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NS MAYPORT
5090.3a

LETTER REPORT REGARDING SOIL EXCAVATION PLAN FOR TANK SITE 365 NS
MAYPORT FL
12/11/2001
TETRA TECH NUS



TETRA TECH NUS, INC.

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Document Tracking Number 02JAX0008

December 11, 2001

Project Number N2814

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Beverly Washington (Code ES247)
Remedial Project Manager
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: Clean Contract Number N62467-94-D-0888
Contract Task Order Number 0176

Subject: Soil Excavation Plan
Tank Site 365
Naval Station Mayport
Mayport, Florida

Dear Ms. Washington:

Tetra Tech NUS, Inc. (TtNUS) is pleased to present this Draft Soil Excavation Plan for the Building 365 Underground Storage Tank (UST) site at Naval Station (NS) Mayport, in Mayport, Florida. The following Soil Excavation Plan has been prepared to address an area of impacted soils, which exceed Florida Department of Environmental Protection (FDEP) Soil Cleanup Target Levels (SCTLs) for residential exposure. Due to the limited extent of these impacted soils, TtNUS has prepared this Soil Excavation Plan as an alternative to a more extensive Remedial Action Plan (RAP). This document provides a conceptual design for the excavation at Tank Site 365. This work is being performed under Contract Task Order 0176 to contract number N62467-94-D-0888.

Background Information – Tank Removal and Site Assessment Reports

Building 365, the NS Mayport Fire Station, was the location of a former 500-gallon fuel oil UST, which was removed from service via excavation in April 1995. During excavation activities, both soil and groundwater contamination was encountered. Excessively contaminated soil, as defined by the results of organic vapor analyses, was noted in one closure sample at 190 parts per million (ppm) in the north wall of the excavation at a depth of 5 feet below land surface (bls). A sample from the west wall of the excavation was analyzed via an organic vapor analyzer (OVA) and found to contain 40 ppm at a depth of 5 feet bls. Groundwater from a well installed in the center of the excavation was tested and initially found to contain 10 micrograms per liter (µg/l) of benzene exceeding the FDEP Groundwater Cleanup Target Level (GCTLs). Other constituents detected included ethylbenzene, toluene, and xylene at levels that did not exceed GCTL values.

In 1998, Bhate Environmental Associates, Inc. (Bhate) conducted a Contamination Assessment Report (CAR). The results of the CAR indicated that impacted soil above regulatory thresholds was apparently restricted to the areas east of the former UST. Groundwater results indicated that trace levels of fuel related compounds were restricted to the immediate area of the former UST; however, no constituents were detected above GCTLs.

In 1999, Bhate conducted additional work to address deficiencies in the CAR outlined in a letter by FEDP dated June 15, 1998. The results of this work are documented in a CAR Addendum dated

September 10, 1999. The additional work included the installation of an additional well, additional soil borings, and analytical work. The results of the additional assessment did confirm the presence of impacted soils, but found only one location where FDEP SCTLs were exceeded. This location is east of the former tank pit at soil boring S-3 where total recoverable petroleum hydrocarbons (TRPHs) were detected at a depth of 3 feet bls at 8480 ppm. Attachment A provides key figures including tag maps from both the CAR and CAR Addendum reports. Soil boring S-3 is shown on Figure 3 in Attachment A.

Based on a review of the CAR and CAR Addendum, FDEP issued a letter dated September 29, 1999 that requested a RAP be prepared to address contaminated soils. FDEP correspondence is provided in Attachment B.

Regulatory Discussions

TtNUS presented the results of the prior assessment activities to the Naval Station Mayport Partnering Team on October 10, 2001 for the purpose of obtaining consensus as to appropriate follow-on actions. Since impacted soil above residential SCTLs at the site is restricted to a single boring, TtNUS recommended the preparation of a Soil Excavation Plan as an alternative to the preparation of a RAP, as suggested in FDEP's September 29, 1999 letter. Mr. Jim Cason (author of the FDEP September 29, 1999 letter) concurred. A consensus was reached that approved a limited excavation be conducted at the location of boring S-3 with soil screening methods via OVA to guide the excavation and collection of verification samples. Due to the location of utilities and Building 365, it was determined that hand digging methods may be warranted.

Scope of Work

The excavation should center on boring S-3 shown in Figure 3 in Attachment A. The actual extent of the excavation will be defined in the field by the contractor via OVA soil screening and visual evidence of impact. It is anticipated that the excavation will extend to an approximate depth of 5 feet bls and should include impacted soils from the vadose zone. The lateral extent of the excavation is unknown, but may extend to the northwest approximately 5 feet, toward the original location of the UST and to the south approximately 5 feet. Due to the presence of utilities and the adjacent structure, hand digging methods may be necessary to complete the source removal.

The contractor shall be responsible for the following:

- Maintaining the schedule and methods of excavation.
- Overseeing all aspects of work-site health and safety.
- Working in a public area. The work area should be well marked with signs or flagging tape, limiting access to the construction area.
- Providing final design information to include shoring plans for excavation near the building and utilities as necessary.
- Identifying and avoiding all aboveground and underground utilities or other man made structures. A storm sewer is known to be located near the impacted area that may require hand digging and special support efforts (i.e., shoring).
- Authorizing and conducting waste characterization, waste transport (both on and off site), and disposal.
- Visually screening the soils for evidence of petroleum impacts and field screen with an OVA to determine the extent of the excavation.
- Excavating of soils with OVA readings greater than 50 ppm and soils visually impacted by petroleum. If the impacts go below the nearby foundation of building 365, cease excavation in that direction and

notify the Navy. The excavated soils will be stockpiled and covered with heavy-duty polyethylene sheeting at the site. This will be done in a manner to avoid the potential for contaminating surrounding soil or surface water. Alternately, soil may be stockpiled in properly covered roll-off containers or drums as appropriate. These soils will be assessed and properly disposed of based on waste characterization activities.

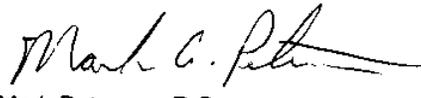
- Notifying the Navy if observations indicate contaminants may extend beyond the planned lateral or vertical limits of the excavation.
- Ensuring the depth of the excavation extends to the water table, expected to be approximately 5 feet bls.
- Collecting a minimum of five confirmation samples from the excavation. One sample will be collected approximately 3 feet bls from each side wall of the excavation and one from the base of the pit in the unsaturated zone if practical. The Florida-Pro Method will analyze these samples for TRPH. Note: confirmation sampling requirements may need to be adjusted based on field conditions and the final extent of the excavation.
- After confirmation samples indicate that impacted soils are below FDEP SCTL values, backfill should be used to return the excavation to grade. Backfill materials should be obtained from an uncontaminated source and be capable of supporting the same type of vegetation or structure as the soil removed. Backfill materials should be certified as clean or tested by the excavation contractor to ensure the material is suitable for use as backfill prior to being brought onto the site.
- Backfill should be compacted in areas where utilities or nearby structures are present to prevent settling. Compaction should be completed with a sheep's foot or similar device. However, no compaction will be necessary where there is no threat to structures or utilities.
- After completion of backfill activities, the ground surface, structures, and vegetation will be restored to a similar or better condition that existed prior to excavation. Seeding will be required over the backfill area to establish vegetative cover and to prevent erosion.
- After impacted soils have been removed and clean closure is confirmed by laboratory analyses of confirmation samples, the contractor will prepare a source removal report for submittal to the NS Mayport Partnering Team. The report will contain all elements required by the FDEP to obtain site closure including a maximum photographs, figures, tables, analytical results, soil disposal manifests, and clean fill certification.
- An estimated cost of the Interim Removal Action is provided on Table 2 in Appendix C.

We appreciate the opportunity to provide you with these services. If you have any questions or require additional information, please contact me at (904) 281-0400.

Sincerely,



Alan Pate
Staff Scientist II



Mark Peterson, P.G.
Task Order Manager

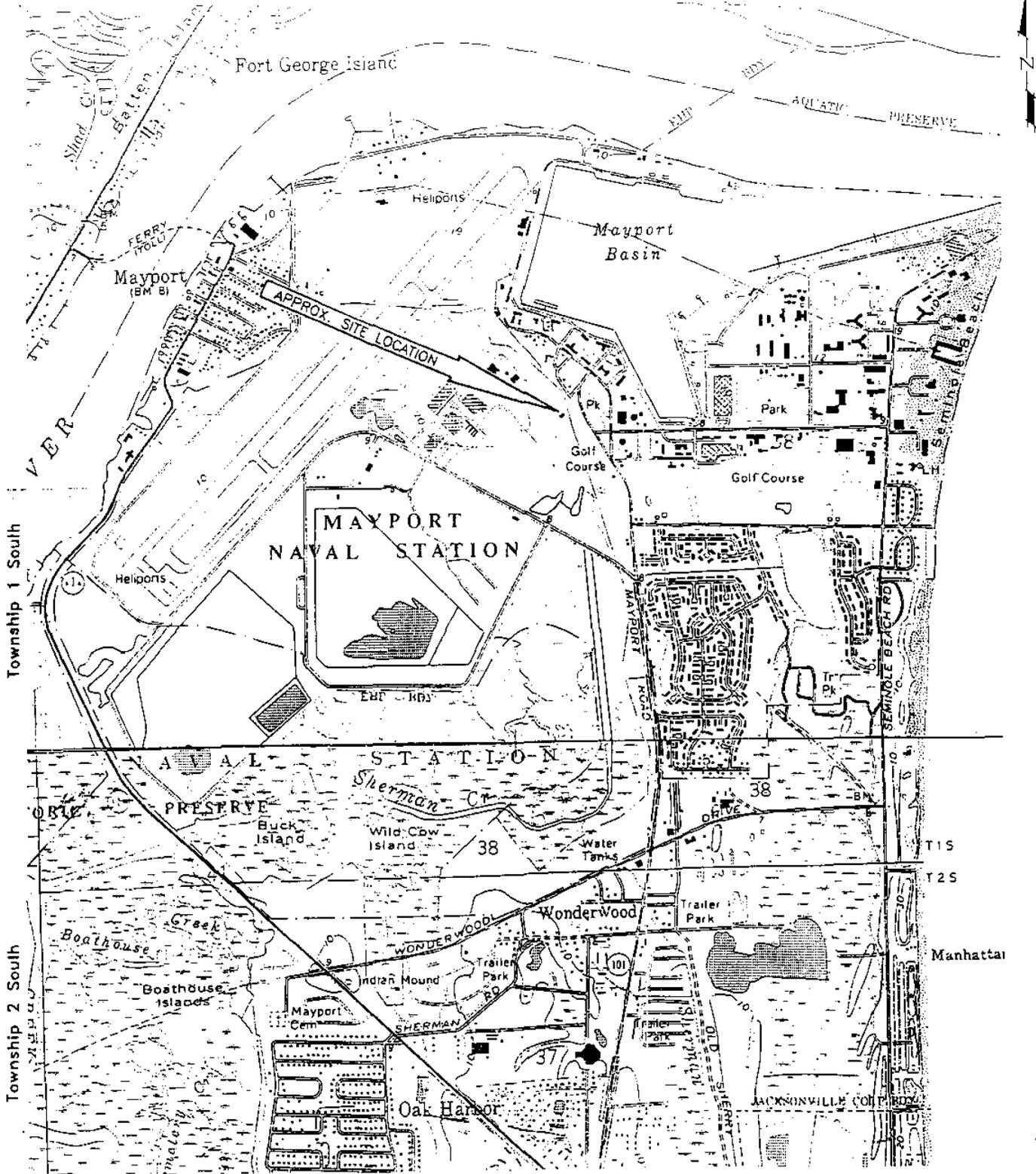
Enclosures

cc: Mr. Jim Cason, FDEP
Mr. Jan Bovier, NS Mayport
Ms. D. Wroblewski, TtNUS (w/o enclosures)
Mr. M. Perry, TtNUS
Project Office File

ATTACHMENT A

**FIGURES FROM SAR AND SAR ADDENDUM
BHATE ENVIRONMENTAL ASSOCIATES, INC.**

Range 29 East



Township 1 South

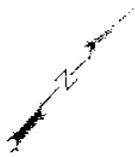
Township 2 South



Source: USGS 7.5 Minute Topographic Map
 Mayport, Florida Quadrangle, Revised 1992
 Jacksonville Beach, Florida, Revised 1992
SITE LOCATION DIAGRAM

Contamination Assessment Report
 UST 365
 Naval Station Mayport
 Mayport, Florida

PROJECT NO.	SCALE	DATE	DRAWN BY:	USGS
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GOLF COURSE

UNDERGROUND ELECTRIC LINE

WATER

UNDERGROUND ELECTRIC LINE

FM

SEWER MANHOLE

BUSH

CONCRETE POLE

TRANSFORMER

BUILDING 365

BUILDING 365

BUILDING 365

BUILDING 365

BUILDING 365

BUILDING 365

S-1
0/-

S-2
0/-

S-3
0/-

S-4
0/-

S-5
0/-

S-6
0/-

S-7
0/0

S-8
0/0

S-9
0/0

S-10
0/30

S-11
0/0

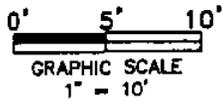
S-12
0/0

APPROXIMATE TANK LOCATION

BUILDING 365

LEGEND

- SOIL SAMPLING LOCATION
- APPROXIMATE EXTENT OF EXCESS SOIL CONTAMINATION
- 0/30 1FT SAMPLE DEPTH
- 0/- 3FT SAMPLE DEPTH



NOTE:
The information shown on this map was obtained in part from investigations by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.

S-1 through S-6 screen results are for the 1 to 3 foot interval.



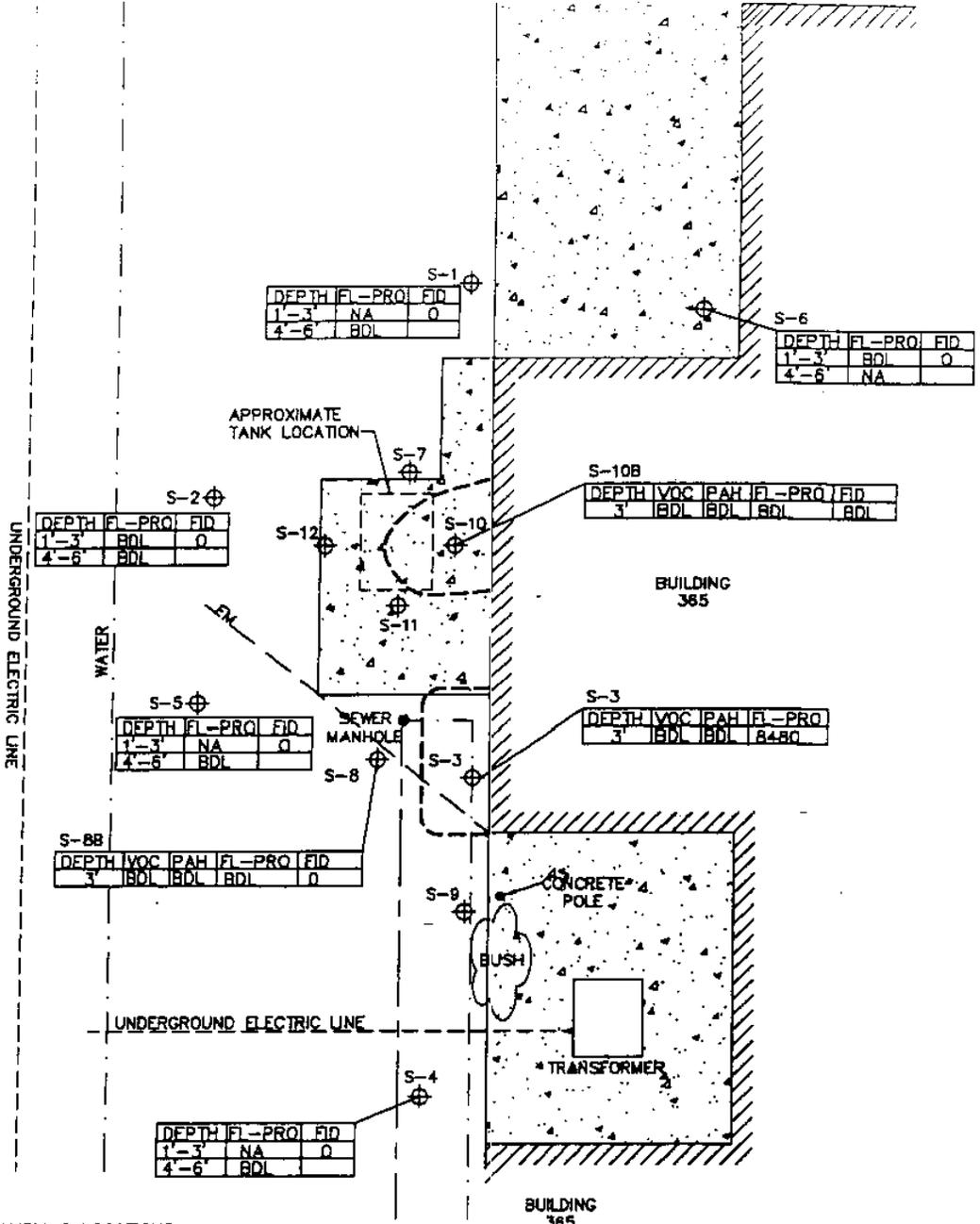
SOIL SCREENING MAP

PROJECT NO.	SCALE	DATE	DRAWN BY:
007005	1" = 10'	0 15 / 07	---
			DRAWING NO. 0001

Contamination Assessment Report
UST 365

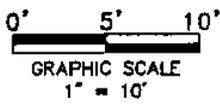
Naval Station Mayport
Mayport, Florida

Figure 2



LEGEND

- ⊕ GEOPROBE SOIL SAMPLING LOCATIONS
- FL-PRO FLORIDA PETROLEUM RESIDUAL ORGANICS IN PARTS PER MILLION
- FID FLAME IONIZATION DETECTOR IN PARTS PER MILLION
- BDL BELOW DETECTION LIMIT
- NA NOT ANALYZED
- APPROXIMATE EXTENT OF EXCESS SOIL CONTAMINATION



NOTE:
The information shown on this map was obtained in part from investigations by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.



SOIL ANALYTICAL RESULTS

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
9970058	1"=10'	9/8/97	
DRAWING NO:			FIG8A

Contamination Assessment Report
UST 365
Naval Station Mayport
Mayport, Florida

Figure 3



GOLF COURSE

UNDERGROUND ELECTRIC LINE

WATER

APPROXIMATE TANK LOCATION

SEWER MANHOLE

BUILDING 365

BUILDING 365

MW-3

MW-4

MW-5

MW-6

MW-1

MW-2

FL-PRO	BDL
TL	BDL

FL-PRO	BDL
TL	BDL

FL-PRO	BDL
TL	BDL

PAH	BDL
VOC	SEC-BUTYBENZENE 1.6
	NAPHTHALENE 7.4
FL-PRO	BDL
TL	BDL

FL-PRO	BDL
TL	BDL

FL-PRO	BDL
TL	BDL

LEGEND

- MONITOR WELL LOCATION
- BDL BELOW DETECTION LIMIT
- PAH POLYNUCLEAR AROMATIC HYDROCARBONS IN PARTS PER BILLION (ppb)
- VOC VOLATILE ORGANIC COMPOUND (ppb)
- TL TOTAL LEAD IN PARTS PER MILLION
- FL-PRO VOLATILE ORGANIC COMPOUNDS



NOTE:
The information shown on this map was obtained in part from investigations by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS

Contamination Assessment Report
UST 365

Naval Station Mayport
Mayport, Florida



PROJECT NO.	SCALE	DATE	DRAWN BY:
997005R	1" = 10'	9/8/07	---
			DRAWING NO.: 8851A

Figure 4

ATTACHMENT B
FDEP CORRESPONDENCE



Department of
Environmental Protection

Jawton Chiles
Governor

Twin Towers Building
2500 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia E. Wetherell
Secretary

June 15, 1998

Ms. Beverly Washington
Department of the Navy, Petroleum Program
Southern Division - Naval Facilities Engineering Command
PO Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

File: 363sal.doc

RE: Draft Contamination Assessment Report Tank Site 365, Naval Station Mayport,
Mayport, FL

Dear Ms. Washington:

I have reviewed the above document dated February 2, 1998 (received February 4, 1998). The following comments should be considered by the Navy and the response submitted as a Site Assessment Report (SAR) Addendum:

1. Tank 365 was a 500 gallon underground fuel oil tank which was removed. The report stated that the former tank site is now covered by a concrete pad for an above ground storage tank which was installed but subsequently removed. At the time of closure, it is stated in the report that both contaminated soil and ground water were present. The report did not indicate if contaminated soil was removed or if a ground water sample was obtained at the time of closure. Please submit a copy of the closure documentation, including appropriate laboratory results, if available.
2. Soil borings obtained during the investigation are inadequate for determining the extent of soil contamination. Utilizing the general instructions (from "Storage Tank System Closure Assessment Requirements" February 1998), obtain four soil borings around the tank, placed as close to the outside dimensions of the former tank as possible with one of the borings in the center of the former tank location. If contamination is noted, conduct additional borings as required to sufficiently characterize the extent of contamination. Additionally, please obtain at least one soil sample from this location for laboratory analysis as required in Chapter 62-770, F.A.C. Please note that analytical samples of soil must be obtained during an assessment. Not less than one is required; more are required if contaminated soil is found. Please follow the guidance in Chapter 62-770 F.A.C and in "Guidelines for Assessment and Source Removal of Petroleum Contaminated Soil, May 1998." Please also note the different analytical requirements in Table I or Table II.

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Ms. Beverly Washington
Page Two
June 15, 1998

depending on the type of contamination at the site; in this particular case, the requirements in Table I apply.

3. Please obtain one soil boring between the end of the former tank location and along or in close proximity to the former piping location. If contamination is noted, obtain additional borings, sufficient to characterize any contamination should be obtained.
4. Additional soil borings should be obtained in the area along, and beginning at, the location of the apparent sewer line at S-3, toward the location of the former tank and continuing along the force main (FM), if necessary. The location and number of soil borings will depend on the degree of contamination noted.
5. Please install a shallow monitoring well near the center of the location of the former tank and if significant soil contamination is noted in the new soil borings, install a shallow monitoring well in the center of the area of greatest contamination and sample the ground water for the appropriate parameters in Table I in Chapter 62-770, F.A.C., remembering the caution on detection limits noted later in these comments. Please be aware that if the areal extent of soil contamination is significant, additional monitoring wells may be required, sufficient to delineate the extent of ground water contamination. Please furnish a figure which depicts the area east of Building 365, in order to help determine the possible extent of ground water contamination, since, according to information furnished in the report, ground water flow may at times be to the northeast.
6. Please observe the soil sampling requirements in Chapter 62-770, F.A.C when conducting the soil borings.
7. Detection limits for five semivolatile constituents in ground water were above regulated limits. Additionally, TRPH was not determined and lead was present above the Florida standard in all monitoring wells except MW-3. Please resample all monitoring wells for semivolatile constituents and TRPH, ensuring that the detection limits for compounds with regulatory guidelines or standards are low enough to allow the results to be utilized for determining the presence or absence of contamination. Please resample all monitoring wells except MW-3 for lead, ensuring the use of a quiescent sampling technique.
8. Please obtain a round of water level determinations at all site monitoring wells and present a revised figure with the ground water flow direction plotted on it. This figure may also be utilized to depict ground water contamination, if present.
9. Please submit a properly certified copy of the Assessment Report for Tank Site 365. Please assure that all future and additional documents in this regard are also properly signed and sealed according to Chapter 62-770.600 (6), F.A.C. In lieu of submitting a complete report, you may submit a properly executed certification page which references the site report and I will insert the page into my copy.

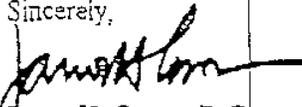
Ms. Beverly Washington

Page Three

June 15, 1998

Please present the above requested data in a SAR Addendum. Based on the provisions of Chapter 62-770, F.A.C., please evaluate the data and propose a course of action for the site. If further clarification is required or if you have any questions, please contact me at 850-921-4230.

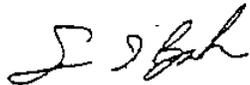
Sincerely,



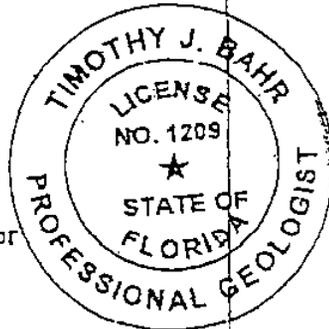
James H. Cason, P.G.
Remedial Project Manager

CC: Jan Bouvier, NAVSTA Mayport
Brian Cheary, FDEP Northeast District
Jerry Young, City of Jacksonville

Reviewed by:



Timothy J. Bahr, P.G.
Professional Geologist Supervisor
Bureau of Waste Cleanup



6/16/98

Date

JJC  ESN ESN



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

September 29, 1999

Ms. Beverly Washington
Department of the Navy, Petroleum Program
Southern Division - Naval Facilities Engineering Command
PO Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

file: 365sara1.doc

RE: Site Assessment Report Addendum Tank Site 365, Naval Station Mayport,
Mayport, FL

Dear Ms. Washington:

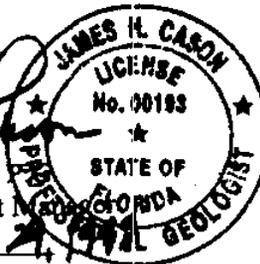
I have reviewed the above document dated September 10, 1999 (received September 16, 1999). Information provided in the addendum indicates that the requirements of Chapter 62-770.600, F.A.C. have been met. Please submit a Remedial Action Plan pursuant to Chapter 62-770.700, F.A.C. that addresses the contaminated soil at the site.

If further clarification is required or if you have any questions, please contact me at 850-921-4230.

Sincerely,

James H. Cason
James H. Cason,
Remedial Project Manager

September 29, 1999
Date



CC: Emmett A. Beers, BHATE Environmental, Birmingham, AL
Randy Bishop, NAVSTA Mayport
Michael Fitzsimmons, FDEP Northeast District
Jerry Young, City of Jacksonville

TJB *B* JJC *JJC* ESN *ESN*

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ATTACHMENT C
ESTIMATED COST OF INTERIM REMOVAL ACTION

**Table C-2
Excavation and Disposal Cost**

Interim Removal
UST Site 365
Naval Station Mayport
Mayport, Florida

Estimator: ALP

Checked By:

COST SUMMARY TABLE (costs rounded to nearest \$1000)

DIRECT COSTS

Project Management	\$7,000
Prepare Workplans	\$1,000
Site Preparation/Mobilization/Utility Clearance	\$1,000
Excavation/Sampling	\$8,000
IDW Management/Offsite Disposal of Soil	\$3,000
Site Restoration	\$4,000
Laboratory Costs	\$1,000
Reporting	\$3,000
Other Direct Costs	\$1,000
Total Direct Costs	\$29,000

Costs for Excavation and Offsite Disposal	\$11,000
Indirect Costs	
Contingency (@20%)	\$2,000
Total Costs for Excavation and Offsite Disposal	\$13,000

**Table C-2 (Continued)
Interim Removal Costs**

<u>DIRECT COSTS</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Project Management				
Contracts Manager	1	hrs	\$60	\$60
T.O. Manager/Technical Expert	83	hrs	\$60	\$4,980
Sr. Chemist	4	hrs	\$60	\$240
Sr. Geologist/Hydrogeologist	8	hrs	\$60	\$480
Administrative Assistant	31	hrs	\$40	\$1,240
<u>Subtotal for Project Management</u>				\$7,000
Prepare Workplans				
<u>Health and Safety Plan</u>				
Technical Expert (Senior Review)	2	hrs	\$80	\$160
Senior Health and Safety	16	hrs	\$60	\$960
Senior Technical Support Technician (Figures)	4	hrs	\$60	\$240
Administrative Assistant	2	hrs	\$40	\$80
<u>Subtotal for Workplans</u>				\$1,440
Site Preparation/Mobilization/Utility Clearance				
Company truck	2	days	\$50	\$100
TOM/Technical Expert	2	hrs	\$80	\$160
Senior Geologist	10	hrs	\$60	\$600
<u>Subtotal for Site Preparation/Mobilization/Utility Clearance</u>				\$860
Excavation/Sampling				
Excavation of Soil: (assume two people 10 hrs/day, for five days)				
TOM/Technical Expert	4	hrs	\$80	\$320
Staff Scientist	50	hrs	\$50	\$2,500
Senior Technician	50	hrs	\$50	\$2,500
Company Truck	5	days	\$50	\$250
Bobcat 753 series	1	wk	\$480	\$480
Compaction using sheep' foot	10	cy	\$3	\$30
ODCs	1	ls	\$500	\$500
TRPH (FLPRO) assume 16 samples, 2 QC, 24 hr TAT	6	ea	\$150	\$900 Qanterra Quote
Sampling equipment (PID)	1	wk	\$1,000	\$1,000
<u>Subtotal for Excavation/Sampling</u>				\$8,480
IDW Management/Offsite Disposal of Soil				
Senior Geologist	4	hrs	\$60	\$240
Field Technician	8	hrs	\$40	\$320
Transportation, and disposal of contaminated soil to a Subtitle D Facility	13	ton	\$40	\$520
Characterization Sampling, 24 hr TAT (TRPH FLPRO)	7	ea	\$250	\$1,750 Qanterra Quote
Haul and Return	1	ea	\$150	\$150
Delivery of Roll-off	1	ea	\$25	\$25
Company Truck	3	days	\$50	\$150
Note: Cost derived from quote from Tammy Wilson of Gateway Transportation & Disposal Services; (1-800-901-0081) cost quoted was \$40.00/ton.				
<u>Subtotal for IDW Management/Offsite Disposal</u>				\$3,155
Site Restoration				
Backfill	1	load	\$85	\$85
Seeding	1	bag	\$50	\$50
Senior Geologist	30	hrs	\$60	\$1,800
Staff Scientist	30	hrs	\$50	\$1,500
Company Truck	3	days	\$50	\$150
<u>Subtotal for Site Restoration:</u>				\$3,585
Assumptions: Grass area will be backfilled with certified clean fill and seeded				

