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NAS CECIL FIELD, FL
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SOURCE REMOVAL REPORT FOR EXCAVATION AND DISPOSAL OF PETROLEUM-CONTAMINATED SOIL AT BUILDING 82 NAS CECIL FIELD FL

3/1/2001

CH2MHILL CONSTRUCTORS INC

Source Removal Report

Excavation and Disposal of Petroleum Contaminated Soil at Building 82

Naval Air Station Cecil Field
Jacksonville, Florida

Contract No. N62467-98-D-0995
Contract Task Order No. 0002

Submitted to:

U.S. Naval Facilities Engineering Command Southern Division

Prepared by:

115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346

March 2001

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Constructors, Inc.

March 2001

Prepared/Approved By:

Samuel M. Ross, Project Manager — Date

Approved By:

R. Scott Newman, Program Manager — Date

Client Acceptance:

U.S. Navy Responsible Authority — Date

Distribution List

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NAS Cecil Field	1
City of Jacksonville, RESD, Air and Water Quality Division	1
CH2M HILL	1
Tetra Tech NUS, Inc.	1

CERTIFICATION OF TECHNICAL DATA CONFORMITY (March 2001)

The contractor, CH2M HILL Constructors, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data, delivered herewith under Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0002 is complete and accurate and complies with all requirements of this contract.

DATE:_____

NAME AND TITLE OF CERTIFYING OFFICIAL:

Samuel M. Ross
Project Manager

CH2MHILL
Constructors, Inc.

Certificate of Completion

CH2M HILL Constructors, Inc., attests that, to the best of its knowledge and belief, the excavation and disposal of petroleum contaminated soil at Building 82, delivered under Contract No. N62467-98-D-0995, Naval Air Station Cecil Field, Jacksonville, Florida, Contract Task Order (CTO) No. 0002, has been completed, inspected, and tested, and is in compliance with the contract.

_____ _____

Project QC Manager Date

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Acronyms

bls	below land surface
CCI	CH2M HILL Constructors Inc.
CTO	Contract Task Order
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FID	flame ionization detector
FL-PRO	Florida Petroleum Residual Organic
GCTLs	groundwater cleanup target levels
KAG	Kerosene Analytical Group
mg/kg	milligrams per kilogram
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NTFF	North Tank Fuel Farm
OVA	organic vapor analyzer
PAHs	Polynuclear aromatic hydrocarbons
PID	Photoionization detector
ppm	Parts per million
SCTLs	selected soil cleanup target levels
SJRWMD	St. Johns River Water Management District
SPLP	synthetic precipitation leaching procedure
TRPH	total recoverable petroleum hydrocarbons
TOC	top of casing
TtNUS	Tetra Tech NUS, Inc.
UST	underground storage tank
VOCs	volatile organic compounds

Source Removal Report Requirements – *Checklist*

Per FAC 62-770.300(3) the Source Removal Report shall contain the following information in detail, as applicable:

Site Name: Building 82, Air Traffic Control Tower (former Tank #G82 Location)
Date(s) of Source Removal: 10/10/00

Required Information	Response
1. Volume of product that was discharged, if known	*Unknown*
2. Volume of free product and the volume of groundwater recovered	*Not Applicable – No free product observed; no groundwater recovered.*
3. Volume of contaminated soil excavated and treated or properly disposed	*A total of 148.10 tons of soil excavated and disposed of offsite (See Section 2.3.2).*
4. Disposal or recycling methods for free product and contaminated soil	*Contaminated soil recycled at Kedesh, Inc., Kingsland, Georgia by thermal treatment/recycling.*
5. Disposal methods for other contaminated media	*Not Applicable*
6. Scaled site map (including a graphical representation of the scale used) showing the area of soil removed or treated and the approximate locations of all samples taken	*See Figures 1-2 and 2-1.*
7. Table summarizing free product thickness in each monitoring well or piezometer and the dates the measurements were made	*No free product observed in monitoring wells.*
8. Type of field screening instrument or method used	*Foxboro Model 128 OVA/FID*
9. Dimensions of the excavation(s) and location(s), integrity, capacities and last known contents of storage tanks, integral piping, dispensers, or appurtenances removed	*Excavation area: approx. 46 feet long x 15.6 feet maximum width x 7 feet deep less concrete pad (see Figure 2-1.)* *Tank size unknown, contained diesel fuel (removed on June 03, 1997) (Figure 1-2).*
10. Dimensions of the excavation(s) and location(s) and capacities of replacement underground storage tanks	*Not Applicable. no replacement tank installed.*
11. Table indicating the identification, depth and field soil screening results of each sample collected	*See Table 2-2.*
12. Depth to groundwater at the time of each excavation, measurement locations and method used to obtain that information	*Depth to groundwater 5.98 feet bls. Measured by electronic water level indicator (See Section 2.2.1) in well #CEF-G82-2S.*
13. Type of petroleum or petroleum products reportedly discharged	*Diesel Fuel*
14. Documentation confirming the proper treatment or proper disposal of contaminated soil, including disposal manifests, a copy of the treatment or acceptance of the contaminated soil and results of analyses, if performed	*See Table 2-2 and Appendices B and C.*
15. For land farmed soil, a copy of the pre-treatment and post-treatment analytical results	*Not Applicable. Soil recycled offsite.*

1.0 Introduction

CH2M HILL Constructors, Inc. (CCI) was contracted by the Southern Division Naval Facilities Engineering Command (NAVFAC) to perform the excavation of petroleum contaminated soil at Building 82, Air Traffic Control Tower on Naval Air Station (NAS) Cecil Field in Jacksonville, Duval County, Florida (refer to Figure 1-1, Site Location Map). The petroleum-contaminated soil was a result of a leaking underground storage tank (Tank G82), which was removed on June 03,1997. Tank G82 was located near the northeast corner of Building 82 and had been used to store diesel fuel for use in an emergency generator system. According the Site Assessment Report prepared by TetraTech NUS, Inc. (TtNUS), groundwater contamination was detected at the site during the Closure Assessment that was conducted concurrently with the removal of Tank G82 (TtNUS). The Site Assessment conducted by TtNUS delineated the extent of soil and groundwater contamination at the site. The estimated volume of soil present at the site was to be approximately 280 cubic yards. The Site Assessment Report recommended the remediation of the soil contamination prior to addressing groundwater contamination at the site (TtNUS, 2000). The source removal was conducted in accordance with the Florida Department of Environmental Protection (FDEP) Petroleum Contamination Site Cleanup rule, Chapter 62-770, of the Florida Administrative Code (FAC).

The scope of services for the excavation of petroleum-contaminated soil at Building 82 is described in detail in the NAS Cecil Field Basewide Work Plan, Revision 01 (CCI, 1998a) and the Work Plan Addendum No. 5, Removal of the North Tank Fuel Farm (NTFF) and Removals at Various Tank Sites (CCI, 2000). This work was authorized under the Response Action Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0002.

1.1 Site Background

Soils at the site were reported to have become contaminated with diesel fuel from an underground storage tank (UST) that had formerly been located onsite (Tank G82). Tank G82 had been located near the northeast corner of Building 82, and had been used to store diesel fuel for use in an emergency generator system. The tank was reported to have been removed on June 03, 1997. According the Site Assessment Report, groundwater contamination was detected at the site at concentrations in excess of the FDEP Groundwater Cleanup Target Levels (GCTLs) during a closure assessment conducted concurrently with the removal of Tank G82 (TtNUS, 2000). The Site Assessment delineated the extent of soil and groundwater contamination at the site, and estimated the volume of contaminated soil present at the site to be approximately 280 cubic yards. The Site Assessment Report recommended the remediation of the soil contamination prior to addressing groundwater contamination at the site (TtNUS, 2000). A site plan showing the site and the site conditions prior to the source removal is presented in Figure 1-2.

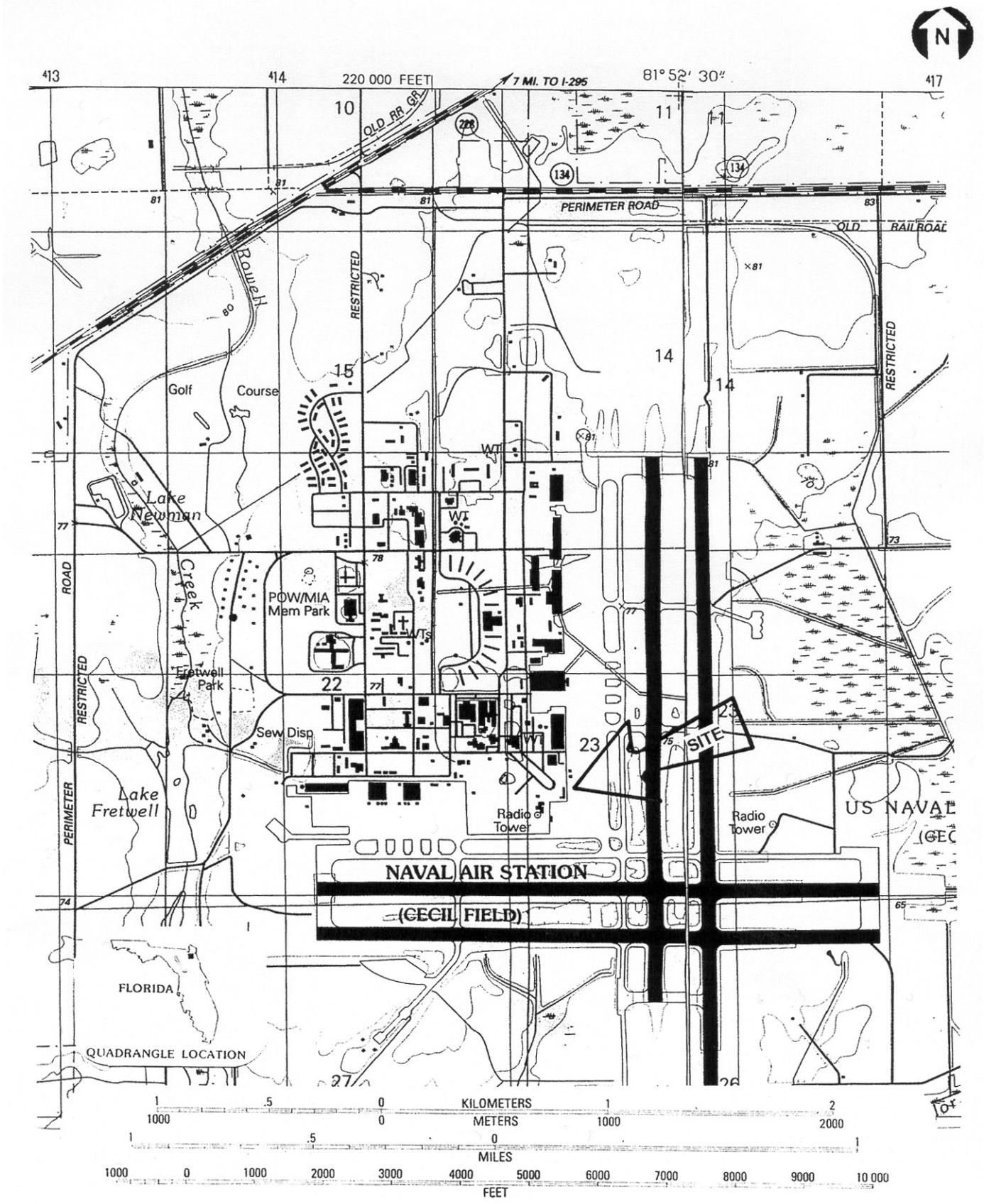

Figure 1-1
USGS Topographic Map, Fiftone and Jacksonville Heights Quadrangles
Building 82 Source Removal
NAS Cecil Field, Jacksonville, Florida

CH2MHILL

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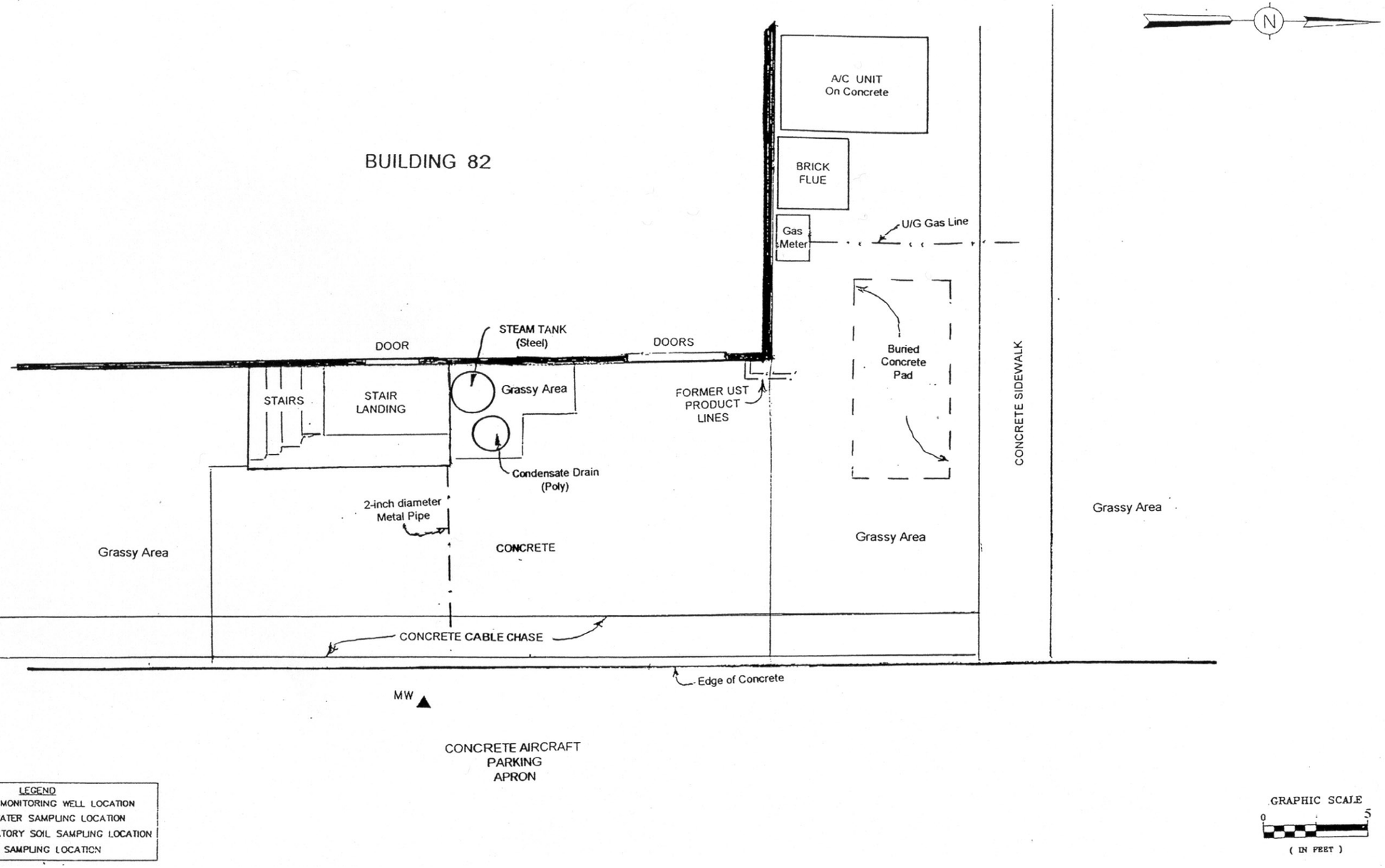

Figure 1-2
Site Map Indicating Soil Sampling Locations
NAS Cecil Field, Jacksonville, Florida

1.2 Project Objectives

The primary objective of the source removal was to excavate and properly dispose of petroleum contaminated soil that had been previously identified onsite. Soil excavation was conducted to remove petroleum-contaminated soil that exceeded the Soil Cleanup Target Levels (SCTLs) outlined in Chapters 62-770 and 62-777 FAC. FDEP allows the use of headspace analysis as a screening tool in evaluating whether soil samples exceed the SCTLs. Soil exhibiting an organic vapor analyzer (OVA) concentration of greater than 10 parts per million (ppm) were considered to be contaminated and were expected to contain constituents exceeding the SCTLs. Soil was excavated until OVA concentrations of less than 10 ppm were achieved, or, until the pre-determined limits were reached, which included the foundation of Building 82 to the west, and the concrete aircraft-parking apron to the east. Excavation was discontinued in those areas where further excavation of contaminated soil threatened to undermine these structures. The depth of excavation was determined by the depth to groundwater at the site, which was measured in a nearby flush-mounted monitor well (well # CEF-G82-2s). The depth to groundwater, measured relative to the top of the well casing (feet, top of casing [TOC]) was determined to be 5.98 feet. Following completion of the soil excavation activities, confirmatory soil samples were collected from the excavation for laboratory analysis for those parameters in the Kerosene Analytical Group (KAG), which included volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8021B, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310, and total recoverable petroleum hydrocarbons (TRPH) by the Florida Residual Organic (FL-PRO) method.

2.0 Source Removal Activities

The source removal conducted at Building 82 on October 10, 2000, generated a total of 148.10 tons of petroleum contaminated soil. The excavated soil was disposed offsite by thermal treatment / recycling. The soil was excavated to the water table, which was encountered at a depth of approximately 6 feet bls, and was then slightly over-excavated in order to ensure that all contaminated soil was excavated. No free product was observed during the excavation. Photo documentation of the field activities is provided in Appendix A.

2.1 Site Preparation

In preparation for excavation, concrete overlying portions of the area to be excavated were removed, and underground utility locate services were contacted for underground utility locations within the area of concern. The underground utility locate service identified an active subsurface gas line extending from north to south within the proposed excavation area, (near the western boundary of the area identified by previous environmental studies as impacted). Excavation in the vicinity of this gas line was conducted using hand tools. During soil excavation activities, previously unidentified underground structures and / or conduits were encountered, including the following:

1. A concrete cable vault was encountered at a depth of approximately 1.5 feet bls, and lying in a north-south direction within the proposed area of excavation, parallel to the edge of the concrete aircraft parking apron. This structure was thought to house communications cables for Building 82. Soils overlying this structure were removed, but soil below the cable vault was not excavated.

2. A subsurface structure was discovered during soil excavation activities near the southwest corner of the excavation, adjacent to a concrete stairway leading into Building 82. This structure was determined to be a steam-boiler blow-down tank and condensate drain for a boiler system located within Building 82. The condensate drain, which was constructed of a 30-gallon poly container filled with gravel, was dismantled during the excavation activities and replaced following the completion of the soil excavation activities. Soil was excavated up to the steel-constructed blow-down tank, but the tank was left in place to during the source removal activities.

3. Metal piping, which was thought to be inactive product lines associated with a UST that had been removed from the site in the past, was encountered during soil excavation activities near the northeast corner of Building 82. This piping was removed during the source removal activities.

4. A 2-inch diameter metal pipe bisecting the center of the excavation from east to west was discovered during the soil excavation activities. The purpose of this pipe was not determined.

5. A concrete pad was encountered in the north end of the excavation at a depth of 5.0 feet bls. The pad was thought to be the dead-man for the UST that formerly occupied the site.

The location of these underground structures and utilities are identified on Figure 1-2. No other utilities were encountered during the soil excavation activities.

2.2 Tank Removal

The Site Assessment Report for Building 82 indicated that an UST was removed from the site in June 1997 (TtNUS, 2000). The tank was reported to have stored diesel fuel for use in an emergency generator system located within Building 82. A closure assessment conducted at the time of the tank removal revealed the presence of petroleum contamination at the site.

2.3 Soil Excavation and Disposal

The extent of petroleum contaminated soil in the vicinity of the former emergency generator UST location at Building 82 was determined by the results of a site assessment conducted by TtNUS. Source removal activities, including the excavation of soil from the area previously identified as contaminated, were conducted on October 10, 2000. Soil excavation was initiated at the south end of the area identified as contaminated, and continued in a northerly direction.

Soil samples were collected continuously during excavation and were screened in the field for the presence of petroleum contamination using OVA soil headspace analysis procedures, in accordance with Chapter 62-770 FAC. In this procedure, two clean 16-ounce, wide mouth glass mason jars are half-filled with the soil sample to be tested, the jars are then sealed with aluminum foil, and allowed to equilibrate at ambient temperatures for a period of 5 to 10 minutes. The organic vapor concentration in the headspace of the jars is then analyzed using the organic vapor analyzer (OVA)/flame ionization detector (FID). One sample is analyzed with a carbon filter and the other sample is analyzed without the carbon filter. This is done to detect and correct for the presence of naturally occurring organic vapors (i.e., methane). The corrected reading is reported in ppm, and represents the concentration of organic vapor from the soil sample resulting from the presence of volatile petroleum hydrocarbon compounds in the sample. Soils with OVA readings in excess of 10 ppm was removed. Excavation was continued until OVA readings were below 10 ppm. The results of the OVA soil screening are summarized in Table 2-1, and OVA soil sampling locations are shown on Figure 2-1.

TABLE 2-1
Summary of OVA Soil Headspace Screening Results

Sample Location (refer to Figure 3)	Depth (feet bls)	FID Unfiltered (ppm)	FID with Filter (ppm)	FID Corrected (ppm)	Remarks
1	2.0	0	0	0	South wall of excavation
2	4.0	0	0	0	
3	5.5	0	0	0	South wall, just above water table
4	2.0	0	0	0	East wall, SE corner
5	4.0	0	0	0	
6	5.5	15	0	15	
7	2.0	0	0	0	Center, below 2-inch diameter pipe
8	4.0	0	0	0	
9	5.5	40	0	40	
13	2.0	0	0	0	East wall, at cable chase
14	4.0	22	0	22	
15	5.5	160	0	160	
16	2.0	0	0	0	West wall of excavation
17	4.0	0	0	0	
18	5.5	0	0	0	
19	2.0	0	0	0	East wall of excavation
20	4.0	84	0	84	
21	5.5	220	0	220	
22	2.0	0	0	0	Condensate drain
23	4.0	60	0	60	(Continued excavating)
24	5.5	190	0	190	
25	2.0	0	0	0	SW corner of excavation
26	4.0	76	0	76	Steam blow-down tank
27	5.5	95	0	95	
28	2.0	0	0	0	West wall of excavation
29	4.0	22	0	22	
30	5.5	30	0	30	
31	2.0	0	0	0	East wall of excavation
32	4.0	0	0	0	
33	5.5	67	0	67	
34	2.0	0	0	0	North wall, at concrete sidewalk
35	4.0	0	0	0	
36	5.5	0	0	0	
37	2.0	0	0	0	NW corner of exc., at sidewalk
38	4.0	0	0	0	
39	5.5	0	0	0	
40	2.0	0	0	0	NE corner of Building 82

TABLE 2-1 (CONTINUED)
Summary of OVA Soil Headspace Screening Results

Sample Location (refer to Figure 3)	Depth (feet bls)	FID Unfiltered (ppm)	FID with Filter (ppm)	FID Corrected (ppm)	Remarks
41	4.0	0	0	0	
42	5.5	14	0	14	
43	2.0	0	0	0	West wall of excavation,
44	4.0	0	0	0	Near gas line
45	5.0	6.2	0	6.2	
46	2.0	0	0	0	NW corner of excavation
47	4.0	0	0	0	
48	5.0	8.3	0	8.3	
49	2.0	0	0	0	West wall, near steam sump
50	4.0	27	0	27	
51	5.5	80	0	80	
52	2.0	0	0	0	West wall, below Building 82
53	4.0	86	0	86	
54	5.5	280	0	280	
55	2.0	60	0	60	Below former product lines
56	4.0	240	0	240	(NE corner of Building 82)
57	5.5	400	0	400	
58	2.5	0	0	0	Below stairway
59	5.0	9.4	0	9.4	
60	1.0	0	0	0	Near u/g gas line
61	1.0	0	0	0	“
62	1.5	0	0	0	“
63	1.5	0	0	0	“

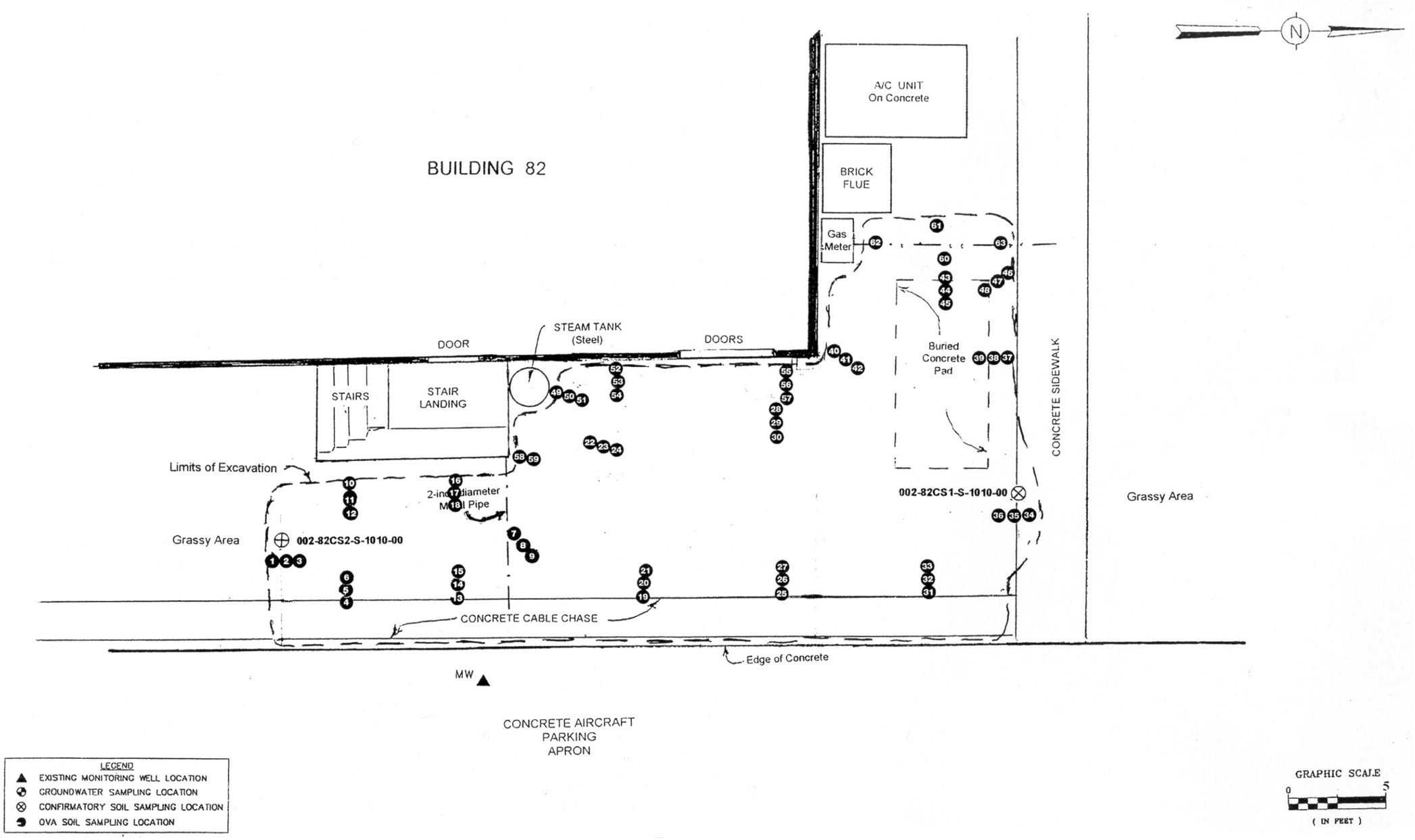

Figure 2-1
Site Map Indicating Site Conditions
Prior to Source Removal Activities
NAS Cecil Field, Jacksonville, Florida

Soil exhibiting an OVA concentration of greater than 10 ppm was considered contaminated and was expected to contain constituents exceeding the SCTLs. Soil was excavated until OVA concentrations of less than 10 ppm were achieved, or, until the pre-determined limits were reached, which included the foundation of Building 82 to the west, and the concrete aircraft-parking apron to the east. Excavation was discontinued in those areas where further excavation of contaminated soil threatened to undermine these structures. The depth to groundwater at the site determined the depth of the excavation. Groundwater was measured in a nearby flush-mounted monitor well (well # CEF-G82-2S). The depth to groundwater, measured relative to the top of the well casing (feet, TOC) was measured using an electronic water level indicator, and was determined to be approximately 5.98 feet bls. Soil was slightly over-excavated to ensure that all contaminated soil was removed. Following completion of the soil excavation activities, confirmatory soil samples were collected from the walls of the excavation for laboratory analyses. Samples were analyzed for those parameters in the Kerosene Analytical Group (KAG), which included volatile organic compounds (VOCs) by EPA Method 8021B, polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8310, and total recoverable petroleum hydrocarbons (TRPH) by the Florida Residual Organic (FL-PRO) method.

2.3.1 Soil Excavation

Soil was excavated to the water table, which was measured in an adjacent monitor well (well # CEF-G82-2S). The depth to water in the monitor well was measured relative to the TOC using an electronic water level indicator, and was determined to be approximately 5.98 feet bls. Soil was slightly over-excavated (to a maximum depth of 7 feet bls) to ensure that all contaminated soil was excavated.

The soil was excavated using a track hoe. In compliance with the requirement of Chapter 62-770.300 FAC to secure excavated soil “in a manner that prevents human exposure to contaminated soil and prevents soil exposure to precipitation that may cause surface runoff,” the excavated soil was stockpiled onsite on top of, and covered with, 6-mil plastic sheeting, pending disposal. Excavation was initiated at the south end of the area of impact, as indicated by the results of a previous environmental study (TtNUS, 2000), and continued in a northerly direction until the northern limits of contamination were reached. Soil in the vicinity of an active underground gas line was excavated by hand. A concrete pad was encountered at the north end of the area of excavation at a depth of approximately 5.0 feet bls. This concrete pad was thought to be the dead-man for the UST that formerly occupied the site. Soil was excavated up to and around this structure, and the pad was left in place.

The final area of excavation was irregular in shape, and measured approximately 45 feet in overall length (from north to south), and ranged in width (east to west) from approximately 7 feet at the narrowest point to approximately 15 feet at the widest point, with a maximum depth of approximately 7 feet bls (refer to Figure 2-1 and to Appendix A, Photo Documentation.). The source removal activities generated a total of 148.10 tons of petroleum-contaminated soil for disposal offsite.

2.3.2 Soil Transportation and Disposal

The source removal activities generated a total of 148.10 tons of soil requiring disposal. This soil was transported as non-hazardous waste to a permitted facility (Kedesh, Inc. of Kingsland, Georgia) for treatment and disposal by thermal treatment / recycling. The limits

of excavation are illustrated in Figure 2-1. A summary of the manifests is presented in Table 2-2 and copies of the disposal manifest and waste characterization analysis can be found in Appendix B. A copy of the Certificate of Recycling is found in Appendix C.

TABLE 2-2
Summary of Manifests for Soil Disposal

Date	Truck #	Company	Manifest #	Weight (pounds)	Tare (pounds)	Net (pounds)	Net (tons)
11/08/00	231	Modlin	163500	63,460	25,100	38,360	19.18
11/08/00	223	Modlin	163600	69,040	22,900	46,140	23.07
11/08/00	225	Modlin	163700	63,360	23,160	40,200	20.10
11/08/00	232	Modlin	163800	64,780	22,600	42,180	21.09
11/08/00	215	Modlin	163900	67,540	25,880	41,660	20.83
11/08/00	231	Modlin	164000	70,320	25,100	45,220	22.61
11/08/00	223	Modlin	164100	65,560	23,120	42,440	21.22
						Total	**148.10**

2.3.3 Backfilling and Site Restoration

The material used to backfill the excavation is certified clean fill brought in from the NTFF removal project at NAS Cecil Field. The certified clean soil used to backfill the Building 82 excavation was taken from NTFF Clean Pile 9. The laboratory analytical report showing Clean Pile 9 as clean fill is presented in Appendix D. The backfill was compacted using the excavation equipment. No compaction tests were required.

Following completion of the source removal activities, the area of excavation was returned to original grade using the clean fill and hydroseeded with a mixture of brown millet, rye, bahia grass, fertilizer and mulch.

2.4 Sampling and Analysis

Soil samples were collected from the walls and floor of the excavation and screened in the field using OVA headspace analysis procedures. Following completion of the soil excavation activities, two confirmatory soil samples was collected from the area of the excavation selected as representative of the apparent worst-case location for laboratory analysis. The soil sampling locations are shown on Figure 2-1.

2.4.1 Headspace Analysis

Soil samples collected from the excavation were screened using an OVA equipped with an FID in accordance with the procedures outlined in Chapter 62-770.200(8) FAC. See Section 2.3 for screening methodology. A methane filter was used to subtract the methane concentration from the results. The horizontal limits of excavation were expanded until net headspace concentrations were below 10 ppm, or, until the limits of excavation threatened to damage, by undermining, the foundation of Building 82 to the west, or, the concrete aircraft parking apron to the east. The results of the headspace analyses are summarized in Table 2-1.

Soil samples collected for field screening from the north and south walls of the excavation exhibited OVA headspace concentrations of less than 10 ppm. Soil samples collected from the east wall of the excavation continued to exhibit OVA headspace concentrations in excess of the 10 ppm target level; however, excavation was discontinued along the eastern perimeter at the direction of the Navy, in order to prevent damage to the adjacent concrete aircraft-parking apron. Likewise, soil samples collected from the west wall of the excavation continued to exhibit OVA headspace concentrations in excess of the 10 ppm target level, with the highest OVA readings detected in soil samples collected from immediately below a pair of fuel lines discovered during soil excavation that were believed to have been part of the former emergency generator UST system. However, excavation was discontinued in that direction at the direction of the Navy, due to the threat of damage to Building 82 through undermining.

2.4.2 Laboratory Analysis of Soil Samples

Following completion of source removal activities, two confirmatory soil samples were collected for laboratory analysis.

Confirmatory Soil Sample #002-82CS1-S-1010-00 was collected from the north wall of the excavation. The sample was collected from the wall of the excavation at a depth of approximately 5.0 feet bls, which was approximately 1 foot above the depth of the water table, from the location selected as representative of the apparent worst case location from the northern perimeter of the excavation.

Confirmatory Soil Sample #002-82CS2-S-1010-00 was collected from the south wall of the excavation. The sample was collected from the wall of the excavation at a depth of approximately 5.0 feet bls, which was approximately 1 foot above the depth of the water table, from the location selected as representative of the apparent worst case location from the southern perimeter of the excavation.

The confirmatory soil samples were collected using stainless steel hand tools and Encore brand samplers. Samples were placed into pre-cleaned; laboratory supplied sample containers, appropriately labeled, sealed in zip-lock type bags and placed on wet ice for transport. The samples were delivered to Navy approved laboratory for analysis by the following methods:

- EPA Method 8021B VOCs
- EPA Method 8310 extractable organic compounds
- FL-PRO total petroleum hydrocarbons

The confirmatory soil sampling location is shown on Figure 2-1. The results of the laboratory analysis of the confirmatory soil sample indicate no contaminant concentrations above SCTLs. The analytical results are summarized in Table 2-3. A copy of the analytical laboratory report is provided in Appendix E.

2.4.3 Collection and Laboratory Analyses of Groundwater Samples

No groundwater samples were collected during the source removal activities.

TABLE 2-3
Summary of KAG Analyses for Soil

Sample Location	Depth	Sample ID	Date	TRPH	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (ghi) Perylene	Benzo (k) Fluoranthene	Chrysene	Dibenzo (ah) Anthracene	Fluoranthene	Fluorene	Indeno (123cd) Pyrene	Phenanthrene	Pyrene	Naphthalene	1- Methylnaphthalene	2- Methylnaphthalene	Benzene	Ethylbenzene	Toluene	Xylenes	MTBE
North Wall	5'	002-82CS1-S-1010-00	10/10/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
South Wall	5"	002-82CS2-S-1010-00	10/10/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FDEP Soil Cleanup Target Levels*				340	2.1	27	2500	1.4	0.1	1.4	2300	15	77	0.1	1200	160	1.5	250	880	1.7	2.2	6.1	0.007	0.6	0.5	0.2	0.2

Notes:
Values reported in milligrams per kilogram (mg/kg).
ND = Not Detected
*SCTLs as specified in Chapter 62-777, FAC, Lower of A) Direct Exposure - Residential; B)- Direct Exposure, Industrial; or C) Leachability
*See Appendix E for detection limits.

3.0 Conclusions

Source emoval activities conducted at Building 82 generated a total of 148.10 tons of petroleum-contaminated soil that has been disposed offsite by thermal treatment / recycling. The soil was excavated to the water table, which was encountered at a depth of approximately 6 feet bls, and soil was then slightly over-excavated in order to ensure that all contaminated soil was excavated.

Soil samples collected for field screening from the north and south walls of the excavation exhibited OVA headspace concentrations of less than 10 ppm. Soil samples collected from the east wall of the excavation continued to exhibit OVA headspace concentrations in excess of the 10 ppm target level; however, excavation was discontinued along the eastern perimeter at the direction of the Navy, in order to prevent damage to the adjacent concrete aircraft-parking apron. Likewise, soil samples collected from the west wall of the excavation continued to exhibit OVA headspace concentrations in excess of the 10 ppm target level; however, excavation was discontinued in that direction at the direction of the Navy due to the threat of damage to Building 82 through undermining.

Following completion of the soil excavation activities, confirmatory soil samples were collected from the north and south walls of the excavation for laboratory analysis. Each of those samples were collected from locations selected as representative of the apparent worst-case location from the respective wall, and were analyzed for those compounds listed in the KAG. The results of the laboratory analysis of the two confirmatory soil samples were below SCTLs for all compounds of concern, confirming that petroleum contaminated soil above SCTLs has been removed within the horizontal limits of in the north and south direction, consistent with the recommendations of the Site Assessment Report (TtNUS, 2000).

4.0 References

TetraTech NUS, Inc., August 2000, Site Assessment Report for Building 82, Tank G82; Base Realignment and Closure; NAS Cecil Field, Jacksonville, Florida; Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract.

CH2MHILL Constructors, Inc., November 1998, Base wide Work Plan Revision 01, NAS Cecil Field, Jacksonville, Florida.

CH2MHILL Constructors, Inc., May 2000, Work Plan Addendum Number 5, Removal of North Fuel Tank Farm and Removals at Various Tank Sites, NAS Cecil Field, Jacksonville, Florida.

Appendix A

Photo Documentation

Appendix B

Copies of Soil Disposal Manifests and Waste Characterization Analysis

Appendix C

Certificate of Treatment

Appendix D

Analytical Laboratory Reports for Clean Fill

Appendix E

Analytical Laboratory Reports For Confirmatory Soil Sample