02.08-10/01/96-01738

Contractor's Closeout Report

Underground Storage Tank Removals at Building 25 MCB Camp Lejeune Jacksonville, North Carolina

Contract No. N62470-93-D-3032
Delivery Order 0078

Volume I of IV

Submitted to

Department of the Navy
Atlantic Division
Naval Facilities Engineering Command
Norfolk, VA

Submitted by

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

5335 Triangle Parkway, Suite 450
Norcross, GA 30092

October 1996

OHM Project No. 17418

02.08- 10/01/96-01738

CONTRACTOR'S CLOSEOUT REPORT

UNDERGROUND STORAGE TANK REMOVALS
AT BUILDING 25
MCB CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA

Contract No. N62470-93-D-3032
Delivery Order 0078

Prepared for:

Department of the Navy
Atlantic Division
Naval Facilities Engineering Command
Norfolk, VA

Prepared by

OHM Remediation Services Corp.
5335 Triangle Parkway, Suite 450
Norcross, GA 30092

James A. Dunn, Jr., P.E.
Senior Project Manager

John P. Franz, P.E.
Program Manager

OHM Project No. 17418

October 1996

TABLE OF CONTENTS

TABLE OF CONTENTS

EXECUTIVE SUMMARY

From September 1995 to March 1996, OHM Remediation Services Corp. (OHM) performed removal and disposal of five 750-gallon underground storage tanks (USTs), contents, and associated contaminated soils adjacent to Building 25 at Marine Corps Base Camp Lejeune, North Carolina. OHM's project activities involved excavation, sampling, backfill, and transportation and disposal of waste residuals and debris. Approximately 140 tons of solvent contaminated soils, 3,180 gallons of contaminated liquid removed from the USTs, and 4.1 tons of scrap metal were shipped off-site for disposal. Except for tetrachloroethylene contaminated soil beneath Building 25 and on the east side of the UST pit, confirmation sampling performed upon completion of excavation activities revealed that soils remaining on-site exhibited concentrations of constituents of concern below the action levels for soil remediation identified in the Specifications dated February 1995. Removal of the contaminated soils under the active dry cleaning facility (Building 25) was not performed due to accessibility and potential damage to the building foundation. Site restoration included placement of clean backfill from the Base borrow area and re-vegetation.

1.0 INTRODUCTION

This Contractor's Closeout Report summarizes action taken during the removal and disposal of five underground storage tanks (USTs) and contaminated soil at Building No. 25, Site 88 (MWR Dry Cleaners), at Marine Corps Base (MCB) Camp Lejeune, North Carolina. This closure report has been prepared for the Department of the Navy, Naval Facilities Engineering Command (NAVFAC), Atlantic Division (LANTDIV) under Multi-Contaminant Remedial Action Contract (RAC), Contract Number N62470-93-D-3032 by OHM Remediation Services Corp. (OHM). This closure report was developed in accordance with Section 8.0 of OHM's Work Plan dated August 1995 and NAVFAC Specifications Section No. 01010 "General Paragraphs", dated February 1995. OHM has completed all activities as required Delivery Order No. 0078: Underground Storage Tank Removals at Building 25, Marine Camp Lejeune, North Carolina, in accordance with OHM's Work Plan dated August 1995 and NAVFAC Specifications Section No. 01010 - "General Paragraphs," dated February 1995.

This report is intended to satisfy the State of North Carolina, Department of Environment, Health, and Natural Resources, Division of Environmental Management (DEM) requirement that the removal of these tanks be documented. Subsequent to preparation of OHM's Work Plan dated August 1995, it was determined by Base personnel that the contractor (OHM) would not be required to include documentation for UST closure per North Carolina 15ANCAC 2N in this closeout report. MCB Camp Lejeune personnel will provide any additional notifications and information as required by regulatory agencies.

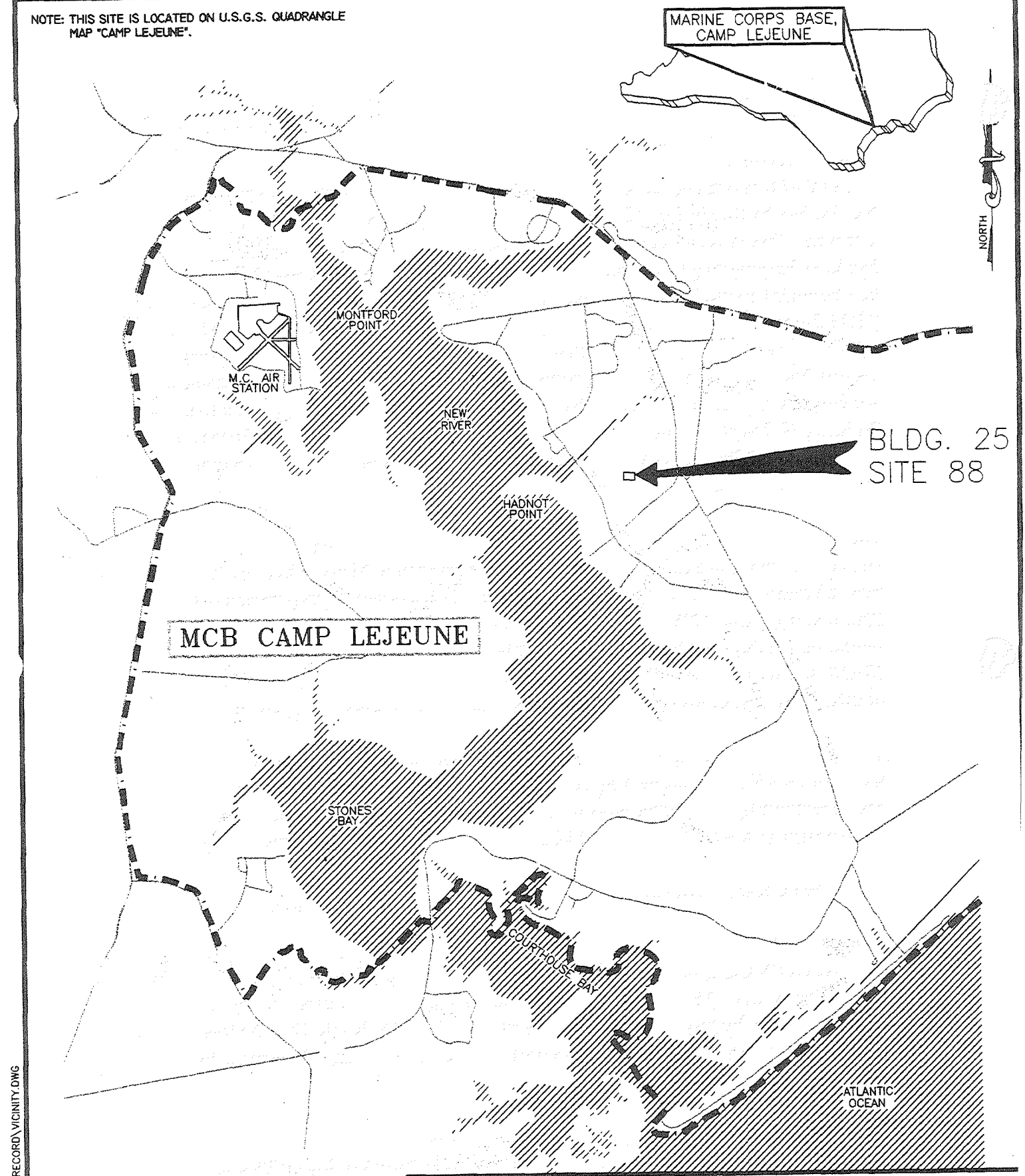
The contaminated soil generated during the excavation and removal of the USTs was transported off-site to an EPA approved disposal facility. Further groundwater assessment and/or remediation is required and is presently being addressed by the Department of the Navy. It is not included in this Contractor's Closeout Report.

1.1 SITE BACKGROUND

MCB Camp Lejeune is a training base for the U.S. Marine Corps, located in Onslow County, North Carolina. The Base covers approximately 170 square miles and includes 14 miles of coast line. MCB Camp Lejeune is bounded to the southeast by the Atlantic Ocean, to the northeast by State Route 24, and to the west by U.S. Route 17. The town of Jacksonville, North Carolina is located north of the Base. Refer to Figure 1.1 for location of this site at MCB Camp Lejeune.

Up to nine USTs were reportedly installed in the 1940s and have been used in conjunction with dry cleaning operations. Varsol was reportedly stored in the tanks from the 1940s

NOTE: THIS SITE IS LOCATED ON U.S.G.S. QUADRANGLE MAP "CAMP LEJEUNE".



VICINITY MAP

2 0 1 2

1 INCH = 2 MILES

OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. COLLINS	6/23/96
CHECKED BY	B. MATTHEWS	6/23/96
FILE:		
REV. 0	SHEET # –	PROJECT NO. 17418

FIGURE 1.1

VICINITY AND SITE LOCATION

D.O. #78

MCB CAMP LEJEUNE

PREPARED FOR

LANTDIV

\OHM\LANTDIV\LEJEUN\18\RECORD\VICINITY.DWG

until the 1970s when the dry cleaners switched to perchloroethylene, which was used until the late 1980s when the tanks were taken out-of-service. Currently, the active facility is using perchloroethylene in its cleaning process; however, the solvent is contained in above ground tanks and within the confines of Building 25.

1.2 SITE DESCRIPTION

Building 25 is within a highly visible and densely populated area of MCB Camp Lejeune. Barracks, office buildings, and other occupied structures are adjacent to Building 25 in each direction. Aboveground and underground utilities are present in the immediate vicinity of the USTs. A site plan showing the former location of the USTs, utilities, and adjacent structures is presented as Figure 1.2.

The surface topography at the site is generally flat with surface water runoff flowing toward a drainage inlet located adjacent to and north of the corner of Building 25. The site soils consist primarily of fine to medium-grade sands 15 to 30 feet deep underlain by oolitic, fossiliferous limestone (6 to 20 feet deep), which is underlain by a unit of silty sand.

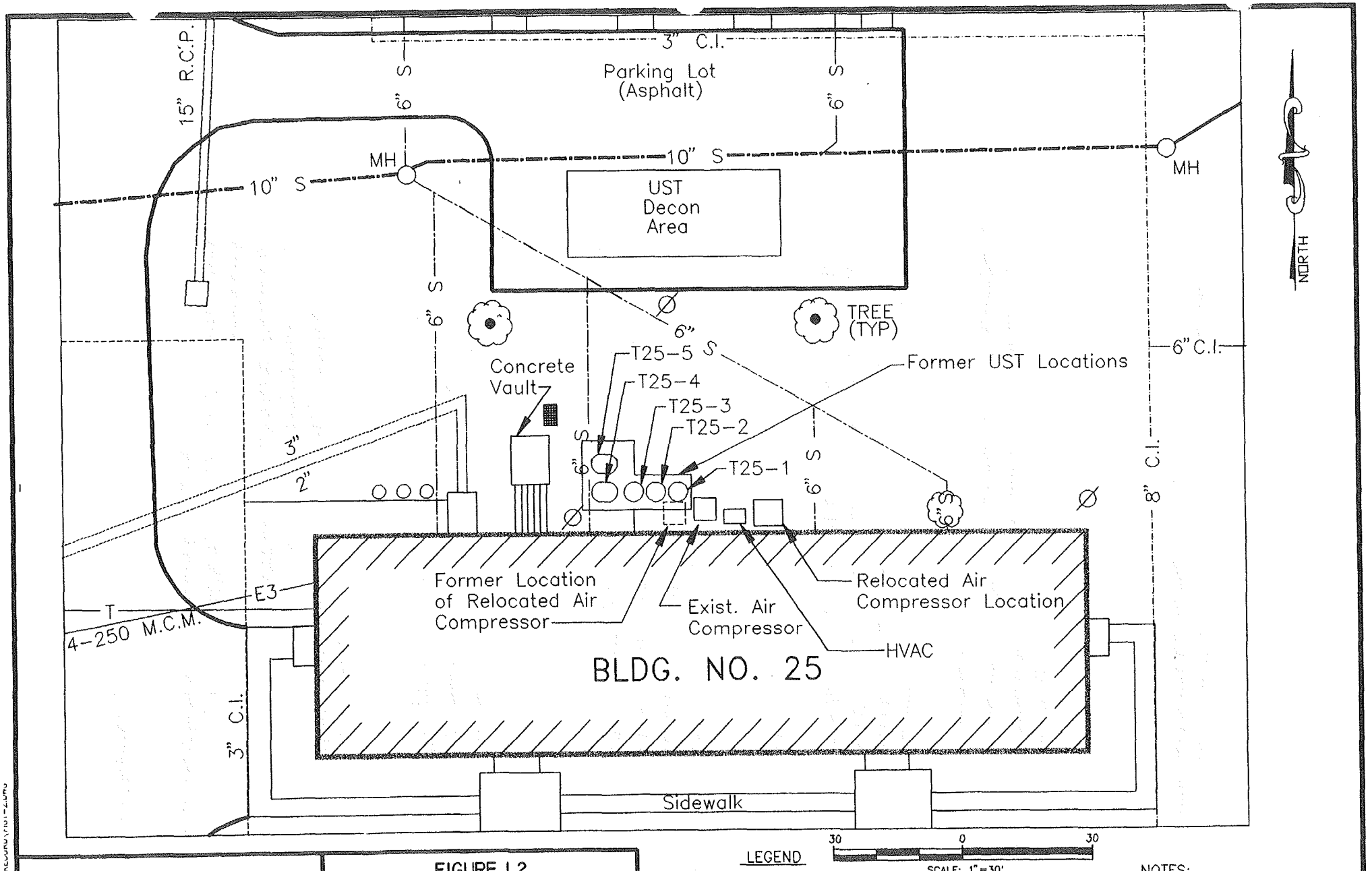
1.3 SUMMARY OF REMEDIAL INVESTIGATION

The abandoned tanks at Building 25 were identified in 1994 during the 1994 Base-wide UST program. On November 29, 1994, Omega Environmental sampled the contents of the USTs. The test results indicated that the tanks contained hazardous liquids. On December 12, 1994, Omega Environmental collected one composite sample of soil above the USTs. The soil test results indicated that solvents above regulatory limits were present in this sample.

1.4 SITE SOIL REMEDIATION GOALS

The objective of the remedial action at Building 25 was to locate and remove any USTs, excavate soils in the area that exceeded the clean-up goals, and dispose of soils and USTs off-site. Under this approach, potential risks due to contaminated soil exposure were reduced.

The remediation goals for Building No. 25 USTs were provided in Section 01010 of the project specifications dated February 1995, prepared by LANTDIV. In addition, remediation levels based upon EPA published soil screening levels for transfer of contaminants from soil to groundwater were also considered. Removal of soil with contaminant concentrations above these EPA Soil Screening Levels is desirable since the potential for leaching of contaminants from the soil into the groundwater is greatly reduced. Table 1.1 presents both of these contaminant levels.



LEGEND

- MH — MANHOLE
- DRAINAGE INLET
- 6" S — SEWERLINE
- Ø — POWER POLE
- CAST IRON PIPE

NOTES:

1. BASE MAP AND UTILITIES ARE BASED ON DRAWING PROVIDED BY LANTDIV AND ON THE SITE WALK CONDUCTED BY OHM.
2. LOCATION OF USTs NO. T25-1 THRU T25-5 IS APPROXIMATE.
3. REFER TO FIGURE 6.1 FOR L IONS OF TEMPORARY MONITORING WELL.

OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. LANGE	6/23/95
CHECKED BY	–	DATE
APPROVED BY	–	DATE
REV.	SHEET #	CT 17418

FIGURE 1.2

SITE PLAN

D.O. #78
MCB CAMP LEJEUNE

PREPARED FOR

LANTDIV

Table 1.1 Remediation Goals for Building 25 Contaminated Soils		
Contaminant of Concern	*Action Levels for Soil Removal ($\mu g/kg$)*	*EPA Soil Screening Levels for Transfer of Contaminants from Soil to Groundwater ($\mu g/kg$)*
Tetrachloroethylene	12,000	40
Trichloroethene	47,000	20
Benzene	22,000	20
Toluene	1,600	5,000
Xylenes	16,000	74,000
DCE-trans	40	300
Heptachlor	40	60
Dieldrin	40	1
DDD	2,700	700
DDT	1,900	1,000
Chlordane	470	2,000
CCL4	4,900	30
DCE-cis	78,000	200

2.0 SUMMARY OF UST REMOVAL ACTION

Upon receipt of the Notice-to-Proceed from LANTDIV in May 1995, OHM commenced preparatory activities for the project such as plan preparation and review for all site activities. The work was categorized into definable phases for economical and efficient execution of the work. Listed below are the seven major phases of the site work that were performed from September 1995 to March 1996 to fulfill the project specifications:

- Phase 1 – utility location, location of the USTs, sampling of soils adjacent to the USTs, sampling of the contents of the USTs, and analysis of the UST contents and adjacent soil samples to characterize these materials for disposal.

- Phase 2 – installation and sampling of four temporary groundwater monitoring wells.

- Phase 3 – relocation of the Building 25 air compressor and air compressor shed.

- Phase 4 – excavation of contaminated soils, removal of the USTs, cleaning of the USTs, disposal of contaminated soils, disposal of the USTs contents, disposal of the USTs, and disposal of liquids generated during UST decontamination.

- Phase 5 – confirmation sampling of the side walls and bottom of the tank excavation pit and the analyses of these samples.

- Phase 6 – backfilling the excavation and seeding with grass.

- Phase 7 – demobilization of all equipment and personnel from the site.

The following sections provide more detail on specific events that were performed to support the major site work efforts.

2.1 SUBMITTALS

In July 1995, OHM submitted draft plans for Delivery Order No. 78. The plans consisted of a Work Plan; Materials Handling, Transportation, and Disposal Plan; Sampling and Analysis Plan; and Site-Specific Health and Safety Plan. The plans provided a description of the project objectives, schedule, sampling, analysis, decontamination, site work, excavation, construction, storage, transportation, and disposal requirements that would be implemented to fulfill the requirements of the project specifications. The plans were

reviewed by LANTDIV and returned approved in August 1995. On January 6, 1996 OHM issued revisions to these plans reflecting the results of OHM's initial investigation.

2.2 UST LOCATION AND SAMPLING

A pre-construction meeting was held on September 18, 1995, at MCB Camp Lejeune. OHM then mobilized to the site to commence Phase 1 work activities. Activities included the delivery of equipment and personnel to the project site, and implementation of all necessary measures for site drainage, siltation, and erosion control. All excavations were diked and diversion ditches constructed to minimize contaminant migration from the site.

On September 20, 1995, OHM performed an intrusive investigation on the north side of Building 25 to locate any remaining USTs. All vent and fill pipes adjacent to Building 25 were traced to USTs. Five tanks were located at this site. To provide access for sampling, soil was removed from the area above the top of the tanks using a backhoe. Samples of the liquids in the USTs were collected. Soil samples were collected adjacent to each of the USTs. Analyses were performed to determine the nature of each media. Results of the soil and liquid analyses were submitted to various disposal facilities to develop waste profiles and to obtain disposal pre-approval and pricing. The completed waste profiles for the selected facilities were submitted to the Base for final approval.

The levels of contamination detected in the soils were substantially lower than originally anticipated. As a result, methods of disposal other than incineration were evaluated. Chemical oxidation followed by stabilization was chosen as the preferred method and submitted to the regulators for concurrence. This revision to the disposal method resulted in a soil disposal cost savings up to $750 per ton.

2.3 TEMPORARY WELL INSTALLATION AND SAMPLING

As an additional work scope item, OHM was tasked to investigate the surficial aquifer and determine if contaminants were present. On November 12, 1995, OHM's subcontractor, Baker Environmental, Inc. (Baker), installed four temporary 1-inch diameter PVC monitoring wells. The location of the temporary monitoring wells is shown on Figure 6.1. Well construction details of the well installed using hand augers are provided in the field notes included in Appendix J. A soil sample was collected from between approximately 3 to 8 feet below land surface (bls) during each well installation using a Geoprobe sampler. Each monitoring well was purged and sampled by Baker. The samples were then transported by Baker to OHM who routed them to the OHM Analytical Division in Findlay, Ohio for analyses. A summary of the soil and groundwater data for these samples is included in Appendix I and the Analytical Data is included in Appendix H. The analytical results are discussed in Section 6.3 of this report.

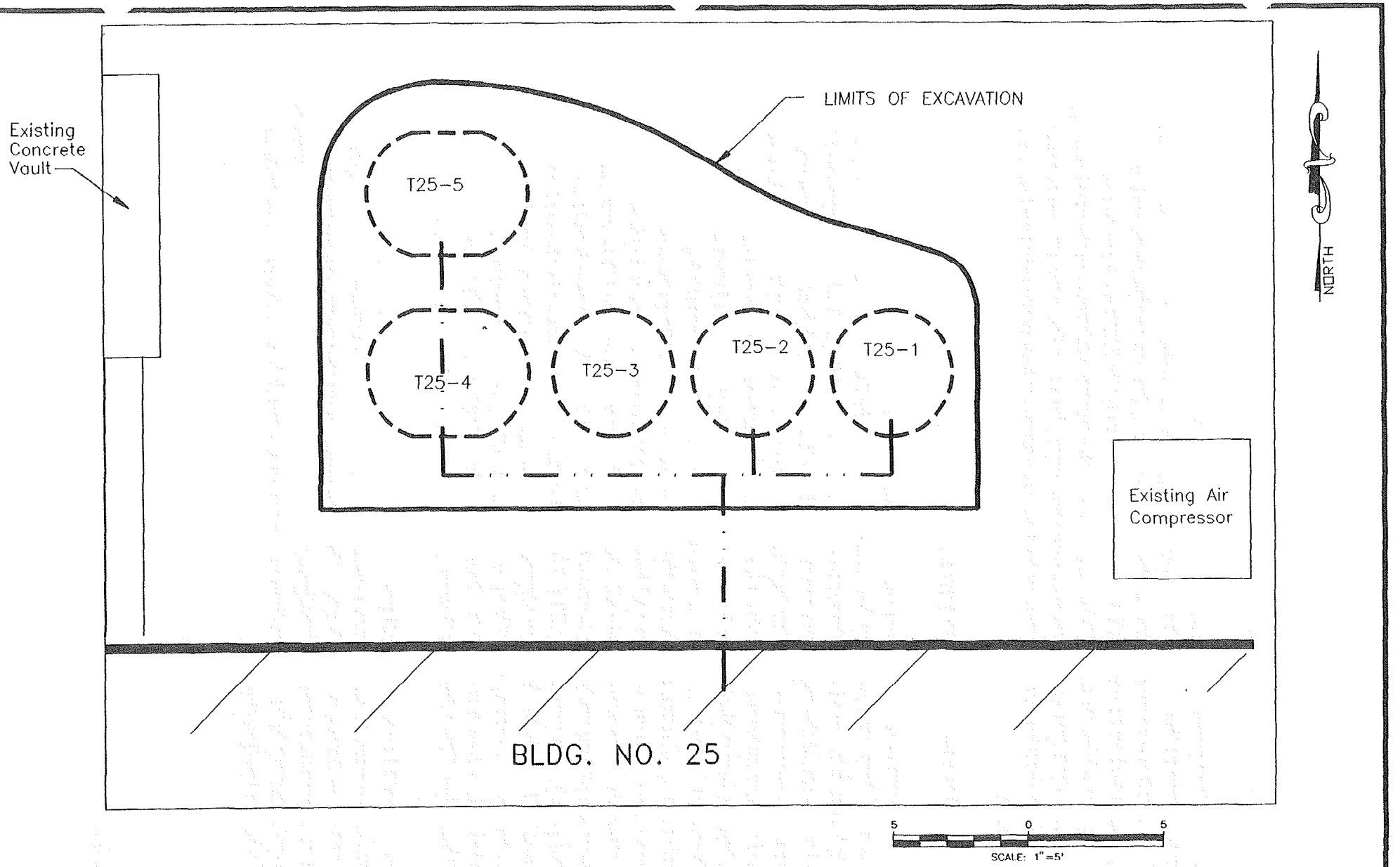
2.4 RELOCATION OF THE AIR COMPRESSOR SHED

Due to the close proximity of UST Nos. 25-1 and 25-2 to the adjacent air compressor shed, it was determined that excavation could damage the foundation of the air compressor. As a revised work scope item, prior to start of excavation, the air compressor and air compressor shed were relocated 40-feet to the east. Refer to Figure 1.2 for the previous and final locations of the air compressor shed. First, the electric utilities, mechanical piping, and a new 6-inch by 8-feet by 10-feet concrete slab were placed at the new air compressor location. The existing air compressor and air compressor shed were relocated to the new concrete slab.

2.5 EXCAVATION OF THE USTS AND CONTAMINATED SOIL

To minimize the potential impact on the Building 25 strip spread footing (approximately 1 foot 6 inches deep by 1 foot 9 inches wide) located 10 feet from the center line of the tanks, each tank was excavated from the side away from the building. Soil was excavated 2 feet around the sides of the tanks, the contents of the USTs were emptied using a vacuum truck, and the tanks were removed. The liquids were transported by the vacuum truck to the disposal facility operated by Clean Harbors of Baltimore in Baltimore, Maryland. Following the removal of the tank liquid contents, the tank was rendered inert in accordance with Standard Operating Procedures outline in the Health and Safety Plan. This was accomplished by placing dry ice into the tank, and then monitoring the tank atmosphere until less than 8 percent oxygen and less than 10 percent of the Lower Explosion Limit (LEL) concentrations were obtained. All piping associated with the USTs was removed, except for the piping under the foundation of Building 25. Concrete tank hold down blocks were not present on these five USTs. Groundwater was not present in the UST pit following UST removal. Refer to Figure 2.1 for the limits of excavation. The five 750-gallon USTs were approximately 6 feet long by 4.5 feet in diameter and were buried approximately 1 foot 6 inches bls. Tank Nos. T25-1, T25-2, and T25-3 were set vertically while Tank Nos. T25-4 and T24-5 were set horizontally as shown in Figure 2.1.

The contaminated soils were removed using an excavator, loaded directly into transport vehicles, and routed to the off-site permitted disposal facility operated by Michigan Disposal, Inc. in Belleville, Michigan. The excavation activities removed approximately 140 tons of contaminated soils. To mitigate the spread of contaminants off-site, the trucks were decontaminated by brushing the tires and sides of the truck bed to remove soil and/or debris prior to leaving the site.



LEGEND

(T25-3) FORMER LOCATION OF UST

FORMER LOCATION OF UST PIPELINE

NOTES:

1. REFER TO FIGURE 1.2 FOR LOCATION OF USTs.
2. LOCATION OF USTs NO. 125-1 THRU T25-5 IS APPROXIMATE.

OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. LANGE	6/23/95
CHECKED BY	_	DATE
APPROVED BY	_	DATE
REV. -	SHEET #	CT 17418

FIGURE 2.1

LIMITS OF EXCAVATION

D.O. #78
MCB CAMP LEJEUNE

PREPARED FOR

LANTDIV

C:\OHM\LANTDIV\LEJEUNE\17418\RECORD\FIG2-1.DWG

Upon removal, the tanks and piping were taken to the temporary staging/decontamination area for pressure cleaning. The ends of the tanks were removed using hydraulic shears. UST decontamination and cutting was performed on a lined decontamination pad. The liquids generated during decontamination were collected and placed in drums for analysis and disposal. The decontaminated steel tanks and piping were then shipped to the BFI/Sampson County Disposal Inc. located in Roseboro, North Carolina. The analytical data from the decontamination liquids indicated low levels of contamination; therefore, these liquids were disposed through the groundwater treatment plant at Lot 203.

Photographic documentation of the performance of the project activities is provided in Appendix B.

2.6 CONFIRMATION SAMPLING

On January 12, 1996, the five USTs and 2 feet of soil around each UST were removed. On January 16, 1996, at the direction of LANTDIV, additional excavation was performed adjacent to the air compressor on the east wall and southeast corner of the excavation. Six grab samples were collected from the face of each of the four walls and floor of the UST pit. The six samples at each location were mixed together in a stainless steel bowl to form one composite confirmation sample for that location. Laboratory results did not indicate the presence of contaminants above the action levels for soil remediation in samples collected from the west wall, north wall, or bottom the of pit. Laboratory results indicated the presence of contaminants above the action levels for soil remediation in samples collected from the south and east walls of the excavation. Additional excavation was not performed along the south sidewall adjacent to Building 25 since further excavation could likely damage the buildings foundation. On February 1, 1996, an additional six confirmation samples were collected adjacent to the east wall of the excavation to further delineate contamination in this area. Refer to Section 6.2 for a discussion of the test results of confirmation samples.

2.7 BACKFILLING AND REVEGETATION

Upon completion of field construction activities, excavated areas were backfilled with soils from the Base borrow area. The backfill was compacted utilizing the heavy equipment on-site. Once the areas were brought to the approximate original grade, the area was prepared for planting grass. The disturbed areas were fertilized and seeded. An as-built drawing of the site which depicts the excavation area is presented in Figure 2.1.

3.0 FINAL HEALTH AND SAFETY REPORT

3.1 MOBILIZATION AND SITE PREPARATION

The site set-up for MCB Camp Lejeune, North Carolina, included the following:

- The OHM Field Office at Lot 203 was used for this project.

- Prior to the start of on-site operations, all on-site OHM personnel read, understood and signed the OHM Site-Specific Health and Safety Plan (HASP). In accordance with OSHA requirements, the following items were set-up on-site:
  - Employee Right-To-Know poster and station
  - Material Safety Data Sheets (MSDSs) for all on-site chemicals
  - Hospital route and map posted in the command center and a copy placed in the glove compartments of all site vehicles
  - Site-specific evacuation plan posted in the command center
  - Exit signs posted in the command center

3.2 ON-SITE OPERATIONS

The removal of five Building 25 USTs, UST piping, and associated contaminated soil at MCB Camp Lejeune, North Carolina, included these tasks:

- Relocation of an air compressor shed

- Installation of temporary monitoring wells

- UST Removal, UST decontamination, site excavation, and off-site disposal of USTs and contaminated soils

- Site sampling

- Backfill and site restoration

Prior to excavation of the soil above the USTs, all utility companies were notified to locate their lines in the area. Water was made readily available on-site for dust control measures. Daily Safety Meeting Logs are included in Appendix J.

All sampling of soil and UST contents was performed in Level C Personal Protective Equipment (PPE) which included MSA air purifying respirator with attached MSA GMC-H

type cartridges, tyvek and hood, sample gloves, hard hat, steel toe shoes, and vinyl booties. Safety issues stressed during work activities included good housekeeping and heat stress.

Cleaning and decontamination of the USTs was performed with Level C PPE including MSA full-face air purifying respirators with attached MSA GMC-H type cartridges, tyvek and hood, hard hat, safety, safety glasses, steel-toed safety shoes and vinyl booties. Issues stressed during work activities included good housekeeping, heat stress, and a communication system for site personnel.

Relocation of the Building 25 air compressor, excavation, backfill operations, and hydro-seeding were performed in Level D PPE. These task required protective clothing including hard hat, safety glasses, steel toe boots and cotton gloves. Safety issues stressed during work activities included good housekeeping, heat stress, shoring and trenching requirements, and communication system for site personnel.

3.3 AIR MONITORING

Air monitoring of the breathing zone was performed continuously for volatile organic compounds (VOC) and TCE during the sampling, excavation, and loading of the waste. A photoionization detector (PID) was used to identify the VOCs and TCE. As outlined in the HASP, air monitoring readings and calibration data for the instruments were recorded and documented. Air monitoring data and equipment calibration sheets are included in Appendix J. The results indicated that no concentrations of dust or VOCs above background levels were identified in the workers' breathing zone during the excavation and loading or the sampling activities. No upgrades of protection were necessary during the course of the project. Based on low PID readings, soil excavation was performed in Level D PPE. Since no spikes were recorded during air monitoring with the PID or detector tubes during soil and tank sampling, Level C PPE was adequate.

3.4 TRAINING REQUIREMENTS

OHM employees, subcontractors and site visitors allowed access to work areas were required to have completed the 40-hour health and safety training course for Hazardous Waste Site Operations in accordance with 29 CFR 1910.120 and had to read, understand and sign the HASP.

3.5 ACCIDENTS AND/OR INJURIES

The project was completed without an OSHA Reportable Accident or Lost Time Injury.

4.0 SUMMARY OF RECORD DOCUMENTS

A tabular summary of the record documents submitted to the Navy Technical Representative for Delivery Order 78 is presented in Table 4.1.

Table 4.1 - Submittal Register

Spec. No.	SD No. and Type of Submittal Material or Product	Spec. Para. No.	Approval by CO	Gov. or A/E Reviewer	Trans. Control No.	Planned Sub. Date	Action Code	Date of Action	Date Forwarded to Appro. Auth./Date Received from Contr.	Date Forwarded to Other Reviewer	Date Received from Other Reviewer	Action Code	Date of Action	Mailed to Contr./Recd. from Appro. Auth.	Remarks
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
01010	Shop Drawings	1.2.1.1.c							N/A						
01010	Construction Plans	1.2.1.1.b							7/95						
01010	Work Plan	1.2.1.a							7/95						
01010	Environmental Project Plan	1.2.1.1.d							7/95						
01010	Health and Safety Plan	1.2.1.1.e							7/95						
01010	QC Plan	1.2.1.1.f							7/95						
01010	Testing Lab Qualifications	1.2.1.1.f							N/A						
01010	Sampling and Analysis Plan	1.2.1.1.g							7/95						
01010	As-built Records	1.3.1.1							In Closeout Rpt.						
01010	Environmental Condition Report	1.3.1.2							7/95						
01010	Network Analysis Diagram	1.3.1.3							7/95						
01010	Status Reports	1.3.1.3							Monthly						
01010	QC Meeting Minutes	1.3.1.4							Weekly						Closeout Rpt.
01010	Test Results Summary Report	1.3.1.5							as recorded						Closeout Rpt.
01010	Contractor Production Report	1.3.1.6							Daily						
01010	QC Report	1.3.1.7							In Closeout Rpt.						Closeout Rpt.
01010	Rework Items List	1.3.1.8							N/A						
01010	Permits	1.3.1.9							N/A						
01010	Contractor's Closeout Report	1.3.1.10													Closeout Rpt.

N/A = Not Applicable

5.0 *FIELD CHANGES AND CONTRACT MODIFICATIONS*

5.1 FIELD CHANGES

During field operations, weekly progress meetings were held with the Navy Technical Representative (NTR). During these meetings, items of concern and project status were discussed. Field changes were discussed and implemented when conditions dictated. The following is a summary of changes agreed to by OHM and the Navy with a brief explanation:

- Temporary Monitoring Well Installation – Four temporary monitoring wells in the area of Building 25 USTs were installed, sampled, and samples analyzed to obtain groundwater data for this site. Soil samples were collected during well installation and analyzed.

- Air Compressor Relocation – The air compressor for Building 25 was relocated to allow excavation and removal of the USTs.

- Additional Soil Samples – Samples collected from the UST excavation indicated that contamination was present. At LANTDIV's request, OHM collected six additional confirmation samples for analyses.

- Closeout Report Revisions – Base personnel chose to comply with any state regulatory requirements rather than charge OHM with that duty as indicated in the work plan.

5.2 CONTRACT MODIFICATIONS

During the course of the project, one contract modification was made. Modification No. 01 was issued by LANTDIV on March 7, 1996, to decrease transportation and disposal cost of 464.5 tons of contaminated soils and to take advantage of the alternate disposal method recommended by OHM. This resulted in a decrease of delivery order amount by $275,658.48.

6.0 SUMMARY OF CHEMICAL TESTING

During the course of the project, chemical analyses of the site soils and UST contents were used to direct the excavation and disposal activities to ensure that the project requirements were fulfilled. Various sampling and analytical events were conducted to achieve the project goals. Listed below are the chemical analytical events that were conducted for this project.

- Waste characterization by an off-site laboratory of composite soil samples from soil adjacent to the UST piping and the five USTs at Building 25
- Waste characterization by an off-site laboratory of liquid samples collected from inside each of the five USTs at Building 25
- Waste characterization by an off-site laboratory of composite liquid sample collected from drums of liquids generated during decontamination of equipment and the USTs
- Confirmation by an off-site laboratory of discrete soil samples from the bottom and sides of the UST excavation pits for the contaminants of concern of each individual location
- Analysis by an off-site laboratory of groundwater and soil samples from four temporary monitoring wells installed at the site

The following paragraphs discuss the general results of the sampling events and actions taken based on those results.

6.1 WASTE CHARACTERIZATION

Prior to the excavation of soils and removal of the USTs, an OHM technician collected composite samples from soil adjacent to the USTs and UST piping. Liquid samples were collected from each UST and from the drums of water generated during UST cleaning and decontamination. The samples from the soil and liquids are listed in Table 6.1.

Table 6.1 Summary of Waste Characterization Samples			
Date	*Sample Identification*	*Location*	*Purpose*
9/20/95	CLJ78-WT-001	Liquids from Tank 25-1	Waste Characterization
9/20/95	CLJ78-WT-002	Liquids from Tank 25-2	Waste Characterization
9/20/95	CLJ78-WT-003	Liquids from Tank 25-3	Waste Characterization
9/20/95	CLJ78-WT-004	Liquids from Tank 25-4	Waste Characterization
9/20/95	CLJ78-WT-005	Liquids from Tank 25-5	Waste Characterization
9/20/95	CLJ78-WS-001	Soil Sample near piping from Building 25	Waste Characterization
9/20/95	CLJ78-WS-002	Soil near Tank 25-1	Waste Characterization
9/20/95	CLJ78-WS-003	Soil near Tank 25-2	Waste Characterization
9/20/95	CLJ78-WS-004	Soil near Tank 25-3	Waste Characterization
9/20/95	CLJ78-WS-005	Soil near Tank 25-4	Waste Characterization
9/20/95	CLJ78-WS-006	Soil near Tank 25-5	Waste Characterization
1/18/96	CLJ78IN001	Liquids in Drums from UST Cleaning and Decontamination	Waste Characterization
1/18/96	CLJ78TB001	Trip Blank	Quality Assurance
1/18/96	CLJ78FB001	Field Blank for Equipment Rinsate	Quality Assurance

The soil waste characterization samples were documented, preserved and shipped overnight to Pace Incorporated laboratory. The soil samples were analyzed for the following tests:

Parameter	Analytical Method
VOA	8240
SVOA	3550/8270
Pesticides/PCBs	3550/8080
TAL Metal	6010/7000
Reactive Cyanide	7.3.3
Reactive Sulfide	7.3.4
Ignitability	1010 or 1020
pH	9040
% Water	3550
BTU	5050
Total Halogen	5050/9250
Total TCLP	1311/8240/8270/8080/8150/6010/7470

The liquid samples collected from the USTs were documented, preserved and shipped overnight to Pace Incorporated where they were analyzed for the following tests:

Parameter	Analytical Method
VOA	8240
SVOA	3550/8270
Pesticides/PCBs	3550/8080
TAL Metal	6010/7000
Reactive Cyanide	7.3.3
Reactive Sulfide	7.3.4
Ignitability	1010 or 1020
pH	9040
% Water	3550
BTU	5050
Total Halogen	5050/9250

The complete results and data sheets for these analyses are included in this report in Appendix H and summarized in Tables 6.2 and 6.3. This information was forwarded to the identified disposal facilities for disposal approval. Based on these results, the disposal facilities approved the disposal of the materials. Solvent-contaminated soil was disposed of at Michigan Disposal, Inc. facility in Belleville, Michigan; the contents of the USTs was disposed of by Clean Harbors of Baltimore, Inc. in Baltimore, Maryland.

The composite sample taken from the drummed water generated during decontamination of the tanks and equipment were analyzed by OHM's Analytical Division for the following tests:

Parameter	Analytical Method
VOA	8240
SVOA	3550/8270
Pesticides/PCBs	3550/8080
Reactive Cyanide	7.3.3
Reactive Sulfide	7.3.4
Ignitability	1010 or 1020
pH	9040
Ignitability	1010 or 1020
Total Halogen	5050/9250

The complete results and data sheets for these analyses are included in Appendix H of this report. Based on these results, the decontamination water was transported to Site 82 and treated by the groundwater treatment plant located at Lot 203 at MCB Camp Lejeune.

Table 6.2
Summary of Results of Soil Waste Characterization Samples 9/20/95

Parameter	*Units*	*CLJ78-WS-001*	*CLJ78-WS-002*	*CLJ78-WS-003*	*CLJ78-WS-004*	*CLJ78-WS-005*	*CLJ78-WS-006*
PCBs	µg/kg	270	BDL	BDL	78	BDL	BDL
Pesticides							
4,4 DDD	µg/kg	4700	1500	920	410	100	20
4,4 DDE	µg/kg	BDL	87	96	58	47	12
4,4 DDT	µg/kg	BDL	BDL	BDL	BDL	14J	BDL
Acid, Bases, Neutral							
Naphthalene	µg/kg	1.4J	.6J	BDL	0.1J	0.6J	0.3J
Bis(2-ethylhexyl) phthalate	µg/kg	46	14	2.6J	3.4J	1.1J	0.1J
Butylbenzyl phthalate	µg/kg	BDL	BDL	BDL	0.2J	BDL	BDL
2-Methyl naphthalene	µg/kg	BDL	BDL	BDL	BDL	0.1J	BDL
Volatile Organic Compounds							
MEK	µg/kg	1,200J	8B	39	240	0.8B	1.5
1,2 DCE	µg/kg	BDL	33	BDL	BDL	3.7	7
PCE	µg/kg	18,000	38	1,000	3,300	5	1
Xylene	µg/kg	BDL	11	BDL	1.5	BDL	0.7
TCLP Volatile Organic Compounds							
PCE	µg/kg	100	1.1	23	100	0.068	0.009
TCE	µg/kg	< 1.7	0.07	BDL	BDL	0.004J	0.005

Notes: J = Probable presence below detection limit
B = Analyte was detected in method blank
BDL = Below detection limit

Table 6.3
Summary of Results of Liquid Waste Characterization Samples 9/20/95

Parameter	*Units*	*CLJ78-WT-001*	*CLJ78-WT-002*	*CLJ78-WT-003*	*CLJ78-WT-004*	*CLJ78-WT-005*
pH	—	7.18	5.99	5.89	7.29	7.22
Releasable Sulfide	mg/kg	<50	<50	<50	<50	<50
Releasable Cyanide	mg/kg	<1	<1	<1	<1	<1
Flashpoint	°F	>150	>150	>150	>150	>150
PCBs	µg/L	BDL	BDL	BDL	BDL	BDL
Pesticides						
4,4 DDE	µg/L	2.8J	19	1.1	BDL	0.2
4,4 DDD	µg/L	22	190	6.5	1.9	1.3
Acid, Bases, Neutral						
Aniline	µg/L	46J	BDL	10J	BDL	BDL
4 Methylphenol	µg/L	980	BDL	230	820	1,100J
2 Methylphenol ether	µg/L	BDL	BDL	48	BDL	BDL
Bis (2-ethylhexyl)ether	µg/L	BDL	BDL	110	190J	BDL
2,4 Dimethylphenol	µg/L	BDL	BDL	57	BDL	BDL
Naphthalene	µg/L	BDL	BDL	16J	330J	860J
Bis(2-ethylhexyl) phthalate	µg/L	BDL	BDL	6.3J	BDL	BDL
Karl Fischer Titration	%	72.93	97.81	57.52	63.49	46.33
Volatile Organic Compounds						
1,2 DCE	µg/L	7,900	9,700	350,000	390	650
Xylene	µg/L	910	1,300	BDL	1,100	1,300
MEK	µg/L	BDL	1,800J	BDL	200B	120J
TCE	µg/L	BDL	12,000	BDL	130	150
PCE	µg/L	BDL	30,000	BDL	BDL	BDL
Acetone	µg/L	BDL	BDL	BDL	250J	420J
4 Methyl 2 Pentanone	µg/L	BDL	BDL	BDL	BDL	BDL
Toluene	µg/L	BDL	BDL	BDL	86J	94J

Notes: J = Probable presence below detection limit
B = Analyte was detected in method blank
BDL = Below detection limit

6.2 CONFIRMATION ANALYSES

After removal of the USTs and excavation of the adjacent 2 feet of soil, composite confirmation samples were collected to verify that all soil with contaminant levels above the remedial goals had been removed. Confirmation samples collected are listed in Table 6.4. The samples were taken from the bottom and side walls of the excavation. The soil

samples collected from the tank pits following removal of the USTs were analyzed by OHM's Analytical Division for the following tests:

Parameter	Analytical Method
VOA	8240
SVOA	3550/8270
Pesticides/PCBs	3550/8080
TAL Metal	6010/7000
TPH	418.1

Confirmation laboratory results from samples collected from the bottom and walls of the UST pit detected tetrachloroethylene (PCE) between 1,800,000 µg/kg and 130 µg/kg which is above the EPA Soil Screening Levels of Transfer of Contaminants to Groundwater of 40 µg/kg. Test results from the samples from the south and east walls of the UST pit detected PCE above the action level for soil remediation of 12,000 µg/kg provided by LANTDIV. Additional removal of soil on the south UST pit wall was not performed due to the potential damage of the foundation to the adjacent air compressor.

Confirmation laboratory results from samples collected from the south and east walls of the UST pit detected 4,4'-DDD at 1,700 µg/kg which is above the EPA Soil Screening Levels of 700 µg/kg and below the LANTDIV Action Level of 2,700 µg/kg. The results of samples from the north wall, west wall and bottom of the UST pit detected the presence of 4,4'-DDD between 19 µg/kg and 430 µg/kg, which is below the EPA Soil Screening Level of 700 µg/kg. Laboratory results detected petroleum hydrocarbons in the walls and bottom of the UST pit at levels between 41 mg/kg and 820 mg/kg. The action level for soil remediation of petroleum hydrocarbon was not provided by LANTDIV. A summary of the confirmation data is presented in Table 6.5. On January 17, 1996, the excavation was backfilled with clean fill.

Since laboratory results of the composite sample on the east wall detected the presence of PCE (37,000 µg/mg) above the action level of 12,000 µg/kg, additional soil sampling was recommended. As directed by the NTR, six samples were collected from three hand auger borings at 3 feet and 6 feet bls in the unexcavated soils adjacent to the edge of the previous excavation. Refer to Figure 6.2 for confirmation sample locations. These test results detected the presence of PCE between 233 µg/kg and 5,680 µg/kg, which is below the action level of 12,000 µg/kg and above the EPA Soil Screening Level of 40 µg/kg. A summary of this confirmation data is presented in Table 6.6. The laboratory data sheets re included as Appendix H of this report.

Table 6.4
Summary of Confirmation Samples

Date	*Sample Identification*	*Location*	*Purpose*
1/16/96	CLJ78RB001	Equipment Rinsate	Waste Removal Confirmation
1/16/96	CLJ78CSOO1	UST Pit, East Wall	Waste Removal Confirmation
1/16/96	CLJ78CS002	UST Pit, South Wall	Waste Removal Confirmation
1/16/96	CLJ78CS003	UST Pit, West Wall	Waste Removal Confirmation
1/16/96	CLJ78CS004	UST Pit, North Wall	Waste Removal Confirmation
1/16/96	CLJ78CS005	UST Pit, Bottom	Waste Removal Confirmation
1/16/96	CLJ78CD005	Duplicate UST Pit, Bottom	Quality Assurance
1/16/96	Trip Blank	Trip Blank	Quality Assurance
02/01/96	CLJ7855-SS-001	Building 25, Soil 3 depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-002	Building 25, Soil 6' depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-003	Building 25, Soil 3' depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-004	Building 25, Soil 6' depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-005	Building 25, Soil 3' depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-006	Building 25, Soil 6' depth	Waste Removal Confirmation
02/01/96	CLJ7855-SS-006D	Building 25, Soil 6' depth	Quality Assurance Duplicate
02/01/96	CLJ-FB	Field Blank	Quality Assurance
02/01/96	CLJ-RB	Rinsate Blank	Quality Assurance
02/01/96	CLJ-TB	Trip Blank	Quality Assurance

Table 6.5
Summary of Results of Soil Confirmation Samples 1/16/96

Parameter	*Units*	*CLJ78-CS-001 South Wall*	*CLJ78-CS-002 West Wall*	*CLJ78-CS-003 North Wall*	*CLJ78-CS-004 East Wall*	*CLJ78-CS-005 Bottom*
Solids, Total	%	82.3%	84.5%	85.5%	83.1%	83.8%
Petroleum hydrocarbons	mg/kg	820	41	66	580	99
Pesticides						
4,4' DDD	mg/kg	1.7	<.019	0.230	1.7	0.43
4,4' DDE	mg/kg	0.256	<.0097J	0.081	0.28	0.091
4,4' DDT	mg/kg	0.50	<.019	0.047	0.75	0.065
TAL Metals						
Aluminum	mg/kg	9,280	4,400	6,110	5,690	4,960
Calcium	mg/kg	693	791	802	788	951
Chromium	mg/kg	10.9	5.5	7.3	8.3	6.9
Copper	mg/kg	<.389	1.98	4.0	7.0	2.9
Iron	mg/kg	6,590	1,470	2,090	2,110	2,110
Lead	mg/kg	12.4	12.0	18.7	45.6	19.8
Manganese	mg/kg	6.57	4.9	5.9	11.8	6.7
Mercury	mg/kg	.021	.023	.087	.058	.058
Vanadium	mg/kg	17.5	5.2B	6.6	6.3	6.1
Zinc	mg/kg	14.8	9.7	19.5	42.5	24.2
Acid, Bases, Neutral						
Bis(2-Ethylhexyl) phthalate	mg/kg	1.8	.28J	5.1	4.5	.330J
Fluoranthene	mg/kg	<.4	<.39	2.0	<.39	.25J
Pyrene	mg/kg	<.4	<.39	3.4	<.39	.22J
Benzo(a)anthracene	mg/kg	<.4	<.39	1.3	<.39	<.39
Chrysene	mg/kg	<.4	<.39	1.8	<.39	<.39
Benzo(b)fluoranthene	mg/kg	<.4	<.39	1.2	<.39	<.39
Benzo(k)fluoranthene	mg/kg	<.4	<.39	1.1	<.39	<.39
Benzo(a)pyrene	mg/kg	<.4	<.39	.68	<.39	<.39
Volatile Organic Compounds						
Acetone	mg/kg	<140	.043	.033	<6.9	<1.40
Tetrachloroethylene	mg/kg	1,800	.130	.200	37	2.60
Toluene	mg/kg	<69	.020	.023	<3.4	<.7
1,2-Dichloro-ethene (total)	mg/kg	<44	.054	.013	<3.4	1.70

Notes: J = Probable presence below detection limit
B = Analyte was detected in method blank

Table 6.6
Summary of Results of Soil Confirmation Samples 2/1/96

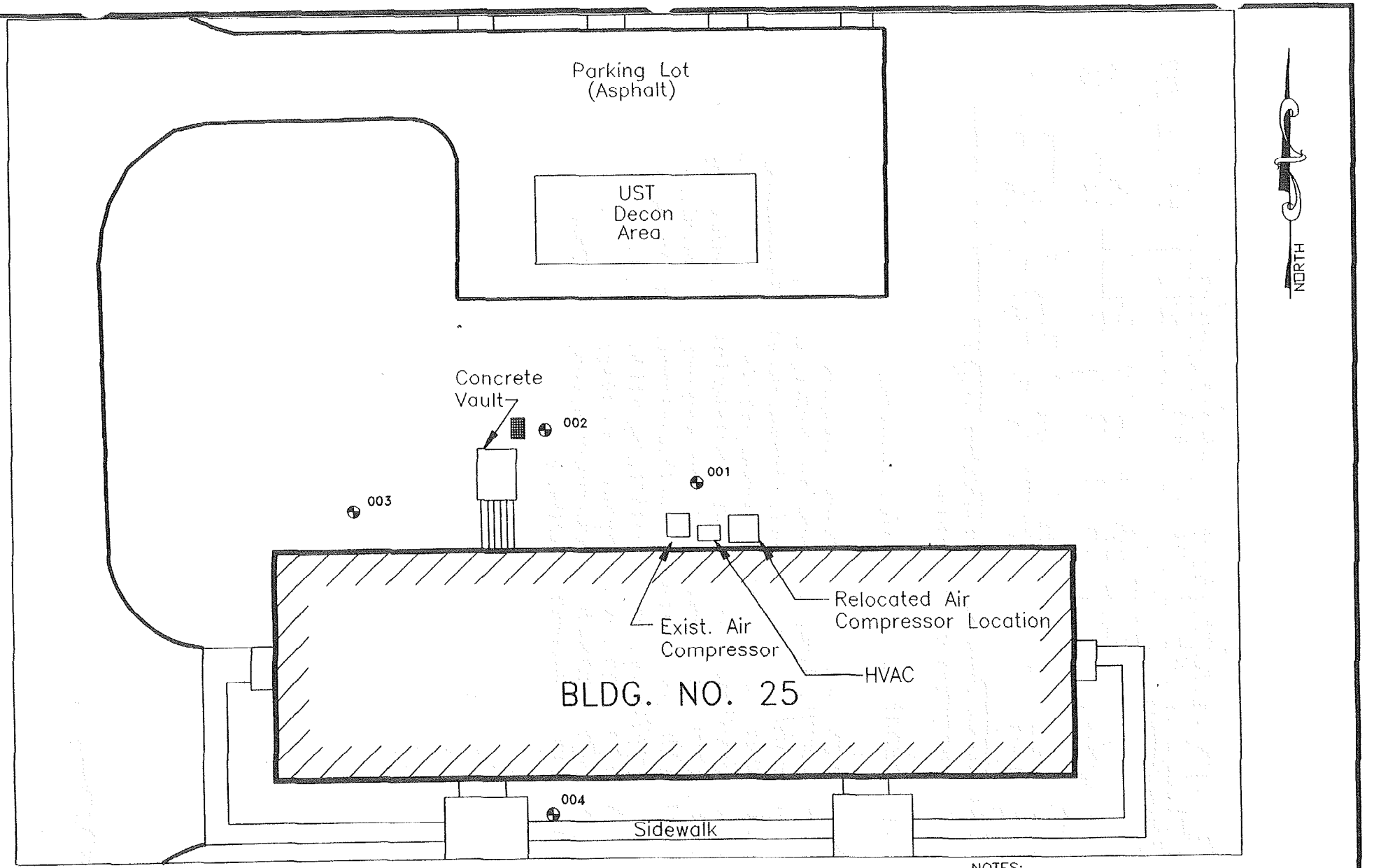
Parameter	*Units*	*CLJ78-SS-001*	*CLJ78-SS-002*	*CLJ78-SS-003*	*CLJ78-SS-004*	*CLJ78-SS-005*	*CLJ78-SS-006*
Solids, Total	%	82.8%	77.8%	83.7%	76.9%	81.6%	81.6%
Volatile Organic Compounds							
Acetone	mg/kg	<.055	<.024	<.091	0.84	<.123	<.061
Tetrachloro-ethylene	mg/kg	1.3	.233	4.55	.508	5.68	.554
Toluene	mg/kg	0.24	<.012	<.045	<.034	<.061	<.31
1,2-Dichloro-ethene (total)	mg/kg	<0.27	.024	.155	.239	<.061	.1

Notes: All contaminant concentrations are in micrograms/kilogram

J = Probable presence below detection limit

6.3 TEMPORARY MONITORING WELL ANALYSES

Four temporary groundwater monitoring wells were installed on November 12, 1995 to assist in evaluation of soil and groundwater in the Building 25 UST area. The location of these temporary wells is shown in Figure 6.1. Groundwater and soil samples collected at these well locations were analyzed for the contaminants of concern. A summary of the groundwater data, a summary of the soil data, and the field note generated during well installation are presented in Appendix I. The laboratory data sheets are included in Appendix H of this report. Laboratory results from soil samples collected during well installation detected the presence of PCE at 55 µg/kg, which is below the action level of 12,000 µg/kg and above the EPA soil screening level of 40 µg/kg. Groundwater remediation is being addressed in a separate report being prepared by Baker Environmental, Inc. for the Department of the Navy.



OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. LANGE	6/23/95
CHECKED BY	–	DATE
APPROVED BY	–	DATE
REV.	SHEET #	CT

17418

FIGURE 6.1
TEMPORARY MONITORING WELL LOCATIONS

D.O. #78
MCB CAMP LEJEUNE

PREPARED FOR

LANTDIV

LEGEND

001 TEMPORARY MONITORING WELL LOCATIONS

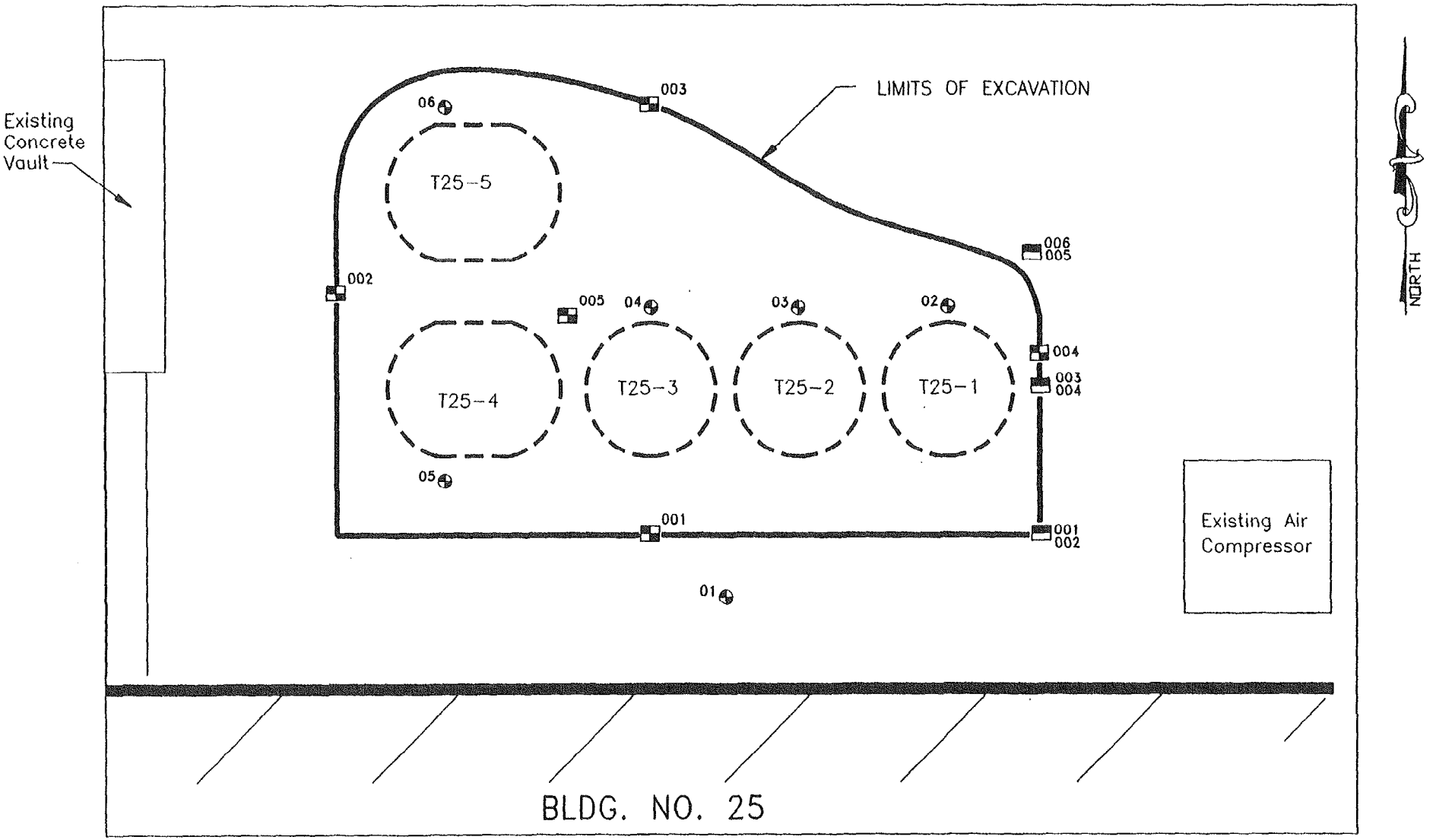
30 0 30

SCALE: 1"=30'

NOTES:

1. TEMPORARY MONITORING WELLS INSTALLED ON 11/12/95.
2. BOTH SOIL AND GROUNDWATER SAMPLES WERE COLLECTED AT MONITORING WELL LOCATIONS
3. PEFIX FOR SAMPLES AT MONITORING WELL LOCATIONS IS CLJ78-TW-#.
4. LOCATION OF USTs, NOT SH FOR CLARITY

C:\OHM\LANTDIV\LEJEUNE\17418\RECORD\FIG6-1.DWG



5 0 5

SCALE: 1"=5'

LEGEND

(T25-3) FORMER LOCATION OF UST

FORMER LOCATION OF UST PIPELINE

01 PRE-EXCAVATION SOIL WASTE CHARACTERIZATION SAMPLE

001 1st ROUND CONFIRMATION SAMPLE

001 002 2nd ROUND CONFIRMATION SAMPLE

NOTES:

1. PEFIX FOR ALL PRE-EXCAVATION SAMPLE POINT IDENTIFICATIONS ARE CLJ78-WS-#
2. PREFIX FOR ALL CONFIRMATION SAMPLE POINT IDENTIFICATIONS ARE CLJ78CS#
3. PEFIX FOR ALL 2nd AROUND CONFIRMATION SAMPLE POINT IDENTIFICATIONS ARE CLJ78-SS-#
4. REFER TO FIGURE 1.2 FOR LOCATION OF USTs.

OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. LANGE	6/23/95
CHECKED BY	–	DATE
APPROVED BY	–	DATE

REV.	SHEET #	PROJECT NO.
3		17418

FIGURE 6.2

SOIL SAMPLING LOCATIONS

D.O. #78
MCB CAMP LEJEUNE

PREPARED FOR

LANTDIV

C:\OHM\LANTDIV\LEJEUNE\17418\RECORD\FIG6-2.DWG

7.0 OFF-SITE DISPOSITION OF MATERIAL

All contaminated soils and liquids generated during UST removal and destined for off-site disposal facilities were transported by licensed waste haulers. Six truck loads containing approximately 140 tons of TCE-contaminated soil were transported to Envotech Management Services Inc. in Belleville, Michigan. One truckload of liquids from the USTs was transported to Clean Harbors of Baltimore in Baltimore, Maryland. Approximately 4.1 tons of scrap metal USTs and piping were transported to BFI/Sampson County Disposal Inc. in Roseboro, North Carolina. Approximately 12 drums of decontamination water generated during cleaning and cutting of the USTs were transported to the Lot 203 groundwater treatment system located at MCB Camp Lejeune. One roll-off container of miscellaneous debris, personal protective equipment (PPE), and decontamination pad liner was disposed of at the BFI/Sampson County Disposal, Inc. All transportation and disposal was performed in accordance with state and federal regulations. A summary of off-site waste disposal is presented in Table 7.1.

All trucks were weighed by the Base scales to establish their weight prior to being loaded. After loading, the trucks were re-weighed to calculate the weight of material hauled and ensure maximum load capacities were within their legal haul limits. The trucks were brushed to remove soil and debris from the vehicles tires and bed, the manifests were signed by Base personnel, and the trucks released for travel to the disposal facility. Copies of the waste manifests are included in this report as Appendix C, and disposal certification for hazardous waste is located in Appendix D.

Table 7.1
Summary of Off-site Waste Disposal

Date	*Description*	*Quantity*	*Destination*	*Manifest Number*	*Hazard Classification*
1/11/96	Solvent Contaminated Liquids	3,180 gallons	Clean Harbors Baltimore, MD	O1273	Hazardous
1/12/96	Solvent Contaminated Soils	23.83 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1275	Hazardous
1/16/96	Solvent Contaminated Soils	23.51 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1280	Hazardous
1/12/96	Solvent Contaminated Soils	22.06 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1277	Hazardous
1/16/96	Solvent Contaminated Soils	23.15 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1276	Hazardous
1/16/96	Solvent Contaminated Soils	23.38 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1282	Hazardous
1/12/96	Solvent Contaminated Soils	24.95 tons	Envirotech Services Inc/ Michigan Disposal Inc.	O1274	Hazardous
1/15/96	Scrap Steel	4.1 tons	BFI/Sampson County Disposal Inc., Roseboro, NC	N/A	Non-Hazardous
2/96	Decontamination Liquids	660 gallons	Lot 201 Groundwater treatment system located at the Base	N/A	Non-Hazardous
1/16/96	PPE & Plastic Decon Pad Liner	one roll-off container	BFI/Sampson County Disposal Inc., Roseboro, NC	N/A	Non-Hazardous

8.0 QUALITY CONTROL SUMMARY

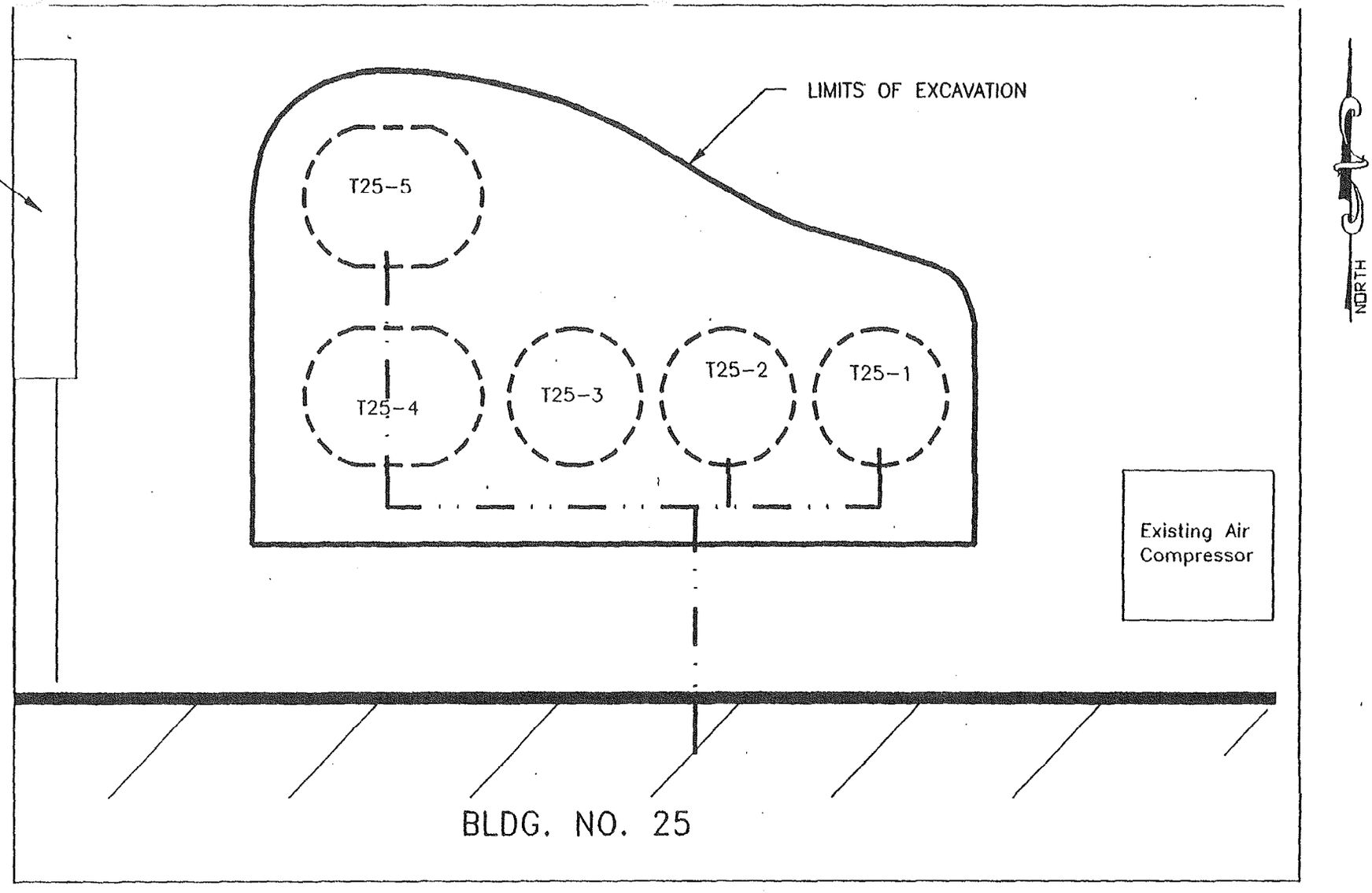
The Quality Control (QC) Engineer conducted preparatory and initial site inspections during a site visit. This offered the QC Engineer an opportunity to review the completeness and adequacy of mobilization activities, to observe health and safety practices, to evaluate excavation operations, and to check sampling and analysis documentation. No QC problems were noted during the performance of this project. QC meetings were conducted and the minutes recorded and submitted with the inspection report to the NTR by the Site Supervisor. The minutes of the QC meetings are included in Appendix E.

Additional submittals forwarded to the NTR and their frequency of submission were as follows:

- Daily Sign-in Log
- Daily Health and Safety Report
- Daily Cost Report
- Weekly Cost Variance Report
- Field Sampling Test Results
- Confirmation Sample Test Results

Appendix A

As-Built Drawings



OHM Remediation Services Corp. NORCROSS, GEORGIA A Subsidiary of OHM Corporation		
DRAWN BY	J. LANGE	6/23/95
CHECKED BY	–	DATE
APPROVED BY	–	DATE
REV. 3	SHEET #	PROJECT NO. 17418

FIGURE 2.1

LIMITS OF EXCAVATION

D.O. #78
MCB CAMP LEJEUNE
PREPARED FOR
LANTDIV

LEGEND

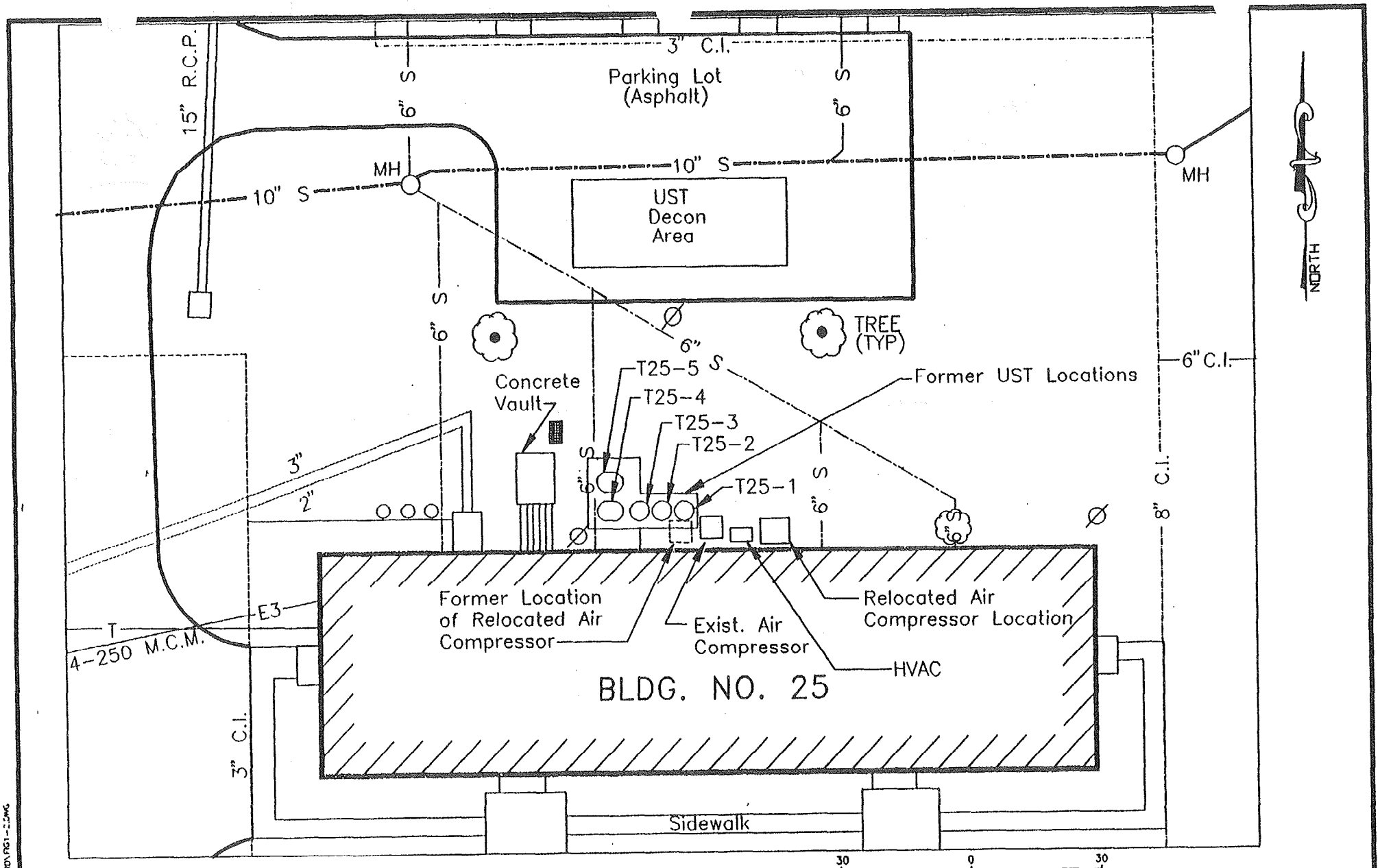
(T25-3) FORMER LOCATION OF UST

FORMER LOCATION OF UST PIPELINE

NOTES:

1. REFER TO FIGURE 1.2 FOR LOCATION OF USTs.
2. LOCATION OF USTs NO. 125-1 THRU T25-5 IS APPROXIMATE.

C:\OHM\LANTDIV\LEJEUNE\17418\RECORD\FIG2-1.DWG



LEGEND

MH	MANHOLE
	DRAINAGE INLET
6" S	SEWERLINE
	POWER POLE
" CI	CAST IRON PIPE

NOTES:

1. BASE MAP AND UTILITIES ARE BASED ON DRAWING PROVIDED BY LANTDIV AND ON THE SITE WALK CONDUCTED BY OHM.
2. LOCATION OF USTs NO. T25-1 THRU T25-5 IS APPROXIMATE.
3. REFER TO FIGURE 6.1 FOR \TIONS OF TEMPORARY MONITORING WEL

OHM Remediation Services Corp.
NORCROSS, GEORGIA
A SUBSIDIARY OF OHM CORPORATION

DRAWN BY	J. LANGE	6/23/95
CHECKED BY	–	DATE
APPROVED BY	–	DATE

REV. | SHEET | ROJECT 17418

FIGURE 1.2

SITE PLAN

D.O. #78
MCB CAMP LEJEUNE
PREPARED FOR
LANTDIV

C:\OHM\LANTDIV\LEJEUNE\17418\RECORD\FIG1-2.DWG

Appendix B

Photographic Documentation

Project No. 17418 Date: 12/14/95
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Form and rebar for air compressor pad

Project No. 17418 Date: 12/14/95
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Form and rebar for air compressor pad

Project No. 17418 Date: 12/15/95
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Pad for air compressor

Project No. 17418 Date: 12/15/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Pad for air compressor

Project No. 17418 Date: 12/15/95
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Pad for air compressor

Project No. 17418 Date: 12/15/95
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Pad for air compressor

Project No. 17418 Date: 1/6/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Relocation of air compressor

Project No. 17418 Date: 1/6/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Relocation of air compressor shed

Project No. 17418 Date: 1/6/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Relocation of air compressor

Project No. 17418 Date: 1/6/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Relocation of air compressor

Project No. 17418 Date: 1/6/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Relocation of air compressor

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Removal of tank contents into a tanker truck

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Removal of tank contents into a tanker truck

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Tank thief used to remove tank contents

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Air monitoring from the tanks

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Air monitoring from the tanks

Project No. 17418 Date: 1/12/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Removal of UST

Project No. 17418 Date: 1/12/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Tank staging area

Project No. 17418 Date: 1/11/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Transporter of the tank contents

Project No. 17418 Date: 1/12/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Tank staging area

Project No. 17418 Date: 1/14/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Cutting of UST with pneumatic nibbler

Project No. 17418 Date: 1/14/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Demolition of USTs

Project No. 17418 Date: 1/14/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Demolition of USTs

Project No. 17418 Date: 1/14/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Demolition of USTs

Project No. 17418 Date: 1/14/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Demolition of USTs

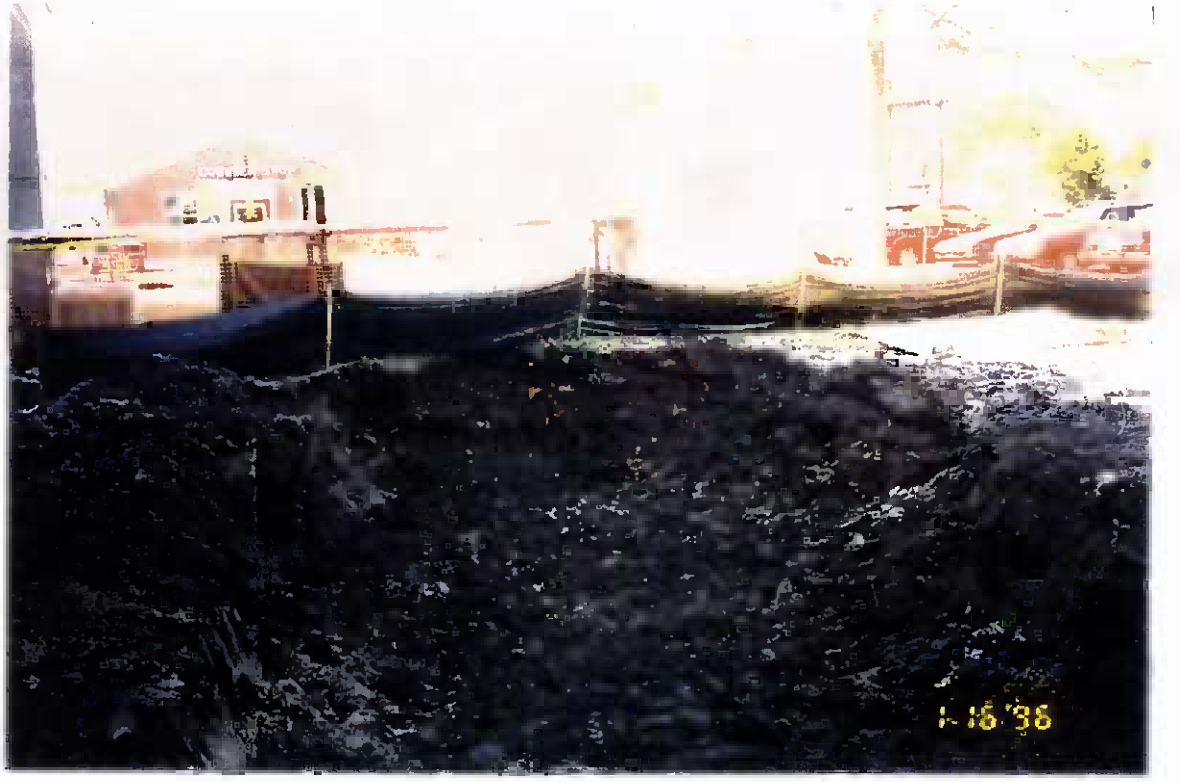
Project No. 17418 Date: 1/15/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: D[illegible]

Project No. 17418 Date: 1/15/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Decon of piping

Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Location of sample points for composite sample

Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description:Location of sample points for composite sample

Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description:Location of sample points for composite sample



Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description:Location of sample points for composite sample

Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description:Location of sample points for composite sample

Project No. 17418 Date: 1/16/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description:Location of sample points for composite sample

Project No. 17418 Date: 1/18/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Area after site restoration activities

Project No. 17418 Date: 1/18/96
Contract No. N62470-93-D-3032
Delivery Order: 78
Location: Building 25
Description: Area after site restoration activities