 35 days, CCI will contact the transporter or the designated facility to determine the status of the waste. If the signed hazardous waste manifest has not been received within 45 days, CCI will prepare an "Exception Report" for the Southern Division, NAVFAC to submit to the State of Florida, as required under 40 CFR 262.42.

3.3.2 Transporter Responsibilities

The transporter will be responsible for weighing loads at a certified scale. For each load of material, weight measurements will be obtained for each full and empty container, dump truck, or tanker truck. Disposal quantities will be based on the difference of weight measurements between the full and empty container, dump truck, or tanker truck. Weights will be recorded on the waste manifest. The transporter will provide copies of weight tickets with the final manifest to CCI.

The transporter will observe the following practices when hauling and transporting wastes offsite:

- Minimize impacts to general public traffic.
- Repair road damage caused by construction and/or hauling traffic.
- Clean up material spilled in transit.
- Line and cover trucks/trailers used for hauling contaminated materials to prevent releases and contamination.

- Decontaminate vehicles prior to re-use, other than hauling contaminated material.
- Seal trucks transporting liquids.

No materials from other sites will be combined with materials from NTC Orlando.

All personnel involved in offsite disposal activities will follow safety and spill response procedures outlined in the Construction Health and Safety Contingency Plan.

3.3.3 Transportation and Disposal Log

Transportation of wastes will be inventoried the day of transportation from the site using the Transportation and Disposal Log. A carbon copy of the initial manifest form for each load will be retained onsite and attached to the Daily Production Report. All required transportation manifests will be prepared by CCI and signed by a NTC Orlando representative.

3.4 Disposal of Wastestreams

Offsite treatment or disposal facilities will use the waste profile and supporting documentation (e.g., analytical data) to determine if they will accept a waste. Hazardous wastes will be sent to the appropriate RCRA Subtitle C treatment, storage, or disposal facility. It is anticipated that decontaminated demolition debris will be sent to a Construction & Demolition debris-type landfill. The disposal facility will be responsible for providing a copy of the final waste manifest and for a certificate of treatment or disposal for each load of waste received.

As required under the CERCLA Offsite Policy, hazardous wastes will be transported to and treated or disposed at an offsite facility determined acceptable by the EPA Regional Offsite Contact (58 FR 49200, September 22, 1993). According to 40 CFR 300.400(b), the Regional Contact determines that the facility has no significant violations, and has no releases of hazardous substances (for RCRA Subtitle C facilities). CCI will obtain a record of the facility's approval under this policy.

3.5 Training

Personnel handling hazardous waste must receive 40 hours of hazardous waste training in order to perform their work.

3.6 Records/Reporting

Potential records include profiles, manifests, land disposal certifications/notifications, transportation/disposal logs, inspection logs, sample logs, exception reports, and biennial report information.

There are a number of reports that may need to be prepared, and records that must be kept by NTC Orlando to comply with hazardous waste characterization and recordkeeping requirements found in 40 CFR 262.11 and 262.40. Below are some highlights.

- Copies of waste profiles
- Copies of shipping documents

Copies of the following documents must be maintained by NTC Orlando for at least 3 years from the date the hazardous waste was accepted by the initial transporter:

- Manifests signed by the disposal facility
- LDR notification and certification forms*
- Biennial Reports
- Exception Reports
- Hazardous waste characterization information, including test results, waste analyses, profiles, process calculations, or generator knowledge.

**NOTE: LDR notification and certification forms and hazardous waste characterization information must be retained for 5 years.*

4.0 Quality Control Plan

The Quality Control Plan provided in the Basewide Work Plan details the quality administrators, the project organization for the work to be completed at NTC Orlando, and the definable features of work for each project site.

The Submittal Register, included in Appendix B of this addendum, documents submittals in accordance with Appendix B of CCI's Contract Management Plan (dated July 1998). CCI, the Navy, or others will approve submittals as identified in the Submittal Register. All approved submittals will be distributed by CCI to the appropriate Navy personnel (CO, Resident Officer in Charge of Construction [ROICC] [in duplicate], etc.), the project site, and to the project file.

The site-specific project organization chart (Figure 4-1) depicts the chain-of-command for this CTO and the individuals responsible for executing the work as indicated. Individual roles and responsibilities of CTO personnel are summarized in Table 4-1.

4.1 Project QC Manager

The Project QC Manager is Ms. Tammy Plumlee. Ms. Plumlee's resume and appointing letter will be provided at a later date.

4.2 Testing Requirements

This section describes construction testing and environmental analysis laboratories and their certifications; construction testing and environmental sampling and analysis; and test control. The Testing Plan and Log is provided in Appendix C.

4.2.1 Identification and Certification of Testing Laboratories

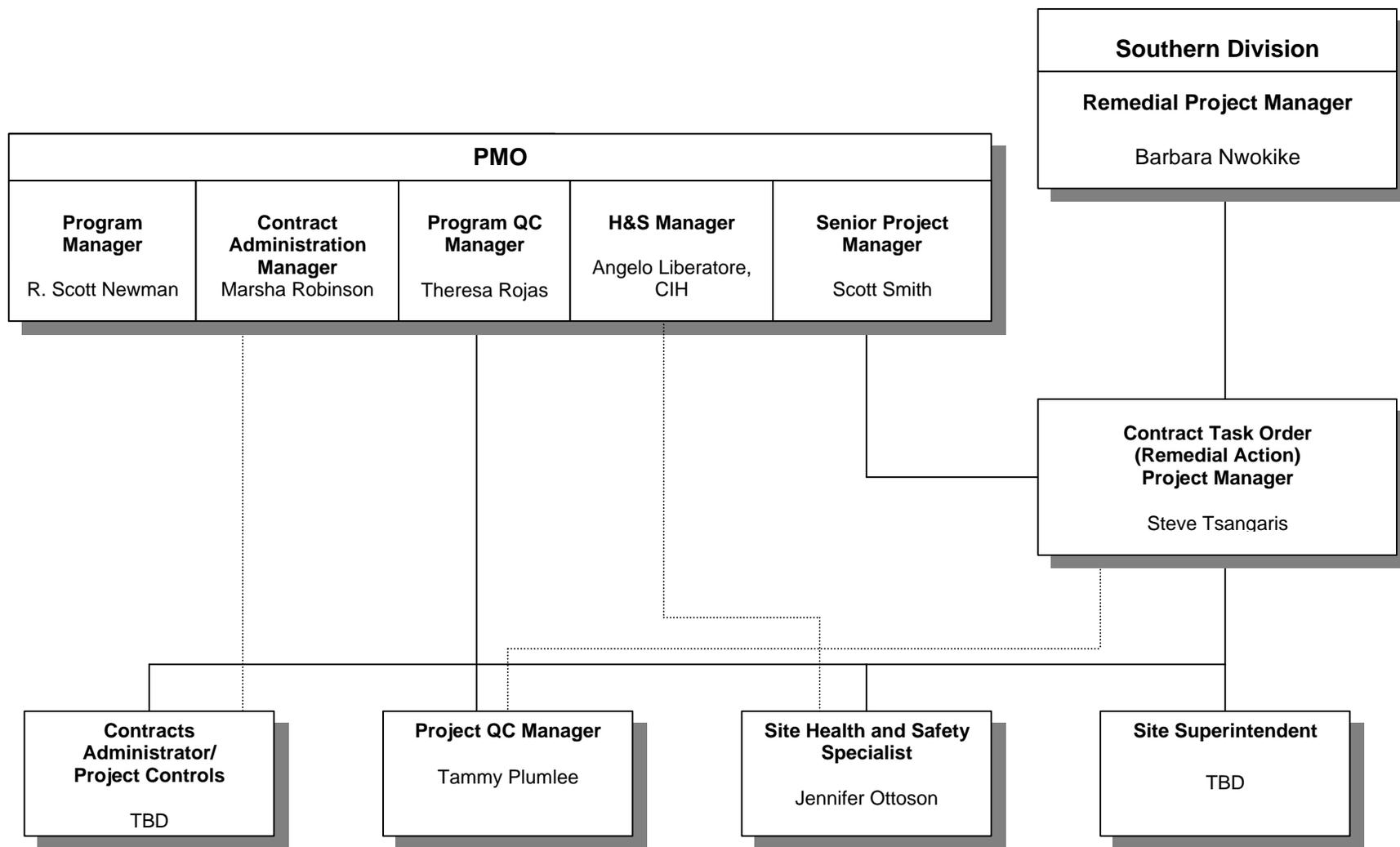
The construction testing and environmental testing laboratories utilized for this CTO project will function as a subcontractor or a lower tier subcontractor, and have not yet been identified.

Construction

Laboratories performing construction testing will be certified by National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP), American Association of State Highway and Transportation Officials (AASHTO), American Association for Laboratory Accreditation (AALA), or participate in some other accredited program for the required testing.

Environmental

Laboratories performing analysis of environmental samples will be Navy-approved and will possess a Florida-approved Quality Assurance Project Plan.



- Field Engineer
- T&D Coordinator (as necessary)
- Project Assistant (as necessary)

TABLE 4-1
Roles, Responsibilities, and Authorities of Individuals Assigned to NTC Orlando

Role	Responsibility	Authority
Project Manager	<ul style="list-style-type: none"> • Management and Technical Direction of work • Communication with Southern Division RPM and NTR • Overview subcontractor performance • Select CTO staff • Develop CTO Work Plan and supporting plans • Meet CTO Performance Objectives • Prepare status reports • Prepare Field Change Requests 	<ul style="list-style-type: none"> • Approve subcontractor selection • Approve invoices to Southern Division • Approve CTO baseline schedule • Stop work at the site for any reason • Approve payment to vendors and suppliers • Approve payment to subcontractors • Review technical qualifications of subcontractors • Respond to Design Change Notices
Site Superintendent	<ul style="list-style-type: none"> • Responsible for all site activities • Provide direction to subcontractors • Act for Project Manager • Provide daily status reports • Prepare CTO Work Plan • Conduct daily safety meetings • Review subcontractor qualifications • Stop work for unsafe conditions or practices 	<ul style="list-style-type: none"> • Stop work for subcontractors • Approve corrective action for site work-arounds • Approve materials and labor costs for site operations • Resolve subcontractor interface issues • Approve daily and weekly status reports
Project QC Manager	<ul style="list-style-type: none"> • Monitor and oversee subcontractor compliance with scope of work • Review requests for changes in scope of work • Recommend improvements in work techniques or metrics • Recommend work-around to Site Superintendent • Monitor and report on subcontractor quality and quantities • Audit subcontractors offsite fabrication • Maintain Submittal Register • Participate in Incident-Free Operations conference call 	<ul style="list-style-type: none"> • Complete daily compliance report • Monitor and report on subcontractor quality and quantities • Audit subcontractors offsite fabrication • Maintain Submittal Register • Stop work for non-compliant operations • Maintain Rework Items list • Stop work for non-compliant operations
Site Health and Safety Specialist	<ul style="list-style-type: none"> • Monitor and report on subcontractor safety and health performance • Record and report safety statistics • Conduct needed site safety and health orientation • Maintain Environmental Log • Stop work for unsafe practices or conditions 	<ul style="list-style-type: none"> • Stop work for unsafe practices or conditions • Approve subcontractor site specific health and safety plan • Set weekly safety objectives • Approve resumption of work for resolved safety issues
Subcontract Specialist	<ul style="list-style-type: none"> • Prepare bid packages • Purchase disposable materials • Maintain subcontract log • Approve payables for disposable items • Maintain government property records 	<ul style="list-style-type: none"> • Provide project scheduling coordination • Responsible for site cost tracking and reporting • Maintain record of site purchases

4.2.2 Testing and Sampling

Soil, water, and decontamination waste will be sampled by CCI or its subcontractors.

Construction Testing

The construction testing planned for the work activity includes in-place soil density testing. Testing requirements are shown in Table 4-2:

TABLE 4-2
Testing Requirements

Test/Inspection	Requirement/Reference	Frequency
Soil Compaction		
SA 54 (Areas A and B)	85% max dry density/ASTM D698	Test initial 12-inch compacted lift at Area A; place balance of soil following similar technique; Test initial and final compacted lifts, two tests per lift at locations selected by CCI.
SA 18 (Areas 1, 2, 3 & 4)	85% max dry density/ASTM D698	Test initial 12-inch compacted lift within each Area.
Landfill cover area (12 sites)	None	Place loose lift, traverse once with track mounted equipment.
UST removal site	None	Place backfill in maximum 12-inch loose lifts, uniformly compact by tamping; via bucket of excavator or other equipment.
Pavement	See Base spec if required	TBD
Field Surveying	Vertical tolerance +/- 4 inches, field measurements recorded to nearest 10 th foot	Establish 25-foot grid spacing over excavation area, perform field measurements at perimeter and along centerline.

Soil placement methods for the 12 areas within the landfill cover area are as follows:

General

1. Carefully place fill, minimizing damage to undisturbed areas.
2. Place fill by back dumping and spreading only.
3. Deposit fill on previously placed fill only.
4. While operating equipment, avoid sharp turns, sudden starts or stops that could cause damage to the soil cover.

Spreading of fill

1. Spreading equipment will be track mounted, specified as low ground pressure, D-6 or lighter equipment.
2. Spread in same direction.
3. Never pushed downslope. Spread over slopes by pushing up from slope bottom.
4. Eroded areas to be filled approximately 6 inches above grade and spread additionally outward over crater edge.

Compaction

1. Compact only after uniformly spreading to full thickness.
2. Compact fill by making at least one pass over fill area with the bulldozer tracks or other low pressure vehicle.

Field surveying of the stakes delineating the perimeter of excavations was initially performed by the Navy's CLEAN contractor. In an effort to qualify excavation vertical controls, CCI will perform elevation measurements using traditional surveying equipment. Measurements will be verified by the project QC manager. Deviations from the excavation footprint will only be authorized by the Navy site representative in concurrence with the CCI project manager, and documented by the CCI project team.

4.2.3 Environmental Sampling

Environmental sampling and analysis, including QC sampling and analysis, is specified in the project Sampling and Analysis Plan, Section 2 of this CTO Work Plan Addendum. Samples will be collected in accordance with USEPA methods and industry standards of practice. Additionally, personnel that perform sampling will meet the requirements stated in the IR CDQM- September 1999.

4.2.4 Test Control

Environmental samples will be collected in accordance with USEPA methods and procedures. Other controls will include, but are not limited to, maintaining a chain of custody; using proper handling, packing, and shipping; using qualified laboratories; and, completing independent (CCI) reviews of laboratory results by a qualified scientist.

The construction controls include review of project drawings, work plans, associated specifications and other project related documents. Prior to commencing any definable feature of work, a preparatory meeting will be conducted to review the testing requirements, work scope details, procurement, schedule and related safety topics of interest.

The Project QC Manager will verify the following items:

- That the facilities and testing equipment are available and comply with testing standards
- Contract drawings are updated with utility locations and as-built drawings are accurate
- That the recording forms, including all of the testing documentation requirements, have been prepared
- The soil compaction testing and/or effort for all areas backfilled is acceptable
- The individual excavations have been completed and are approved for backfill; and that the selected backfill material is acceptable for use
- Completion of the field survey measurements for the excavations

- Required material certificates (sod, fencing, piping, fertilizer, etc.) are received and acceptable

4.3 CTO Support Organizations

The supporting organizations are yet to be determined.

5.0 References

Harding-Lawson Associates. August 1999. Environmental Site Screening Report, NTC Orlando, Florida.

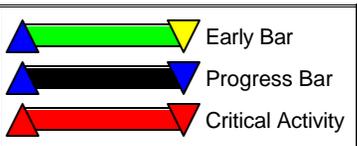
TetraTech NUS, Inc. July 2001. Site Assessment. NTC Orlando, Florida.

Appendix A

Project Schedule

Activity ID	WBS CHARGE #	SIT	% Comp	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish	2002												2003												2004											
									J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J						
CTO #0017 - NTC, Orlando, FL																																												
Subtotal		0010	84		582	318	22FEB99A	24APR03																																				
+ PHASE 1																																												
		0010	100		0	0	22FEB99A	15APR99A																																				
PHASE 2																																												
BASE PARTNERING																																												
CTO PARTNERING MEETINGS																																												
AQ99229290	99.22.92.90	0010	80	BASE PARTNERING	506	97	23FEB99A	11JUN02																																				
+ PHASE 2																																												
		0010	100		0	0	16APR99A	27JAN00A																																				
PHASE 3																																												
STUDY AREA #17																																												
FUNDING AUTHORIZATION																																												
AQ 3002		0010	100	Phase 3 Award (Sites 17, 36, 39)	0	0	23NOV99A	23NOV99A																																				
PROJECT MANAGEMENT																																												
AQ99220101	99.22.01.01	0010	60	PROJECT MANAGEMENT	618	257	19JUN99A	29JAN03																																				
AQ31010401		0010	100	CCI Notice To Proceed	1	0	23NOV99A	23NOV99A																																				
AQ31010313	31.01.03.13	0010	100	Phase 1and 2 Work Plans	15	0	02DEC99A	22DEC99A																																				
AQ31220303	31.22.03.03	0010	85	Procurement of Subcontractors	45	12	07JAN00A	26APR02																																				
AQ31010331	31.01.03.31	0010	100	Prepare/Issue Draft + Final FS Memo	24*	0*	22FEB00A	24MAR00A																																				
AQ31020502	31.02.05.02	0010	100	SAMPLINGREPORT	49*	0*	22FEB00A	14APR00A																																				
AQ31210691	31.21.06.91	0010	100	Prepare/Issue Phase1/2 Report	68*	0*	27MAR00A	08JUN00A																																				
AQ31010334	31.01.03.34	0010	100	Prepare Draft/Final Design	35	0	09JUN00A	08SEP00A																																				
AQ31010330	31.01.03.30	0010	100	TECHNOLOGY PLANS	1	0	28JUL00A	28JUL00A																																				
AQ310103		0010	100	Draft/Final Design Complete	0	0		08SEP00A																																				
AQ31120108	31.12.01.08	0010	65	FETONMOLASSES	220	66	11SEP00A	26APR02																																				
AQ31210605	31.21.06.05	0010	65	IRA REPORT	220	66	11SEP00A	26APR02																																				
AQ31010391	31.01.03.91	0010	100	PROJECT INITIATION	1	0	27OCT00A	27OCT00A																																				
AQ312106		0010	0	Implement IRA Complete	0	0		26APR02																																				
AQ31210606	31.21.06.06	0010	0	IRA Implementation Report	36	36	26APR02	07JUN02																																				
AQ31020503	31.02.05.03	0010	0	Quarterly GW Monitoring Reporting	253	253	26APR02	24APR03																																				
AQ312107		0010	0	Submit IRA Implementation Report	0	0		07JUN02																																				

Start Date 01JUN98
 Finish Date 24APR03
 Data Date 25JAN02
 Run Date 18FEB02 08:36



NFAC - C017 Sheet 1 of 5

CTO #0017 - NTC, Orlando, FL
CTO COMPLETION SCHEDULE
NAVY RAC SOUTHERN DIVISION



Activity ID	WBS CHARGE #	SIT	% Comp	Activity Description	Orig Dur	Rem Dur	Early Start	Early Finish	2002												2003												2004											
									J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J						
OU-1 MONITORING																																												
AQ35020502	35.02.05.02	0010	100	QUARTERLY SAMPLING	1	0	27DEC99A	30DEC99A																																				
AQ35020902	35.02.09.02	0010	100	QUARTERLY SYSTEM MON	38*	0*	31DEC99A	24FEB00A																																				
AQ35210605	35.21.06.05	0010	100	PREPARE/SUBMIT REPOR	54*	0*	14JAN00A	30MAR00A																																				
AQ35112332	35.02.05.02	0010	100	Semi-Annual Sampling Event	1	0	31MAY00A	21JUN00A																																				
AQ35020904	35.02.09.02	0010	100	Semi-Annual System Monitoring Analysis	14	0	22JUN00A	03AUG00A																																				
AQ35210608	35.21.06.05	0010	100	Prepare/Submit Semi-Annual Status Report	54	0	22JUN00A	05OCT00A																																				
AQ35210611	35.21.06.07	0010	100	Prepare/Submit Annual Status Report	20	0	29SEP00A	27OCT00A																																				
POTENTIAL HOT SPOTS																																												
AQ32010394	32.01.03.94	0010	100	Soil Subcontractor Submittals	60	0	05SEP01A	25JAN02A																																				
AQ32010395	32.01.03.95	0010	0	Review Subcontractor Plans & Submittals	8	8	25JAN02A	01FEB02																																				
AQ320005		0010	0	Award Soil Subcontractor	1	1	04FEB02	04FEB02																																				
AQ32010292	32.01.02.92	0010	0	Soil Subcontractor Mobilization	1	1	25FEB02	25FEB02																																				
AQ			0	17 - NTC, Orlando, FL	0	0																																						
AQ32080191	32.08.01.91	0010	0	Excavation of Contaminated Soils	25	25	25FEB02	29MAR02																																				
AQ32020905	32.02.09.05	0010	0	T&D Analysis	10	10	26FEB02	11MAR02																																				
AQ32192290	32.19.22.90	0010	0	T&D, Subtitle D Soils	5	5	12MAR02	18MAR02																																				
AQ32200190	32.20.01.90	0010	0	Backfill w/ Off-Site Fill	5	5	12MAR02	18MAR02																																				
AQ32200401	32.20.04.01	0010	0	Site Restoration	2	2	19MAR02	20MAR02																																				
AQ32210591	32.21.05.91	0010	0	Soil Subcontractor Demobilization	1	1	21MAR02	21MAR02																																				
AQ32210690	32.21.06.90	0010	0	Soils Subcontractor Post Construction Report	30	30	22MAR02	02MAY02																																				
AQ3221106		0010	0	Submit Soils Subcontractor Post Construction Rpt	0	0		02MAY02																																				

Appendix B

Submittal Register

Appendix C

Testing Plan and Log

