SAMPLING AND CLOSURE PLAN

AT

FORMER FFTU SLUDGE PIT
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

ENVIRONMENTAL JOB ORDER CONTRACT (EJOC)
CONTRACT NO. N68950-96-D-0052
DELIVERY ORDER NO. 0055

TOLTEST, INC.

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TOLTEST PROJECT NO. 38049.01

Submitted to:

Department of the Navy
Naval Training Center (NTC) – Environmental Department
Building 1-A, 201 Decatur Avenue
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Submitted by:

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July 1999

TOLTEST, INC.

TABLE OF CONTENTS

Page No.

1.0 Introduction

The United States Navy (the Navy) owns and formerly operated a settling pond referred to in this document as the former sludge pit. The Sludge Pit should not be confused with two retention ponds in the west northwest area of the adjacent former Fire Fighting Training Unit (FFTU) site which were tested, filled and closed along with the FFTU acreage. Appendix A contains Figure 1, Site Map, depicting the former Sludge Pit area.

Both the Sludge Pit and the FFTU are now incorporated into the Great Lakes Willow Glen Golf Course on Buckley Road, Great Lakes, Illinois. The FFTU has been closed under Illinois Admin. Code Chapter 35 part 742, Tiered Approach to Clean up Objectives, using standards for petroleum releases. The Sludge Pit area is being considered separately for the following reasons:

1. it was part of the very early operations of the FFTU (it was used sometime in the 1940s),
2. its use doesn't qualify it for consideration as a LUST site,
3. the FFTU site boundary did not include the Sludge Pit area, and
4. it is easier to obtain program funds for it by considering it part of the Golf Course Landfill which is separate from the FFTU.

For closure purposes, the Sludge Pit should be considered an Installation Restoration (IR) site, which will be addressed as a CERCLA site. The appropriate state cleanup standards and methods for obtaining closure are provided or referenced in IAC Title 35 Part 740: Site Remediation Program (SRP).

2.0 Closure Objective

The objective of this Closure Plan is to establish procedures for the clean closure of the former sludge pit area. Sampling for a range of compounds is proposed from random locations within the area suspected of filtering or collecting materials from the former FFTU operations. Sampling will be limited to Sludge Pit materials and soil below the residual materials. Groundwater will not be collected. Evidence to date does not indicate that groundwater has been impacted by the Sludge Pit. See Figure 2 in Appendix A for

suggested sample locations.

Contaminants of potential concern include those listed on the Target Compound List (TCL) and Target Analyte List (TAL) as specified in USEPA Region 5's Superfund Model Quality Assurance Project Plan (QAPP), Revision 1, dated May 1996. Analytical methods for metals will be modified to satisfy the requirements of IEPA's "soil leaching to groundwater pathway" model. The results of the random sampling will be evaluated to determine the contaminants of concern requiring further investigation. Performance Standards for the specific chemical compounds will then be proposed to ensure that hazardous materials do not threaten human health.

3.0 Closure Premise

1. The Navy Sludge Pit Area comprises an area approximately 130 feet by 130 feet located in the Willow Glen Golf course. It can be located using permanent bench marks established by Beling during the remediation activities at the FFTU, together with the maps developed for the Beling Project 29886.

2. Sampling random locations for the TCL and the TAL is recommended to determine the compounds of concern.

3. Background concentrations for compounds of concern will be difficult to obtain due to the former land use, and the fact that the soils surrounding the site have been disturbed.

4. The SRP for closure of CERCLA sites includes calculating closure objectives using Illinois Admin. Code Chapter 35 Part 742, Tiered Approach to Clean Up Objectives (TACO) and IEPA guidance. Under the 740 rules, Tier 1 (and sometimes Tier 2) remediation objectives must be calculated for compounds which are not on the 742 Tables.

5. The Federal Soil Screening Level Equations were utilized by IEPA in developing the "soil leaching to groundwater" remediation objectives. These equations will be utilized for closing the Sludge Pit where a) pre-calculated numbers protective of human health for a specific compound are not already in the TACO Tables, and/or

b) where Tier 2 investigations are necessary.

6. The same soil screening formulas can be used with alternate risk factors, such as the 10^{-4} exposure scenario if the site does not meet the criteria for 10^{-6}. IEPA and USEPA are expected to agree with the Navy that relaxed standards for numerous compounds are appropriate for this site. Evaluation of data using 10^{-4} as incremental increased risk for human health has been successfully utilized in the past at golf courses, and may require an institutional control at Willow Glen.

7. The calculation of new allowable concentrations "at the point of attenuation" and/or "at the source" should include exposure pathways appropriate for the golfer and construction worker.

8. Clean up objectives for golfers have previously been approved by the IEPA and USEPA. Exposure scenarios and remediation objectives previously approved by the Agencies for closure of the Fort Sheridan Golf Course, Fort Sheridan, IL, will be proposed for closure of the former Sludge Pit.

9. Exposure pathways will be limited to ingestion and inhalation unless IEPA or USEPA proposes and justifies additional modeling and analysis.

10. Closure objectives for metals in the ingestion pathway, as established by IEPA, must be analyzed using TCLP or the SPLC method, therefore, the analyses of compounds on the TCL will be consistent with IEPA's requirements. For instance, soil samples will be evaluated using the SPLC method to determine the tendency for metals to leach from the samples to groundwater.

11. Closure activities will be conducted in keeping with the Navy's environmental, safety and health programs and in compliance with State of Illinois regulations.

4.0 Closure Performance Standard

The grassy soil and subsurface soil within the 130 x 130 foot area will be sampled using a hollow stem auger and drill rig. The recovered materials will be sampled and analyzed

for the constituents referenced above. The sampling and analysis will be consistent with the Region 5 QAPP regarding Field Duplicate, Field Blanks, and Matrix Spike/Matirix Spike Duplicates. The random sampling described above will be the basis of determining compounds of concern. Evaluation at the Tier 2 level will include a determination of risk factor consistent with the planned site use as a golf course. Figure 2, Closure Sample Locations, is the grid system on the Sludge Pit area where three random samples will be taken for analysis.

The table below indicates the types of compounds of potential concern at the former Sludge Pit area. The types of compounds were selected based on interview information and previous experience at the site.

Types Of Chemical Compounds Included In The Screening Process	**Chemical Occurrence In Excess Of Tier 1 Standards ***	**Reference Dose (noncarcinogens) and Slope Factor (carcinogens) information for Risk-Based Equations**
Volatile Organic Compounds (VOCs)	To Be Determined	To Be Determined
Semi Volatile Organic Compounds (SVOCs)	To Be Determined	To Be Determined
TCLP or SPLP Metals using the TAL (Metals)	To Be Determined	To Be Determined

The former Sludge Pit history does not include filtering or disposal of pesticides or herbicides, therefore, pesticides and herbicides will not be included in the evaluation. Their presence would be attributable to golf course maintenance, and not to Sludge Pit operations.

The Federal Soil Screening Level equations will be used to determine the clean-up objectives, where possible. The proposed Performance Standards for this site will be

obtained from the Illinois EPA Risk-Based Remediation Program for Organic and Inorganic Compounds published in 35 IL Admin. Code Part 742, endorsed by the Federal EPA in 1996. The Remediation Objectives for Industrial/Commercial Properties are expected to apply to this site, however, the exposure scenario will be based on golfers and construction workers, with reference to the closure of the Fort Sheridan golf course. For compounds lacking risk information, a factor including the detection limit will be proposed.

If the compounds "leaching to groundwater" exceed Class 1 groundwater standards, an evaluation of Class 2 groundwater will be considered. The evaluation, if undertaken, would include site stratigraphy, potential yields, and laboratory permeameter analyses.

For non-carcinogenic contaminants the equation will be:

$$\frac{THQ * BW * AT * 365\ d/yr}{1/RfDo * 10\text{-}6\ kg/mg * EF * ED * IR(soil)}$$

For carcinogenic contaminants, the equation used will be:

$$\frac{TR * BW * ATc * 365\ d/yr}{SFo * 10\text{-}6\ kg/mg * EF * ED * IR\ (soil)}$$

The Navy agrees that if compounds are detected at concentrations greater than the ingestion rates proposed above, additional profiling will be necessary to delineate the extent of the compounds in soil. The Navy reserves the right to amend this Closure Plan to reflect appropriate risks for each specific compound.

5.0 Detailed Procedures

A Closure Report will be developed to summarize site activities, analyses, and evaluation of results. The format for the Closure Report will be as follows:

- Objective
- Site Preparation
- Field Soil Sampling Activities
- Analytical Procedures

- Analytical Results and Evaluation
- Summary of Closure Activities
- Appendices
- Photographs
- Laboratory Results
- Boring Logs
- Maps and Figures

6.0 Closure Schedule

The following table presents the schedule for closure activities at the Former FFTU Sludge Pit. Appendix B contains the time line for the pre-work submittals, site work, and the post-work submittals.

Number of Weeks Before Certification of Final Closure	Event
20 Weeks	Notification of IEPA or Regional Administrator of date for beginning final closure.
18 Weeks	Site preparation begins. Survey in site boundaries.
17 Weeks	Site screening / Closure sampling begins. Contractor mobilization for sampling.
15 Weeks	Analytical results from soil tests received.
10 Weeks	Report on Compounds of concern and proposed closure standards is complete. Risk analyses is conducted, and options for Closure, including institutional controls, is proposed to the Navy.
8 Weeks	Final Closure documents prepared, signed and sealed, for the Navy to submit to the IEPA.
0 Weeks	IEPA will approve closure.

7.0 Closure Sampling Plan

This sampling plan describes the procedures to be followed for soil sampling for closure. The objectives of this plan are to:

- Describe the sampling methods,
- Describe the sample collection, numbering system, storage, and shipment procedures,
- Describe the soil sampling procedures, and
- Outline procedures for documentation of sampling.

7.1 Sample Numbering System

A sample numbering system will be used to identify each sample. This numbering system will provide a tracking procedure to allow retrieval of information about a particular sample and assure that each sample is uniquely numbered.

Soil samples will be numbered to match the sample locations. The depth from which the sample is collected will be noted as part of the sample number (i. e., Sample Boring 1-12 for a sample at location #1 at a depth of 12 inches).

7.2 Sampling Methods

Samples will be collected from the locations shown on Figure 2. Samples will be collected from 12 inches, 36 inches, 48 inches, 60 inches and at native soil contact below the surface at each location. Samples will be chosen randomly from three of the nine grid locations.

Soil test borings will be drilled using a 4.25 inch inside diameter hollow stem auger. Subsurface soil samples will be collected as part of the standard penetration tests (ASTM D 1586-84) to be conducted at each sampling point. A stainless steel, 2-inch diameter, split barrel (split spoon) sampler will be used for sample collection. Samples for analysis will be obtained from the boring by taking a grab sample from the split spoon, placing it in appropriately labeled containers, and sending it to an approved laboratory for analysis.

Sample bottles will carry labels with the identification number, sample depth, and sampling date/time.

7.3 Analytical Testing Methods

A grab sample will be obtained for each specified location and sample depth and analyzed for the specified compounds. Analysis of each sample will be performed by a qualified laboratory. The laboratory will be required to analyze using matrix spikes, and matrix spike duplicates on 10% of all soil samples. Sample preparation will be by appropriate Methods. Appendix C contains the TCLs and TAL.

COMPOUND	METHOD	DETECTION LIMIT (ug/kg)*
VOCs TCL	8260	consistent with method specified
SVOCs TCL	8270	consistent with method specified
Metals: TAL, plus cyanide	various	consistent with method specified

* Detection limits should be based on a 100% dry weight and a 5 g. sample size.

7.4 QA/QC Sampling

To check the quality of analytical data from field sampling efforts, duplicate/split and blank samples will be collected for analysis. The duplicate/split and blanks will be treated as separate samples for identification, logging and shipping. Analytical results on the blanks and duplicates will be maintained with the other appropriate field sampling data.

7.5 Travel Blank Sample Analysis

Travel blank samples will be used to check for container contamination or contamination from exposure to airborne or ambient contaminants during travel. Travel blanks will be VOA vials filled with organic-free water at the laboratory and shipped with the empty containers to the project site. They will remain unopened during all activities. A travel blank will accompany the VOAs into the field, through the sampling effort, and return in the shipment to the lab. One travel blank would accompany each group of samples for volatile organic constituents in the shipping container.

7.6 Duplicate/Split Sample Analysis

Duplicate/split samples will be used to evaluate the precision of both the collection and analytical procedures. For grab soil samples, duplicate/split sampling is defined as the collection by the same technique of two separate samples immediately adjacent to each other. One duplicate/split per ten samples will be collected. Duplicate/split samples will be submitted to the laboratory for analysis in the same manner as samples.

7.7 Field Blanks

Field blanks would be prepared with sample rinsate to determine if the decontamination procedures are effective in cleaning the equipment used to sample soil. The sampling equipment will be cleaned by the decontamination procedures specified.

Sampler/rinsate will be collected from a piece of equipment (e.g., split spoon) that has been used for several sampling efforts. The equipment would be rinsed after decontamination and prior to sampling. The procedure involves thoroughly rinsing with deionized water both externally and internally all surface areas of the equipment that would come into contact with the sample. The rinsate will be collected in a clean container and poured into the appropriate sample containers that are labeled and preserved, shipped, and analyzed in accordance with established procedures. One field blank for every ten samples will be prepared on all pieces of equipment that comes in contact with samples during collection.

7.8 Sample Preparation, Preservation, Storage, and Shipping

All bottles will have Teflon-lined lids and will be provided by the laboratory. As each sample is collected in the field, it will be placed in labeled bottles and stored in an iced cooler. Sample preparation will include hand tightening the lids, sealing the bottles with tape, properly labeling and storing them in bags on ice in a sample cooler. The cooler will then be filled with packing material and the samples will be shipped to a laboratory for analysis. Chain-of-custody documents will be prepared for all samples collected and will accompany the samples in the coolers. Additional specific requirements of the laboratory for packing and shipping, if any, will be followed.

While awaiting shipping, samples will be stored in ice in coolers. All samples will be appropriately preserved on the day that they are collected. If samples cannot be shipped

on the same day as collected, they will be packaged the following day so that the samples are shipped with a full container, including ice.

After samples have been packaged for shipping, custody will be transferred to a courier. Upon shipment, the laboratory will be notified that the sample shipment is on its way. Advance notice will be provided to the laboratory regarding the schedule for shipping and analysis.

7.9 Decontamination Procedures

All drilling equipment including the auger, drill bits and drill rods will be steam cleaned between borings at an established decontamination pad at the site. All drilling equipment including drilling rigs will be steam cleaned prior to arriving at and before departing from the project site. All water used in the decontamination of equipment will be collected for off-site disposal.

To prevent cross contamination between samples taken for chemical analysis, tools, sampling devices, instrument, etc. will be thoroughly decontaminated between each use. The general decontamination procedures to be observed are as follows:

- Wash with an industrial detergent (e.g., TSP or Alconox) and water using brushes to remove any gross contaminants;
- Rinse with clear water by dripping and/or spray bottle;
- Rinse with nanograde methanol by spray bottle;
- Double rinse with deionized water by spray bottle.

Power spraying may be substituted for spray bottle rinsing.

7.10 Documentation

Project sampling activities will be documented by keeping a written record of daily activities and implementing a series of interrelated chain-of-custody procedures. This should assure the integrity of the sample and laboratory data by tracking and documenting samples from the time they are collected through the analytical and reporting process.

7.11 Sample Custody Procedure

Chain-of-Custody procedures are intended to document sample possession from the time

of collection to disposal, in accordance with federal guidelines. For the purpose of these procedures, a sample is considered in custody if it is

- In one's actual possession;
- In view, after being in physical possession;
- Locked so that no one can tamper with it, after having been in physical possession;
- In a secured area, restricted to authorized personnel.

The following procedures will be followed for all samples:

- Sample containers will be custody sealed in the field. Any samples that do not arrive at the laboratory with custody seals intact will not be considered to have been in valid custody.
- A chain-of-custody record will be initiated in the field for each sample. A copy of this record will accompany its sample.
- Each time responsibility for custody of the sample changes, the new custodian will sign the record and record the date.
- Upon sample destruction or disposal, the custodian responsible for the sample will complete the chain-of-custody record, file a copy, and send a copy to the Navy Project Manager for record keeping.
- The custody of individual sample containers will be documented by recording each container identification on an approved chain-of-custody form.
- Analysis for each sample will be recorded on the chain-of-custody form.

The following records will supplement the chain-of-custody forms:

- Daily activity log;
- Sample label on each sample;
- Filed collection report;
- Photographic records where deemed appropriate;
- Acknowledgment by all sampling personnel of the chain-of-custody procedures.

7.12 Sample Collection Logs

Sample collection logs will be completed in the field for each sample acquired. The

information to be recorded will include sample number, sampling location, sampling date and time, sampler's name, preservation method used, sample type, sampling method description, and results of any field tests performed on the sample.

7.13 Sample Labels

Sample labels will contain sufficient information to uniquely identify the sample in the absence of other identification. This will include unique sample number, sample location and depth, sample date and time, sampler's name, and preservation method used. The sample label will be directly affixed to the sample container and will be completed using indelible ink.

Appendix A

Figures

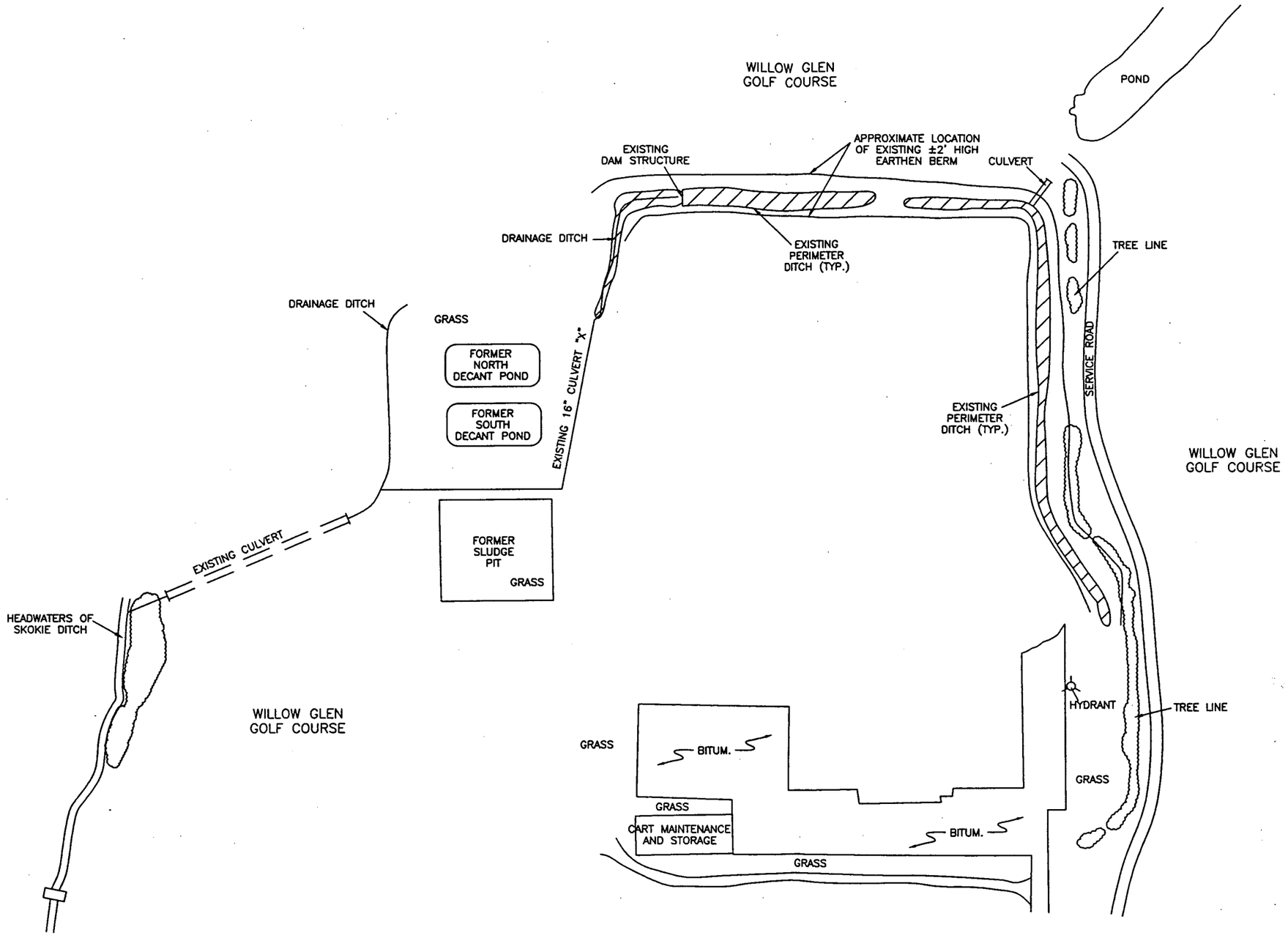
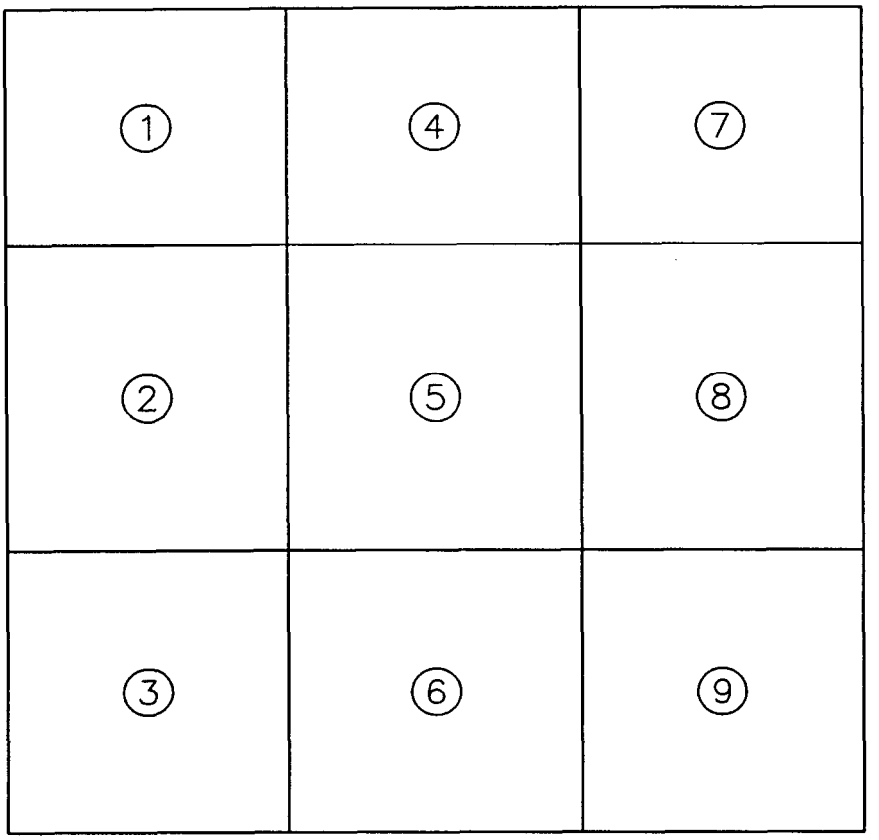


FIGURE 1

SITE MAP

FORMER FFTU SLUDGE PIT
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

DESIGNED:	CHECKED:
DRAWN: M. CIESLEWSKI	APPROVED: RLO
DATE: 07 JULY 99	SCALE:
JOB NO.: 38049.01	
SHEET NUMBER 1 of 2	IOTEST, INC.



APPROXIMATE
SCALE – FEET

0 50 100

FIGURE 2

CLOSURE SAMPLE LOCATIONS

FORMER FFTU SLUDGE PIT
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

DESIGNED	CHECKED
DRAWN M. CIESLEWSKI	APPROVED RCS
DATE: 17 JUN 99	SCALE: AS NOTED
JOB NO.: 38049.01	
SHEET NUMBER 2 of 2	TOLTEST, INC.

Appendix B

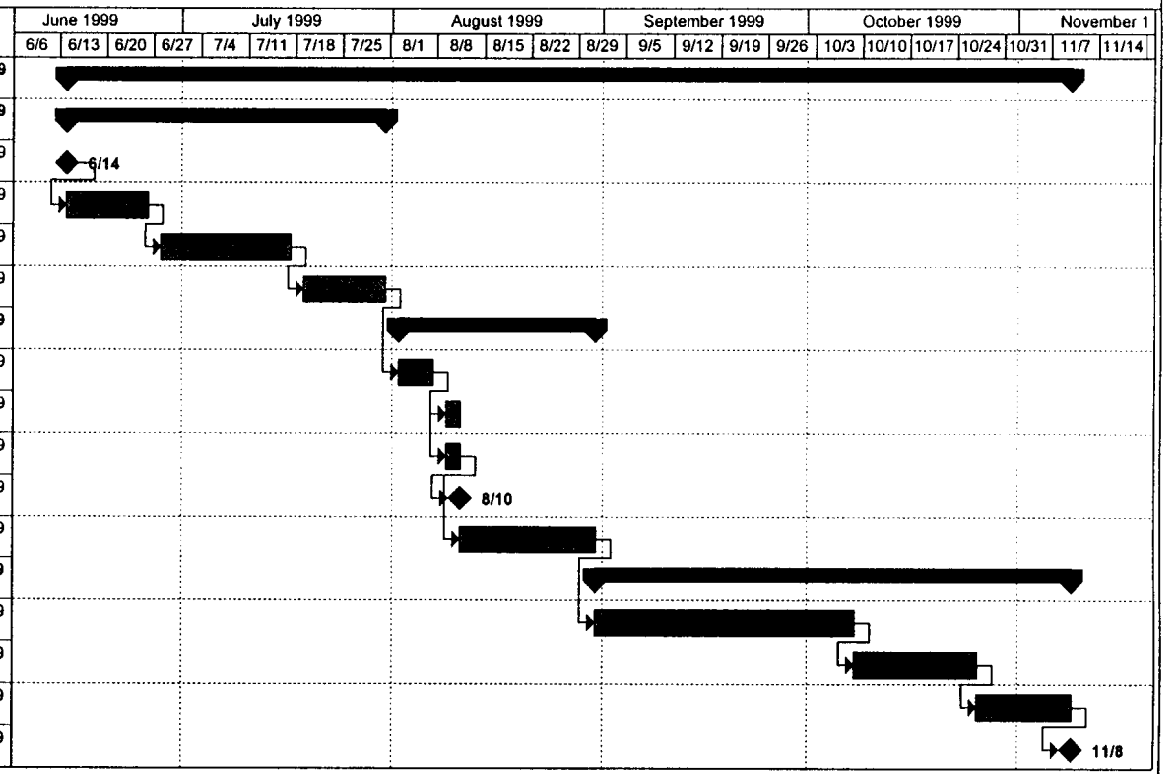
Timeline

Contract No. N68950-96-D-0052

TIME LINE
Sampling and Closure
Former FFTU Sludge Pit, GLNTC, Illinois

Delivery Order No. 0055

ID	Task Name	Duration	Start	Finish
1	**FFTU Closure Activities**	**106 days**	**6/14/99**	**11/8/99**
2	**Pre-Work Submittals**	**35 days**	**6/14/99**	**7/30/99**
3	Draft Plan of Operations	0 days	6/14/99	6/14/99
4	Navy review & comments	10 days	6/14/99	6/25/99
5	Final Plan of Operations	15 days	6/28/99	7/16/99
6	Navy review & approval	10 days	7/19/99	7/30/99
7	**Site Work**	**21 days**	**8/2/99**	**8/30/99**
8	Mobilization	5 days	8/2/99	8/6/99
9	Drilling activities	2 days	8/9/99	8/10/99
10	Soil sampling	2 days	8/9/99	8/10/99
11	Demobilization	0 days	8/10/99	8/10/99
12	Analytical results	14 days	8/11/99	8/30/99
13	**Post Work Submittals**	**50 days**	**8/31/99**	**11/8/99**
14	Draft Closure Report/Risk Analysis	28 days	8/31/99	10/7/99
15	Navy review & comments	12 days	10/8/99	10/25/99
16	Final Closure Report	10 days	10/26/99	11/8/99
17	Navy approval	0 days	11/8/99	11/8/99



Project: FFTU Sludge Pit
Date: 7/8/99

Task Milestone Summary

June 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
	Draft Plan of Operations		Navy review & comments, 10 days			
20	21	22	23	24	25	26
		Navy review & comments, 10 days				
27	28	29	30			
			Final Plan of Operations, 15 days			

July 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
				Final Plan of Operations, 15 days		
4	5	6	7	8	9	10
				Final Plan of Operations, 15 days		
11	12	13	14	15	16	17
				Final Plan of Operations, 15 days		
18	19	20	21	22	23	24
				Navy review & approval, 10 days		
25	26	27	28	29	30	31
				Navy review & approval, 10 days		

August 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
			Mobilization, 5 days			
8	9	10	11	12	13	14
	Drilling activities, 2 days			Analytical results, 14 days		
	Soil sampl	Demobilization				
15	16	17	18	19	20	21
			Analytical results, 14 days			
22	23	24	25	26	27	28
			Analytical results, 14 days			
29	30	31				
Analytical results, 14 days						
		Draft Closure Report/Risk Analysis, 28 days				

September 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			Draft Closure Report/Risk Analysis, 28 days			
5	6	7	8	9	10	11
			Draft Closure Report/Risk Analysis, 28 days			
12	13	14	15	16	17	18
			Draft Closure Report/Risk Analysis, 28 days			
19	20	21	22	23	24	25
			Draft Closure Report/Risk Analysis, 28 days			
26	27	28	29	30		
			Draft Closure Report/Risk Analysis, 28 days			

October 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
Draft Closure Report/Risk Analysis, 28 days						
3	4	5	6	7	8	9
Draft Closure Report/Risk Analysis, 28 days					Navy review & comments, 12 days	
10	11	12	13	14	15	16
Navy review & comments, 12 days						
17	18	19	20	21	22	23
Navy review & comments, 12 days						
24	25	26	27	28	29	30
Navy review & comments, 12 days				Final Closure Report, 10 days		
31						
Final Closure Report, 10 days						

November 1999

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
			Final Closure Report, 10 days			
7	8	9	10	11	12	13
Final Closure Report, 10 days	Navy approval					
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Appendix C

TCLs and TAL

Table 1
Volatile Organics by GC/MS
Target Compound List and Detection Limits

METHOD No.:	8260
UNITS:	mg/kg
Acetone	0.050
Acrolein	0.050
Acrylonitrile	0.050
Benzene	0.005
2-Butanone (MEK)	0.050
Bromochloromethane	0.005
Bromodichloromethane	0.005
Bromoform	0.005
Bromomethane	0.005
Carbon disulfide	0.050
Carbon tetrachloride	0.005
Chlorobenzene	0.005
Chloroethane	0.005
2-Chloroethylvinyl ether	0.050
Chloroform	0.005
Chloromethane	0.005
Dibromochloromethane	0.005
1,2-Dibromo-3-chloropropane	0.005
1,2-Dibromoethane	0.005
Dibromomethane	0.005
1,2-Dichlorobenzene	0.005
1,3-Dichlorobenzene	0.005
1,4-Dichlorobenzene	0.005
trans-1,4-Dichloro-2-butene	0.005
Dichlorodifluoromethane	0.005

Table 1 (Continued)
Volatile Organics by GC/MS
Target Compound List and Detection Limits

METHOD No.:	8260
UNITS:	mg/kg
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.005
trans-1,2-Dichloroethylene	0.005
1,2-Dichloropropane	0.005
cis-1,3-Dichloropropylene	0.005
trans-1,3-Dichloropropylene	0.005
Ethylbenzene	0.005
2-Hexanone	0.050
Iodomethane	0.050
Methylene chloride	0.005
4-Methyl-2-pentanone (MIBK)	0.050
Styrene	0.005
1,1,1,2-Tetrachloroethane	0.005
1,1,2,2-Tetrachloroethane	0.005
Tetrachloroethylene	0.005
Toluene	0.005
1,1,1-Trichloroethane	0.005
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Trichlorofluoromethane	0.005
1,2,3-Trichloropropane	0.005
Vinyl acetate	0.050
Vinyl chloride	0.005
Total Xylenes	0.005

Table 2
Semi-Volatile Organics by GC/MS
Target Compound List and Detection Limits

METHOD No.:	8270
UNITS:	mg/kg
Acenaphthene	0.330
Acenaphthylene	0.330
Anthracene	0.330
Benzidine	0.330
Benzyl alcohol	0.330
Benzo(a)anthracene	0.330
Benzo(b)fluoranthene	0.330
Benzo(k)fluoranthene	0.330
Benzo(g,h,i)perylene	0.330
Benzo(a)pyrene	0.330
Butyl benzyl phthalate	0.330
Bis(2-chloroethoxy)methane	0.330
Bis(2-chloroethyl)ether	0.330
Bis(2-chloroisopropyl)ether	0.330
Bis(2-ethylhexyl)phthalate	0.330
4-Bromophenyl phenyl ether	0.330
4-Chloroaniline	0.330
2-Chloronaphthalene	0.330
2-Chlorophenol	0.330
4-Chlorophenyl phenyl ether	0.330
Chrysene	0.330
Dibenzo(a,h)anthracene	0.330
Dibenzofuran	0.330

Table 2 (Continued)
Semi-Volatile Organics by GC/MS
Target Compound List and Detection Limits

METHOD No.:	8270
UNITS:	mg/kg
Di-n-butyl phthalate	0.330
2,4-Dichlorophenol	0.330
3,3-Dichlorobenzidine	0.330
2,4-Dimethylphenol	0.330
2,4-Dinitrophenol	1.65
2,4-Dinitrotoluene	0.330
2,6-Dinitrotoluene	0.330
Di-n-octyl phthalate	0.330
Fluoranthene	0.330
Fluorene	0.330
Hexachlorobenzene	0.330
Hexachlorobutadiene	0.330
Hexachlorocyclopentadiene	0.660
Hexachloroethane	0.330
Indeno(1,2,3-cd)pyrene	0.330
Isophorone	0.330
4-Chloro-3-methylphenol	0.330
4,6-Dinitro-2-methylphenol	1.65
2-Methylphenol	0.330
* 4-Methylphenol	0.330
Naphthalene	0.330
2-Nitroaniline	0.330
3-Nitroaniline	0.330

Table 2, continued
Semi-Volatile Organics by GC/MS
Target Compound List and Detection Limits

METHOD No.:	8270
UNITS:	mg/kg
4-Nitroaniline	0.330
Nitrobenzene	0.330
2-Nitrophenol	0.330
4-Nitrophenol	1.65
N-Nitrosodiphenylamine	0.660
Pentachlorophenol	1.65
Phenol	0.330
Pronamide	0.330
Pyrene	0.330
Pyridine	0.330
1,2,4,5-Tetrachlorobenzene	0.330
2,3,4,6-Tetrachlorophenol	0.330
1,2,4-Trichlorobenzene	0.330
2,4,5-Trichlorophenol	0.330
2,4,6-Trichlorophenol	0.330

Table 3
Inorganics
Target Analyte List and Detection Limits

ANALYTE:	METHOD No.:	UNITS (mg/kg)
Aluminum	6010	5.00
Antimony	7041/6010	5.00
Arsenic	7060/6010	5.00
Barium	6010	5.00
Berylium	6010	1.00
Cadmium	7131/6010	1.00
Calcium	6010	25.0
Chromium	6010	1.00
Cobalt	6010	1.00
Copper	6010	1.00
Cyanide	9010	1.00
Iron	6010	5.00
Lead	7421	0.60
Magnesium	6010	25.0
Manganese	6010	1.00
Mercury	7470	0.05
Nickel	6010	1.00
Potasium	6010	25.0
Selenium	7740/6010	1.00
Silver	6010	1.00
Sodium	6010	25.0
Thallium	7841/6010	5.00
Vanadium	6010	1.00
Zinc	6010	1.00