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BASIS OF DESIGN

REMEDIATION OF PESTICIDE-CONTAMINATED SOIL OPERABLE UNIT NO. 11 (SITE 80) PARADISE POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

CONTRACT TASK ORDER 0274

DECEMBER 15, 1995

Prepared For:

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia

Under:

LANTDIV CLEAN Program
Contract N62470-89-D-4814

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1.0 INTRODUCTION

This document presents the Basis of Design for the remediation of pesticide-contaminated surface soil at Operable Unit No. 11 (Site 80), Marine Corps Base (MCB), Camp Lejeune, North Carolina. Based on the results of the Remedial Investigation (RI) conducted at Site 80 (Baker Environmental, Inc., 1995), contaminated surface soil may present an imminent threat to human health and the environment. As a result, the remediation of this surface soil is being conducted as a time-critical removal action (TCRA). The TCRA includes excavation of the pesticide-contaminated surface soil and disposal of the soil at an appropriate treatment/disposal facility.

This Basis of Design document has been prepared by Baker Environmental, Inc. (Baker) for presentation to the Department of the Navy (DoN), Naval Facilities Engineering Command, Atlantic Division (LANTDIV), under Navy CLEAN Contract Number N62470 (Contract Task Order 0274). The Remedial Action Contracts Delivery Order Requirements Package Guide, NEESA 20.2-062 dated June 1992 was used as a guidance.

Please note that LANTDIV intends to use a Remedial Action Contractor (RAC) to implement the TCRA. In this document, the terms "RAC" and "Contractor" are used interchangeably.

1.1 Purpose of the Basis of Design

The purpose of the Basis of Design is to present LANTDIV with background data on the project, describe the primary elements of the remedial design, recommend design criteria, and present assumptions and any special requirements that may affect the design. This document is not intended to be part of construction plans or specifications to be utilized by the RAC for execution of the remedial action. Baker assumes no responsibility for the use of this report for any purpose other than the intended uses stated above.

2.0 BACKGROUND INFORMATION

This section presents background information relevant to the TCRA including: 1) a description of Site 80 and its history, 2) results from the 1991 investigation conducted by Halliburton, NUS, 3) results from the 1994-95 RI conducted by Baker, 4) a summary of the site risks, 5) remediation levels and the areas of concern, 6) the justification for a TCRA, and 7) the scope of the TCRA.

2.1 Site Description and History

There are currently 33 Installation Restoration Program (IRP) sites at MCB, Camp Lejeune which have been grouped into 17 Operable Units (OUs). Sites 7 and 80 were grouped together as OU No. 11 due to the close proximity of their geographic locations (see Figure 1). Site 7 is located on the northern bank of Northeast Creek and Site 80 is located on the southern bank of Northeast Creek. In addition to their geographic proximity, previous investigations at both sites detected the presence of pesticides in soil.

Site 80, located northwest of Brewster Boulevard within the Paradise Point Golf Course, is referred to as the Paradise Point Golf Course Maintenance Area. The site consists of a one-acre area which is relatively flat, with a slight slope to the northeast. Site elevations vary from 3 to approximately 26 feet above mean sea level (msl).

Figure 2 presents a site map. As shown, Site 80 contains a machine shop (Building 1916), a maintenance building (Building 600), and a maintenance wash down area consisting of a concrete wash pad and sump. The wash pad is used to clean golf course maintenance equipment and the sump is used to collect water and oil runoff generated from the equipment cleaning. Water and oil collected by the sump travels into an oil/water separation pit located southeast of the wash pad (Baker, 1994).

A drainage ditch is located east of the wash down area. During a March 1994 site reconnaissance, surface water runoff was observed flowing southeast across the site toward the drainage ditch. As shown on Figure 2, groundwater flow direction in the shallow aquifer is generally toward the northeast with a mounding effect near the wash down area.

The northeast portion of the site contains several large soil mounds that are overgrown with small pines. There is an open area located south of the mounds where golf course maintenance debris (i.e., tree limbs, lawn clippings, wooden timbers, and brush piles) is deposited. Evidence of burning operations conducted within this open area was documented during the March 1994 site reconnaissance. These soil mounds were generated from the installation of golf course ponds along the fairways in the late 1980s. It has been reported that wastes were disposed of on or around the mounds. However, the types of waste that were disposed and the exact disposal locations are unknown. Employees of the maintenance garage were instructed not to use the soil from this area for fill material (Baker, 1994).

In addition, old maintenance equipment has been deposited in the open and wooded areas surrounding Building 600. Two drums identified during the March 1994 site reconnaissance, were removed from the site by Activity personnel. These drums were located northeast of Building 600 just across the machine shop road (Baker, 1994). However, the contents of the drums are unknown.

Currently, a mobile trailer is stationed within the west/northwest portion of the site (i.e., the area located north of the machine shop road and east of the golf course road). Base personnel reported that a leach field associated with the golf course's sanitary sewer system is also located within this area (see Figure 2). However, the exact location of the leach field is not known. Based on an average groundwater elevation of 13 feet below ground surface (bgs) in this area, the leach field is most likely located at a shallow depth.

The Paradise Point Golf Course was constructed in the 1940s and Building 1916 was constructed in 1946. Reportedly, Site 80 has been used as a maintenance are since the initial construction of the golf course. Today, the maintenance area is still in operation. Current golf course maintenance operations include the machine shop (a potential source of waste oils), the equipment wash down area (a potential source of contaminated washwater), and the routine spraying of pesticides and herbicides.

2.2 Results from the Previous Investigation by Halliburton, NUS, 1991

In June 1991, Halliburton, NUS conducted surface soil, subsurface soil, groundwater, surface water, and sediment investigations at Site 80. Figure 3 identifies the sampling locations associated with

these investigations. Surface soil and subsurface soil were the only environmental media that contained pesticides. Table 1 summarizes the analytical results for the detected pesticides.

2.3 Results from the Remedial Investigation by Baker Environmental, Inc., 1994

In October 1994, Baker initiated an RI consisting of surface soil, subsurface soil, and groundwater investigations. Figure 4 identifies the locations of samples that were collected from October through December 1994. From June through July 1995, an additional round of soil and groundwater samples were collected to further characterize the west/northwest portion of the site. Figure 5 identifies the locations of these additional samples.

Table 2 summarizes the analytical results for pesticides that were detected during the RI. Figures 6 and 7 present the positive detections of pesticides in surface and subsurface soil samples, respectively, collected during the initial round of RI sampling. Figures 8 and 9 present the positive detections of pesticides in surface and subsurface soil samples, respectively, collected during the additional sampling round in the west/northwest area. Please note that subsurface soil samples were not collected from the center of the west/northwest area to avoid contact with the underground leach field.

2.4 Summary of Risks

During the RI, a baseline risk assessment (BRA) and an ecological risk assessment (ERA) were conducted. The following risk values associated with surface soil exposure exceeded acceptable limits:

- A hazard index (HI) of 1.9 for the future child resident. This risk was primarily driven by dieldrin, arsenic, and 4,4'-DDT, and to a lesser extent by aldrin, alpha-chlordane, gamma-chlordane, aluminum, manganese, mercury, and beryllium.

- An incremental cancer risk (ICR) value of 1.7×10^{-4} for the current civilian adult base personnel. This risk was primarily driven by dieldrin, arsenic, and 4,4'-DDD, and to a lesser extent by aldrin, 4,4'-DDT, alpha-chlordane, gamma-chlordane, and beryllium.

- A quotient index (QI) of 1.67 for the cottontail rabbit. This risk was completely driven by dieldrin.

All other risk values associated with surface soil exposure were within acceptable limits.

Pesticides were detected in subsurface soil samples and groundwater samples collected from Site 80. However, the TCRA will not address these media for the following reasons: 1) pesticides in subsurface soil and groundwater did not generate unacceptable risks, and 2) removing the pesticide-contaminated surface soil is expected to reduce elevated pesticide concentrations in the subsurface soil and groundwater (i.e., the surface soil appears to be the source of the pesticides detected in the subsurface soil and groundwater).

2.5 Remediation Levels and the Areas of Concern

Because pesticides in surface soil contributed to unacceptable risks, remediation levels were developed based on the current civilian adult worker scenario and a point of departure of 1×10^{-6}. (Appendix A contains the parameters that were used to calculate the remediation levels.) The following table identifies the remediation levels and maximum detected concentrations for the contaminants of concern.

Contaminant of Concern	Remediation Level (ppb)	Maximum Concentration (ppb)
Aldrin	35	49
Dieldrin	37	5,600
4,4'-DDD	2,484	260,000
4,4'-DDT	1,753	40,000
alpha-Chlordane	459	670
gamma-Chlordane	459	640

Based on sampling locations where these pesticides exceeded their remediation levels, areas of concern were identified as shown on Figure 10. In addition, Figure 11 presents a more detailed view

of the area of concern located in the west/northwest area of the site. The horizontal and vertical extents of these areas of concern are not completely defined. As a result, confirmatory soil sampling will be conducted during the execution of the TCRA to ensure that all contaminated soil is collected. For cost estimating purposes, it is assumed that the areas of concern extend horizontally to the limits identified on Figures 10 and 11, and vertically to 1 foot bgs.

2.6 Justification for a TCRA

Pesticide-contaminated surface soil will be addressed by a TCRA for the following reasons:

- Based on the volume of contaminated material, approximately 520 cubic yards, a TCRA should be easy to implement.

- The contaminated surface soil presents an imminent threat to human health and the environment. There are no access restrictions to Site 80 and it continues to serve as an active maintenance area. Therefore, a quick removal action is appropriate.

- When the areas of concern are removed, risk values associated with surface soil exposure will be within acceptable limits determined by the USEPA.

2.7 Scope of the TCRA

The scope of the TCRA encompasses the excavation of pesticide-contaminated surface soil at Site 80 (i.e., the areas of concern identified on Figure 10), and the disposal of this soil at an appropriate treatment/disposal facility.

In order to compare and contrast different costing options, two cost estimates have been compiled for the TCRA. Cost estimate A addresses the remediation of only the west/northwest area of concern (see Figure 11). Cost estimate B addresses all areas of concern at Site 80 (see Figure 10), including the west/northwest area of concern. In addition, two construction schedule estimates, A and B, are presented in Appendix B. This Basis of Design Report, and all specifications included under this design package, apply to the remediation of all areas of concern at Site 80.

3.0 REMEDIAL ACTION WORK BREAKDOWN STRUCTURE

The following sections of this Basis of Design describe the removal action by hazardous, toxic, and radiological waste (HTRW) account numbers, as defined by the Remedial Action Delivery Order Requirements Package Guide, NEESA 20.2-062 of June 1992. In addition, a cost estimate is provided under separate cover and Appendix B presents construction schedule estimates.

33.01 Mobilization and Preparatory Work

Mobilization involves the acquisition, delivery, and setup of equipment, material, and personnel to the work site that are necessary to accomplish the removal action scope of work.

In addition, during the mobilization period, the Contractor shall prepare all necessary pre-construction submittals as described in Section 01010, "General Paragraphs" of the contract specifications. These specifications allow the Contractor up to sixty (60) days to prepare and submit the necessary pre-construction submittals. These submittals include:

- Work Plan
- Environmental Protection Plan
- Site Health and Safety Plan
- Sampling and Analysis Plan

The Contractor shall provide temporary facilities, including an equipment staging area, a decontamination area, a soil stockpile area, and temporary utilities, as necessary to complete the work.

In addition, the Contractor shall be required to coordinate and obtain any necessary construction permits (such as temporary excavation permits) and clearances prior to the start of construction. The Contractor shall also be responsible for coordinating all required inspections by the Base's Public Works Department.

33.02 Monitoring, Sampling, Testing, and Analysis

The Contractor shall be required to submit to LANTDIV for approval a Sampling and Analysis Plan (SAP) describing the proposed sampling, analytical, and quality control procedures for the chemical data collected during the performance of work (see Section 01010, "General Paragraphs" of the contract specifications). The SAP will ensure that all analytical data generated are scientifically accurate and legally defensible. The SAP will describe the quantity, frequency, and location of samples to be collected and analyses to be performed.

The type and quantity of testing shall be based on the requirements set forth in the specifications, the Contractor's Health and Safety Plan (HASP), and the Contractor's Air Monitoring Plan. Additional monitoring, sampling, testing and analyses shall be carried out as required during the project with the approval of the Navy's Technical Representative (NTR).

Soil Sampling

Confirmatory soil samples shall be collected from the floor and sidewalls of each excavation area and analyzed for target compound list (TCL) pesticides. The analyses results will be compared to the pesticide remediation levels to confirm that all contaminated soil has been removed. If analyses results exceed remediation levels, the NTR will be notified. One confirmation sample shall be collected for every 50 feet, or fraction thereof, along each excavation sidewall, and one sample every 500 square feet, or fraction thereof, along the base of the excavation.

Contractor-Generated Waste

Characterization samples shall be collected from all Contractor-generated waste (for example, decontamination fluids and ponded water that may collect in the excavation areas) generated during the removal action. These characterization samples will determine the appropriate transportation and disposal requirements. The samples shall be analyzed for full TCL organics and total analyte list (TAL) metals.

Testing and Analysis

The Contractor shall perform analytical testing of samples collected during removal action activities. The Contractor may consider the use of an on site mobile gas chromatograph to test confirmation samples. The Contractor shall adhere to EPA chain-of-custody procedures during the collection, transport, and analysis of all samples. Laboratory analyses of all samples shall conform with accepted Quality Assurance (QA) requirements. All confirmatory soil samples shall be analyzed with a maximum of 48 hours turnaround time to minimize the amount of time the excavations must remain open.

33.03 Site Work

Site work includes all clearing and grubbing, decontamination/equipment staging area preparation, soil stockpile area preparation (if needed), safety fencing construction, silt fencing construction, and removal of the mobile trailer currently stationed on site.

33.05 Surface Water Collection and Control

The Contractor shall be required to provide devices and facilities as necessary to prevent surface water from contacting contaminated materials (e.g., contaminated equipment) during construction activities, and from flowing off-site. The Contractor shall be required to keep all excavated areas dewatered during construction and to collect, sample, analyze, and dispose of any water accumulated in the excavation and staging areas.

33.07 Air Pollution Collection and Control

Dirt roads and other areas disturbed by remediation operations will be treated with water as a dust suppressant. Use of water shall be minimized to prevent development of mud.

33.08 Solids Collection and Containment

The excavation of contaminated soil shall be performed with earth moving equipment, such as excavators and front-end loaders.

The extent of excavation coincides with the areas of concern defined in Section 2.5. The extent of excavation is also indicated on the design drawings. The estimated in-place volume of contaminated soil that will be excavated is 520 cubic yards. This volume is based on a one-foot depth extending over a 14,000 square foot area. Excavation beyond the designated areas of concern shall only be conducted with NTR approval. If contact is made with the underground leach field located in the west/northwest portion of the site, excavation will immediately stop and the NTR and Activity will be immediately notified.

The excavated soil will be transferred directly into dump trucks for transport to the treatment/disposal facility. However, due to the limited capacity of dump trucks and the quantity of soil that must be excavated, it may be necessary to temporarily store the excavated soil on site. If necessary, excavated soil will be placed in a temporary stockpile area located near the excavation area. The stockpile area will be lined with an impervious sheeting and surrounded by a straw bale berm. The stockpile itself, including the surrounding berm, will be covered with 6 mil reinforced polyethylene sheeting. The edges of the sheeting will be secured with weights to keep it in place.

Once the Contractor has excavated to the specified limits, an on-site analysis consisting of a visual inspection will be performed on the surrounding soil at each excavation area. If the visual inspection reveals evidence of pesticide-contaminated soil, the Contractor will consult with the NTR to determine the extent of additional excavation. When the exposed excavation surfaces do not contain visual evidence of contaminated soil, confirmation samples will be collected and analyzed for TCL pesticides at an on-site mobile laboratory.

Within each excavation area, if the analytical results of confirmation sampling exceed remediation levels, the NTR shall determine the next appropriate action to take. (In case further excavation is required, boring logs are provided in Appendix C. The RI Report [Baker, 1995] contains a more comprehensive collection of boring logs for Site 80.) If the analytical results do not exceed remediation levels, the excavation of soil within that area will be considered complete and site restoration will begin.

General construction debris shall be stockpiled for subsequent disposal at the Base sanitary landfill.

33.09 Liquid, Sediment, and Sludge Collection and Containment

The Contractor shall provide a decontamination pad to collect liquids from the decontamination of personnel and construction equipment. The Contractor shall also collect ponded water that may collect in the excavation areas. The resulting fluids shall be collected for analysis and proper disposal or treatment.

33.14 Thermal Treatment

Thermal treatment of the contaminated soil at an off-site facility is anticipated for this project. This treatment shall be conducted at a permitted hazardous waste facility.

33.19 Disposal (Commercial)

Contaminated soil shall be loaded into approved storage containers that are transportable and leak-proof. The loaded waste shall be manifested by a licensed hazardous waste hauler and transported to an approved, permitted treatment or disposal facility.

Contractor-generated waste (e.g., liquids generated through decontamination procedures) shall be containerized, manifested, and transported to an approved treatment or disposal facility.

33.20 Site Restoration

The excavated areas shall be backfilled with clean backfill material from the borrow area at Camp Lejeune, and regraded to the original contours. Then the excavated areas shall be revegetated.

33.21 Demobilization

All temporary facilities, equipment, and supplies acquired for this contract shall be decontaminated and removed from the site upon completion of the remedial action.

Post-construction submittals shall include: 1) a punch list showing correction of all listed items; 2) a letter from the Contractor certifying completion of all contracted work in accordance with the

contract conditions, applicable regulations, and standards of practice; 3) a completed project current condition with an as-built survey for the entire site; 4) submittal, in one collated document, of all quality control daily reports, samples, results of the sample analyses, corrective actions (if required, taken to correct unacceptable deviations from required quality standards), results of corrective actions; problems encountered and resolved, and lessons learned; and, 5) submittal in one collated document of all quality assurance samples, sample analyses results, and corrective actions (if required, taken to correct unacceptable deviations from required quality standards).

The Contractor shall submit a detailed report summarizing the removal action, lessons learned, and recommendations for inclusion in future similar contracts.

4.0 REFERENCES

Baker Environmental, Inc. 1995. Remedial Investigation Report, Operable Unit No. 11 (Site 80), Marine Corps Base, Camp Lejeune, North Carolina. Draft. Prepared for the Department of the Navy, Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia.

Baker Environmental, Inc. 1994. Remedial Investigation/Feasibility Study Project Plans for Operable Units Numbers 8, 11, and 12 (Sites 16, 7, 80, and 3), Marine Corps Base, Camp Lejeune, North Carolina. Final. Prepared for the Department of the Navy, Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia.

Haliburton, NUS, 1991. Preliminary Draft Site Inspection Report for Site 80 Paradise Point Golf Course. Marine Corps Base, Camp Lejeune, North Carolina.

Naval Energy and Environmental Support Activity (NEESA), and Naval Facilities Engineering Command Contractor's Office, June 1992. Remedial Action Contracts Delivery Order Requirements Package Guide, Parts 1 and 2. NEESA 20.2-062.

TABLES

TABLE 1

SUMMARY OF PESTICIDES DETECTED DURING THE HALLIBURTON, NUS INVESTIGATION, 1991 OPERABLE UNIT NO. 11 (SITE 80) MCB, CAMP LEJEUNE, NORTH CAROLINA

Contaminant	Surface Soil (0-6 inches)		Near Subsurface Soil (0-2 feet)		Subsurface Soil (3-17 feet)	
	No. of Positive Detections/ No. of Samples	Range of Positive Detections	No. of Positive Detections/ No. of Samples	Range of Positive Detections	No. of Positive Detections/ No. of Samples	Range of Positive Detections
Aldrin	0/3	ND	1/7	6.8-220	0/7	ND
alpha-Chlordane	0/3	ND	1/7	60	0/7	ND
4,4'-DDD	1/3	ND	3/7	20-700	0/7	ND
4,4'-DDE	0/3	ND	5/7	16-210	0/7	ND
4,4'-DDT	0/3	ND	4/7	15-290	0/7	ND
Dieldrin	0/3	ND	4/7	16-440	0/7	ND

Notes:

ND - Not detected.
Reference: Halliburton/NUS, 1991

TABLE 2

SUMMARY OF PESTICIDES DETECTED DURING THE RI
OPERABLE UNIT NO. 11 (SITE 80)
MCB, CAMP LEJEUNE, NORTH CAROLINA

Media	Contaminant	Site Contamination				
		Min.	Max.	Max. Concentration Location	Detection Frequency	Distribution
Surface Soil		(µg/kg)	(µg/kg)			
	Aldrin	5.4	49	80-DPA-SB10-00	7/55	Lawn Area and Open Area, Northwest Area
	Heptachlor Epoxide	2.7J	9.9	80-DPA-SB05-00	2/55	Open Area, Northwest Area
	Dieldrin	1.1J	5,600	80-DPA-SB10-00	38/55	Widespread, Northwest Area
	4,4'-DDE	0.6J	1,500J	80-MW04-00	45/55	Widespread, Northwest Area
	4,4'-DDD	1.5J	260,000	80-DPA-SB03-00	41/55	Widespread, Northwest Area
	4,4'-DDT	1.3J	40,000	80-MW04-00	44/55	Widespread, Northwest Area
	Endrin Ketone	7.7J	7.7J	80-LA-SB07-00	1/55	Lawn Area
	Endrin Aldehyde	5.2J	5.2J	80-DPA-SB05-00	1/55	Northwest Area
	alpha-Chlordane	0.82J	670J	80-DPA-SB10-00	29/55	Scattered, Northwest Area
	gamma-Chlordane	1.2J	640J	80-DPA-SB10-00	22/55	Scattered, Northwest Area
Subsurface Soil	Aldrin	2.6	2.6	80-LA-SB04-06	1/45	Lawn Area
	Dieldrin	0.73J	1.4J	80-OA-SB02-07	4/45	Drum Area, Open Area, Soil Mounds
	4,4'-DDE	1.4J	35	80-0A-SB02-07	7/45	Open Area, Soil Mounds, Northwest
	4,4'-DDD	1.1J	510J	80-MW-04-06	12/45	Lawn Area, Drum Area, Open Area, Soil Mounds, Northwest
	4,4'-DDT	4.7	240	80-MW-04-06	9/45	Lawn Area, Open Area, Northwest
Groundwater		(µg/L)	(µg/L)			
	4,4'-DDD	2.2J	2.2J	80-MW04-01	1/9	Northwest Area
	4,4'-DDT	0.58J	0.58J	80-MW04-01	1/9	Northwest Area

Notes:

J = estimated value
µg/Kg = microgram per kilogram (ppb)
µg/L = microgram per liter (ppb)
Reference: Baker, 1995

FIGURES

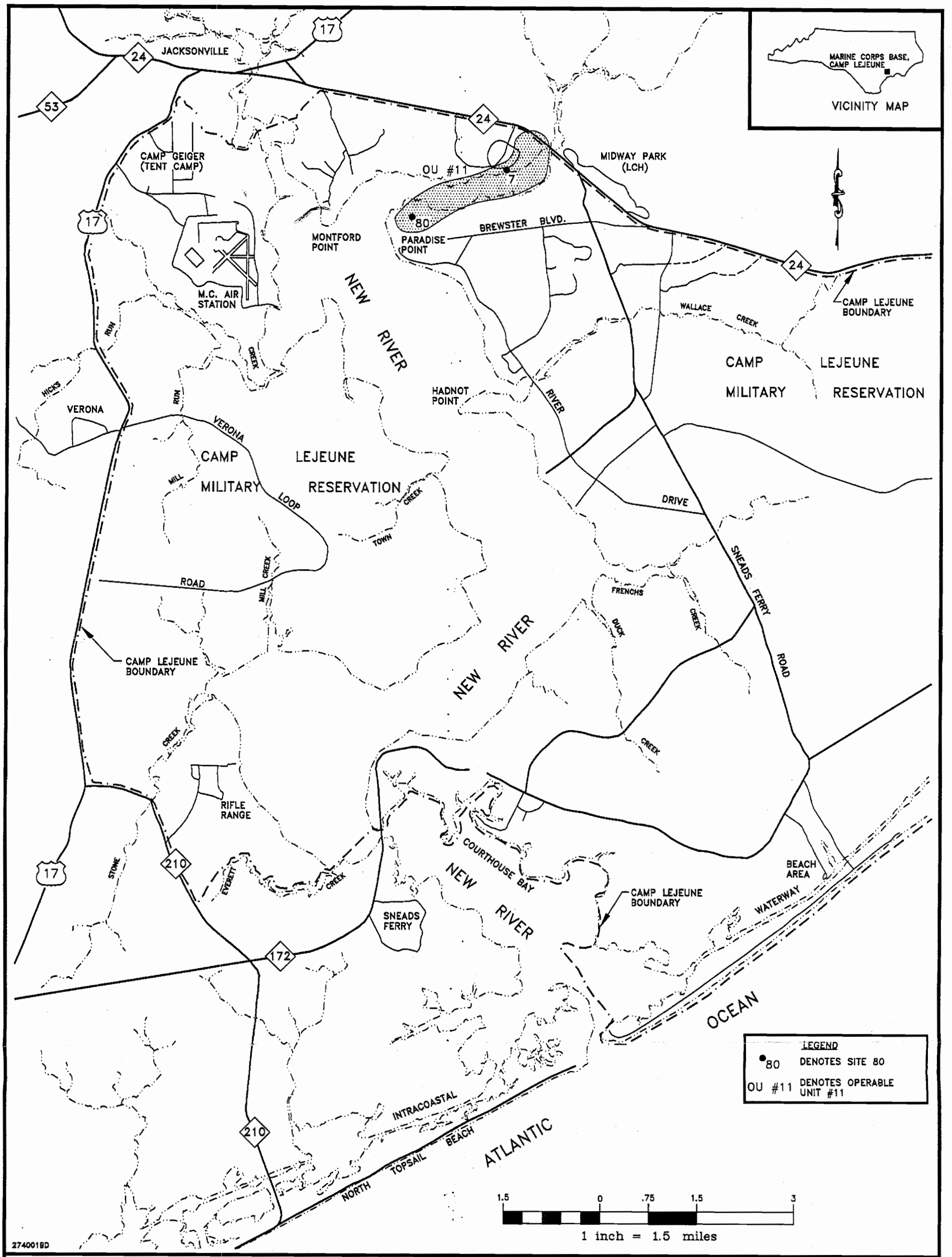

FIGURE 1
OPERABLE UNIT NO. 11 (SITES 7 AND 80)
MARINE CORPS BASE, CAMP LEJEUNE

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

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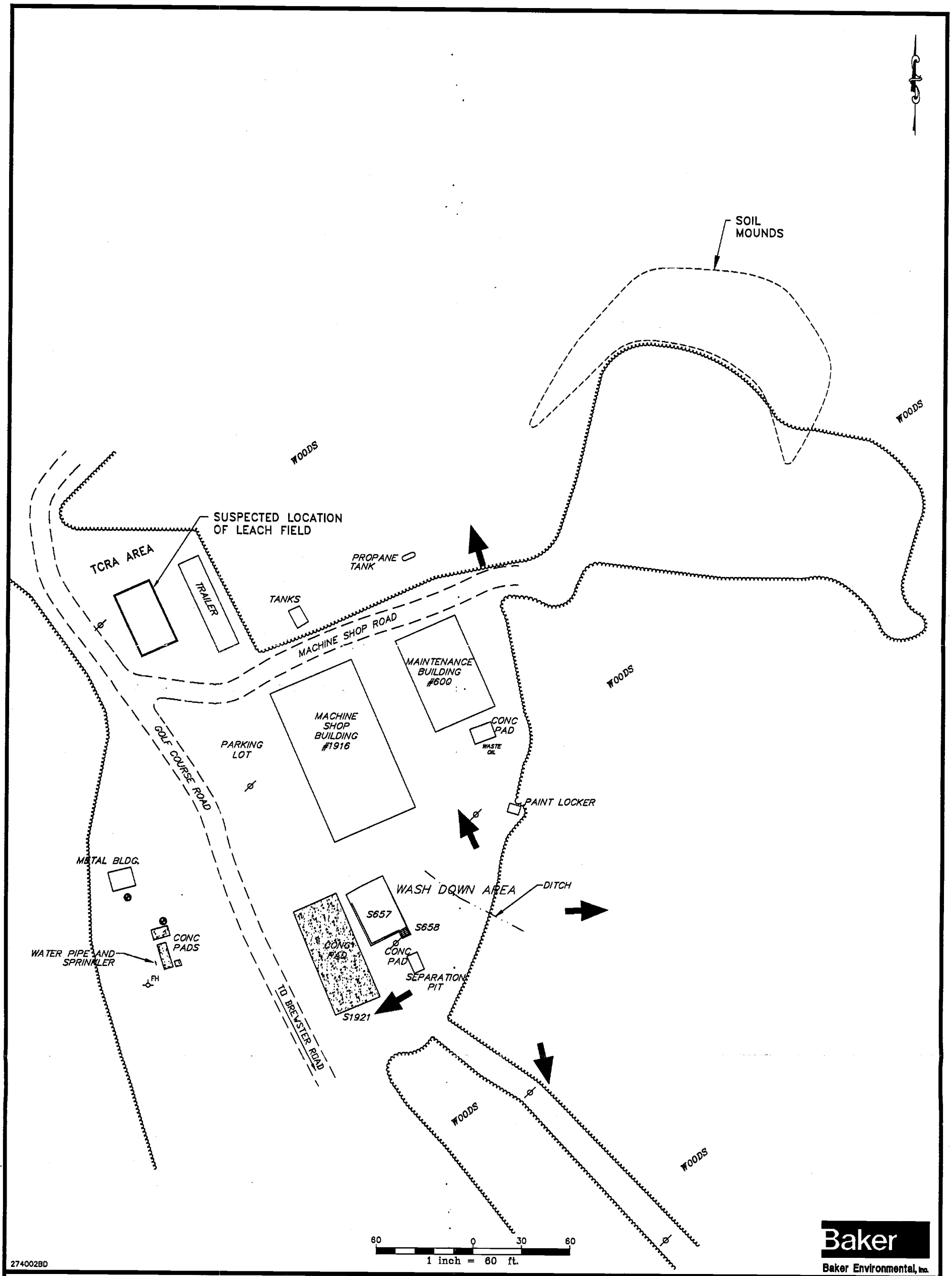


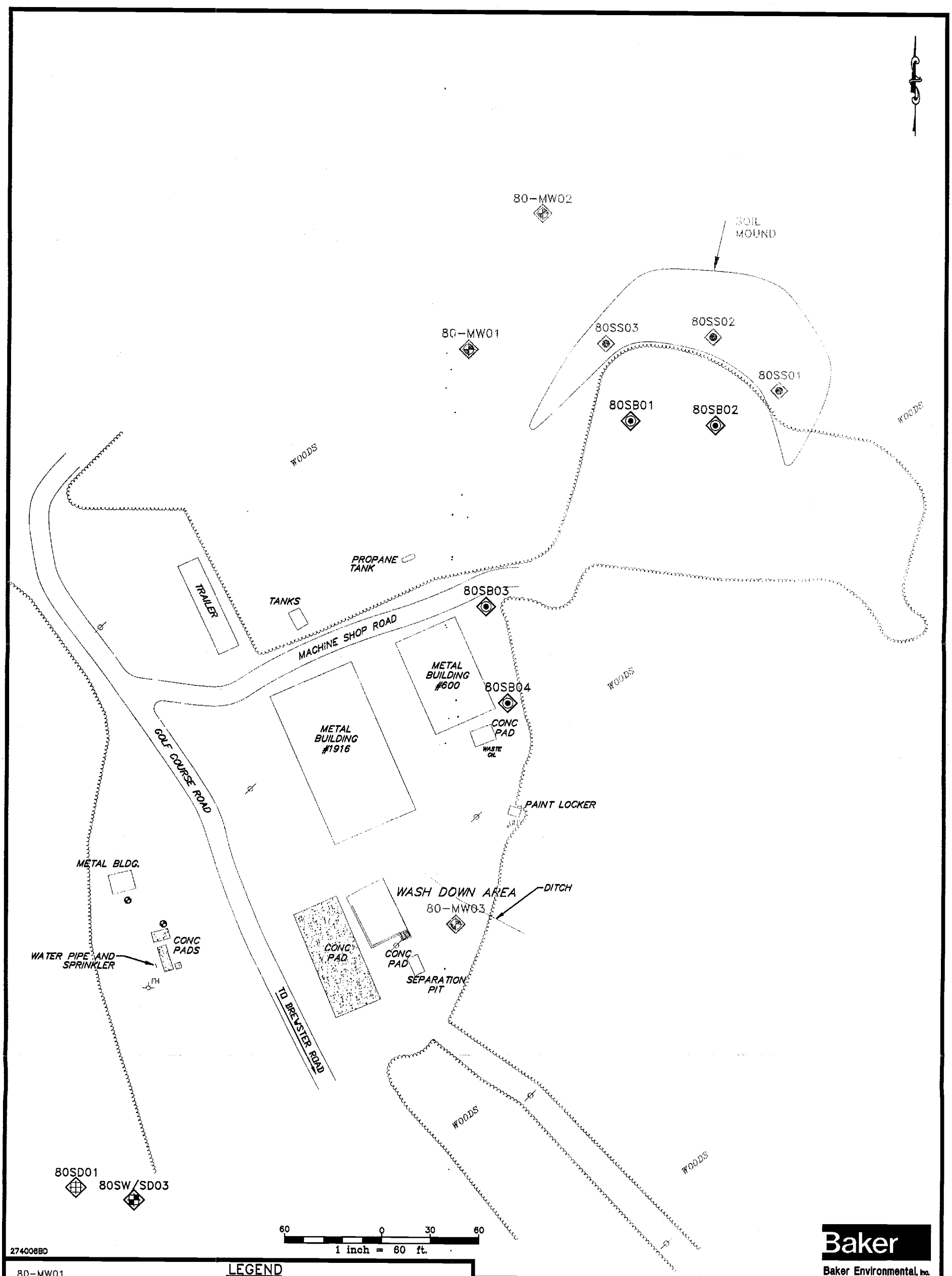
LEGEND

- APPROXIMATE DIRECTION OF SHALLOW GROUNDWATER FLOW
- UNIMPROVED ROAD
- TREELINE
- FH FIRE HYDRANT
- UTILITY POLE

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 2
SITE MAP
SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



Baker

Baker Environmental, Inc.

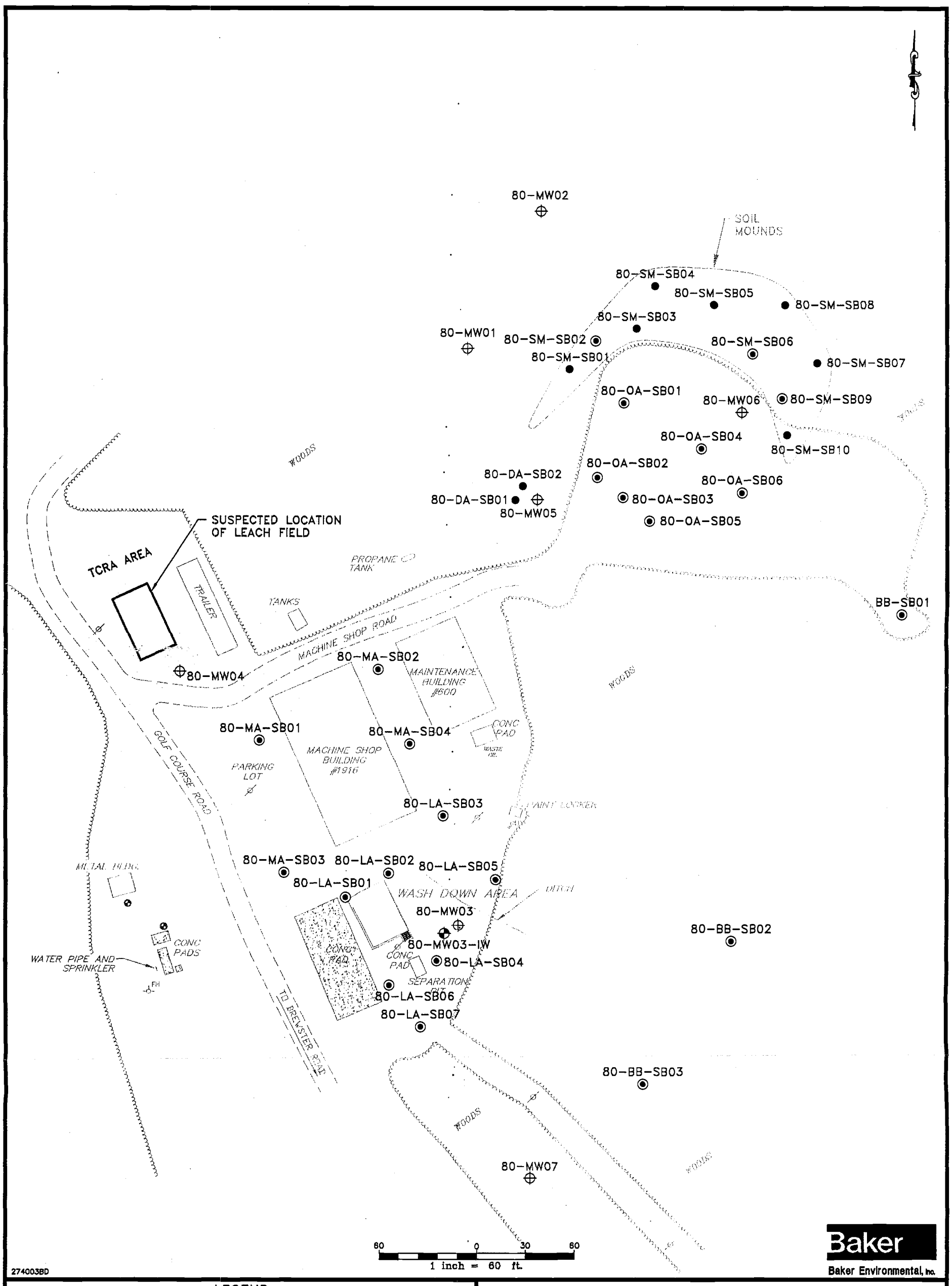
LEGEND

80-MW01	SHALLOW MONITORING WELL
80SB01	SOIL BORING
80SS01	SURFACE SOIL SAMPLE
80SD01	SEDIMENT SAMPLE
80SW/SD03	SURFACE WATER/SEDIMENT SAMPLE

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 3
PREVIOUS INVESTIGATION SAMPLING LOCATIONS
SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP, LEJEUNE
NORTH CAROLINA



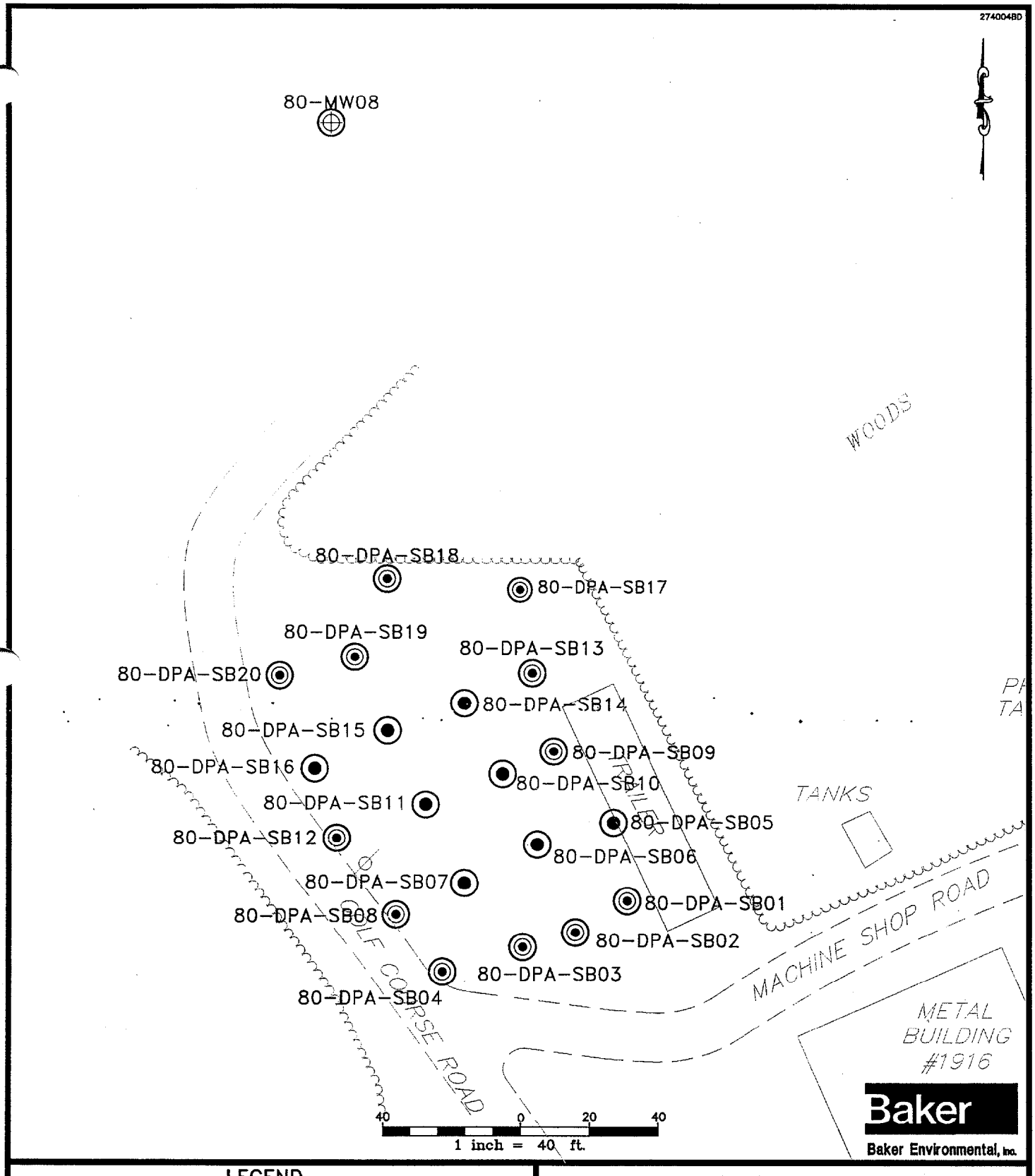
LEGEND

80-MW04	SHALLOW MONITORING WELL LOCATION
80-MW03IW	INTERMEDIATE MONITORING WELL LOCATION
80-MA-SB01	SOIL BORING LOCATION
80-DA-SB01	SURFACE SOIL BORING LOCATION

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 4
REMEDIAL INVESTIGATION SAMPLING LOCATIONS
SITE 80 – PARADISE POINT
GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP, LEJEUNE
NORTH CAROLINA



LEGEND

- 80-MW08 — SHALLOW MONITORING WELL LOCATION
- 80-DPA-SB01 — SOIL BORING LOCATION
- 80-DPA-SB05 — SURFACE SOIL SAMPLE LOCATION

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 5
ADDITIONAL REMEDIAL INVESIGATION SAMPLING LOCATIONS IN THE WEST/NORTHWEST AREA SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLNA

SAMPLE:	80-0A-SB01-00
Dieldrin	6.3
4,4'-DDE	26
4,4'-DDD	6.4
4,4'-DDT	2.1 J
alpha-Chlordane	2.1

SAMPLE:	80-0A-SB04-00
4,4'-DDE	0.6 J

SAMPLE:	80-0A-SB03-00
Aldrin	5.5 J
Dieldrin	50
4,4'-DDE	36
4,4'-DDD	31
4,4'-DDT	2.2 J
alpha-Chlordane	4.8
gamma-Chlordane	4.9

SAMPLE:	80-0A-SB02-00
Aldrin	15
Heptachlor epoxide	2.7 J
Dieldrin	480
4,4'-DDE	80
4,4'-DDD	20
4,4'-DDT	8.3
alpha-Chlordane	27
gamma-Chlordane	21

SAMPLE:	80-DA-SB02-00
Dieldrin	17 J
4,4'-DDE	7.4 J
4,4'-DDT	4.4 J

SAMPLE:	80-MW05-00
Dieldrin	99 J
4,4'-DDE	81
4,4'-DDD	3.9 J
4,4'-DDT	53

SAMPLE:	80-DA-SB01-00
Dieldrin	8.6
4,4'-DDE	11
4,4'-DDT	6.4

SAMPLE:	80-MW04-00
4,4'-DDE	1500 J
4,4'-DDD	87000
4,4'-DDT	40000

SAMPLE:	80-MA-SB01-00
4,4'-DDE	89
4,4'-DDT	88

SAMPLE:	80-MA-SB03-00
4,4'-DDE	210
4,4'-DDD	8.6 J
4,4'-DDT	450
gamma-Chlordane	2.9

SAMPLE:	80-LA-SB02-00
Dieldrin	60
4,4'-DDE	240
4,4'-DDD	780
4,4'-DDT	33

SAMPLE:	80-LA-SB01-00
Aldrin	18
Dieldrin	29
4,4'-DDE	69
4,4'-DDD	62
4,4'-DDT	5.7
alpha-Chlordane	32
gamma-Chlordane	31

SAMPLE:	80-LA-SB06-00
Dieldrin	38
4,4'-DDE	110
4,4'-DDD	7.6 J
4,4'-DDT	110
alpha-Chlordane	4.3 J
gamma-Chlordane	2.2 J

SAMPLE:	80-LA-SB07-00
Dieldrin	20
4,4'-DDE	620
4,4'-DDD	17 J
4,4'-DDT	100
Endrin ketone	7.7 J

SAMPLE:	80-LA-SB04-00
Aldrin	11
Dieldrin	630 J
4,4'-DDE	130
4,4'-DDD	24
4,4'-DDT	29
alpha-Chlordane	92 J
gamma-Chlordane	91 J

SAMPLE:	80-MW07-00
4,4'-DDE	21
4,4'-DDT	6.7

SAMPLE:	80-SM-SB04-00
4,4'-DDE	0.9 J
4,4'-DDT	1.3 J

SAMPLE:	80-SM-SB08-00
Dieldrin	1.1 J
4,4'-DDE	2.7 J
4,4'-DDD	1.7 J
4,4'-DDT	1.5 J

SAMPLE:	80-SM-SB07-00
alpha-Chlordane	0.82 J

SAMPLE:	80-SM-SB10-00
Dieldrin	2 J
4,4'-DDE	2.9 J
4,4'-DDD	1.5 J

SAMPLE:	80-MW06-00
Dieldrin	7.2 J
4,4'-DDE	37
4,4'-DDD	15
alpha-Chlordane	24
gamma-Chlordane	20 J

SAMPLE:	80-0A-SB06-00
Dieldrin	21
4,4'-DDE	13
4,4'-DDT	1.6 J
alpha-Chlordane	5
gamma-Chlordane	4.2

SAMPLE:	80-0A-SB05-00
4,4'-DDD	12
4,4'-DDT	5.9

SAMPLE:	80-BB-SB01-00
Dieldrin	1.1 J
4,4'-DDE	14
4,4'-DDD	2.2 J
4,4'-DDT	8.1

SAMPLE:	80-MA-SB02-00
Dieldrin	84
4,4'-DDE	470
4,4'-DDD	510
4,4'-DDT	79
alpha-Chlordane	27
gamma-Chlordane	18 J

SAMPLE:	80-MA-SB04-00
Dieldrin	69 J
4,4'-DDE	280 J
4,4'-DDD	610 J
4,4'-DDT	870 J
alpha-Chlordane	30 J
gamma-Chlordane	15 J

SAMPLE:	80-LA-SB03-00
Dieldrin	300
4,4'-DDE	740
4,4'-DDD	650
4,4'-DDT	210
alpha-Chlordane	130 J
gamma-Chlordane	100 J

SAMPLE:	80-LA-SB05-00
Dieldrin	58 J
4,4'-DDE	68 J
4,4'-DDD	2.1 J
4,4'-DDT	13 J
alpha-Chlordane	3.7 J
gamma-Chlordane	1.2 J

SAMPLE:	80-BB-SB02-00
4,4'-DDE	3.1 J
4,4'-DDT	1 J

SAMPLE:	80-MW031W-00
Dieldrin	370 J
4,4'-DDE	73
4,4'-DDD	16 J
alpha-Chlordane	68
gamma-Chlordane	54

SAMPLE:	80-BB-SB03-00
Dieldrin	1 J
4,4'-DDE	34 J
4,4'-DDD	1.4 J
4,4'-DDT	19

80-MW02, 80-MW04, 80-MW05, 80-MW06, 80-MW07, 80-MW03, 1932-MW02, 80-MW03-W, 80-SM-SB01, 80-SM-SB02, 80-SM-SB03, 80-SM-SB04, 80-SM-SB05, 80-SM-SB06, 80-SM-SB07, 80-SM-SB08, 80-SM-SB09, 80-SM-SB10, 80-0A-SB02, 80-0A-SB03, 80-0A-SB04, 80-0A-SB05, 80-0A-SB06, 80-DA-SB01, 80-DA-SB02, 80-MA-SB01, 80-MA-SB02, 80-MA-SB03, 80-MA-SB04, 80-LA-SB01, 80-LA-SB02, 80-LA-SB03, 80-LA-SB04, 80-LA-SB05, 80-LA-SB06, 80-LA-SB07, 80-BB-SB01, 80-BB-SB02, 80-BB-SB03

SOIL MOUND; WOODS; METAL BUILDING #500; METAL BUILDING #1916; CONC PAD; PAINT LOCKER; WASH DOWN AREA; CONC PADS; WATER PIPE AND SPRINKLER; SEPARATIONS; TO BREWSTER ROAD; TRAILER; PROPANE TANK; METAL BLDG

80 0 40 80
1 inch = 80 ft.

Baker
Baker Environmental, Inc.

274009BD

LEGEND

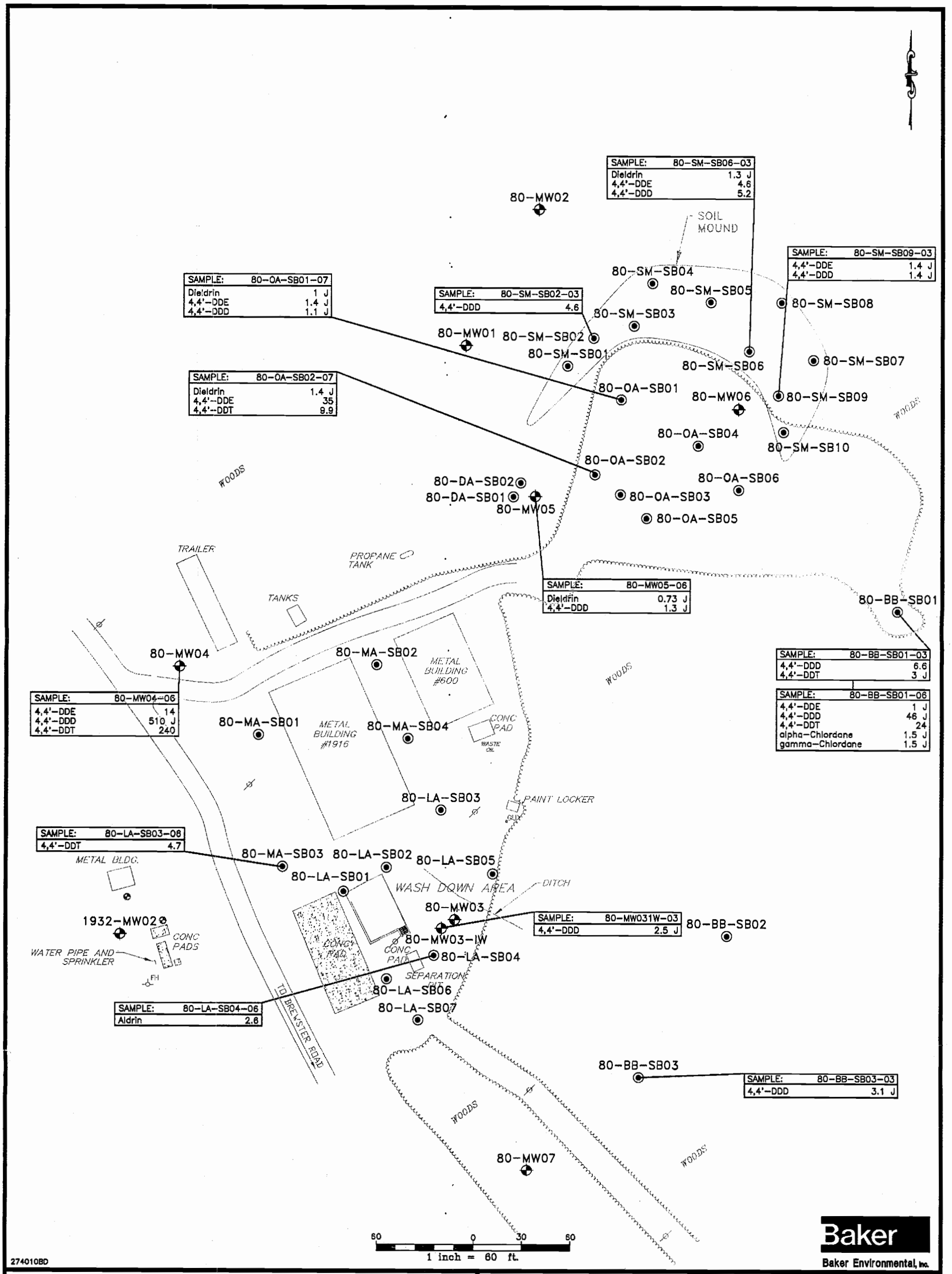
80-MW01 MONITORING WELL LOCATION

80-0A-SB01 SOIL BORING LOCATION

NOTE:
-SAMPLE CONCENTRATIONS SHOWN IN MICROGRAMS PER KILOGRAM (ug/kg).
SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 6
POSITIVE DETECTIONS OF PESTICIDES IN SURFACE SOIL
SITE 80 - POINT GOLF COURSE MAINTENANCE AREA
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

01722DDB2Z



LEGEND

80-MW01 MONITORING WELL LOCATION

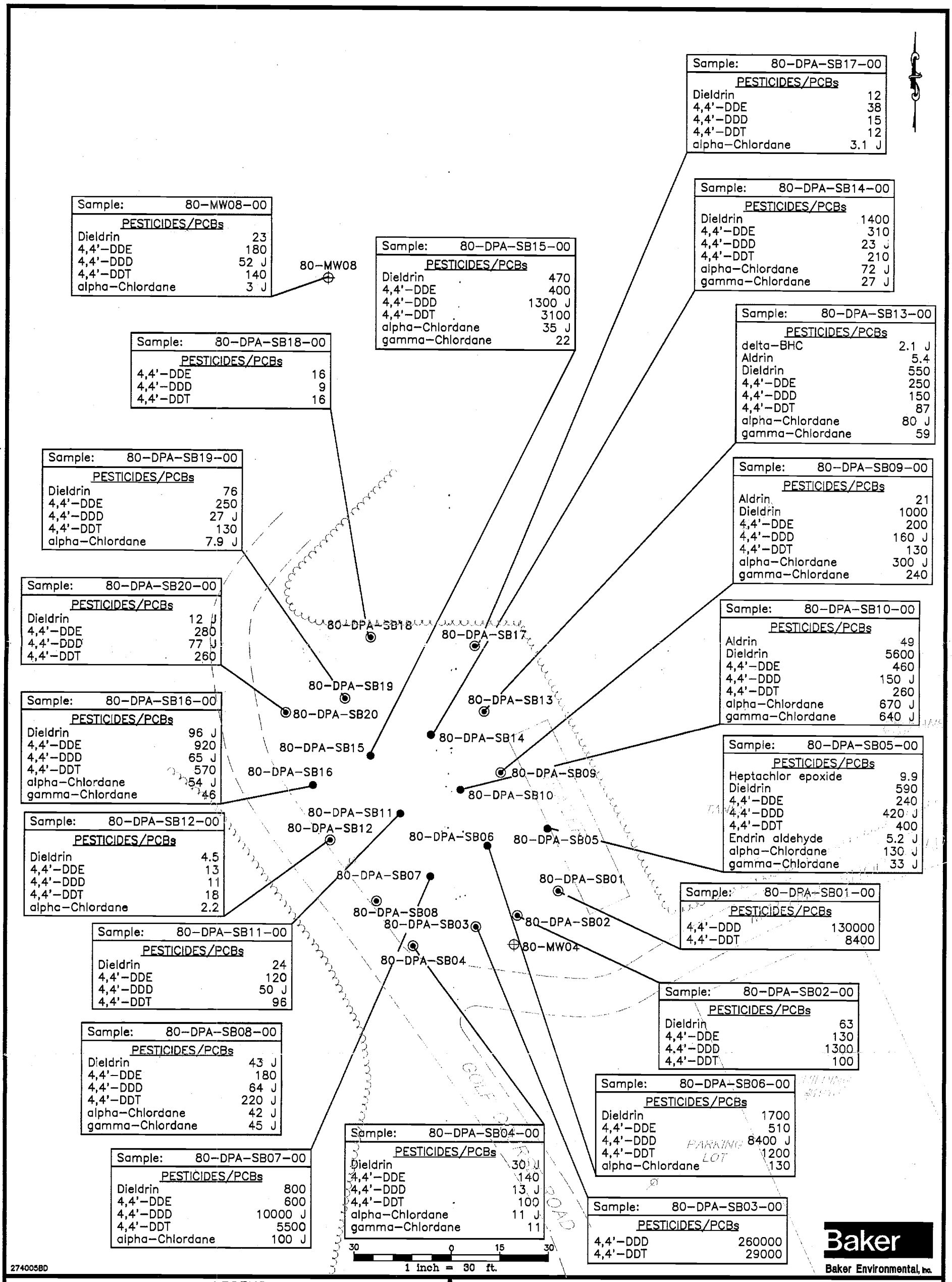
80-0A-SB01 SOIL BORING LOCATION

NOTE:
-SAMPLE CONCENTRATIONS SHOWN IN MICROGRAMS PER KILOGRAM (ug/kg).

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 7
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOIL SITE 80 – POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP, LEJEUNE
NORTH CAROLINA



LEGEND

80-MW08 ⊕ SHALLOW MONITORING WELL LOCATION

80-DPA-SB01 ◉ SOIL BORING LOCATION

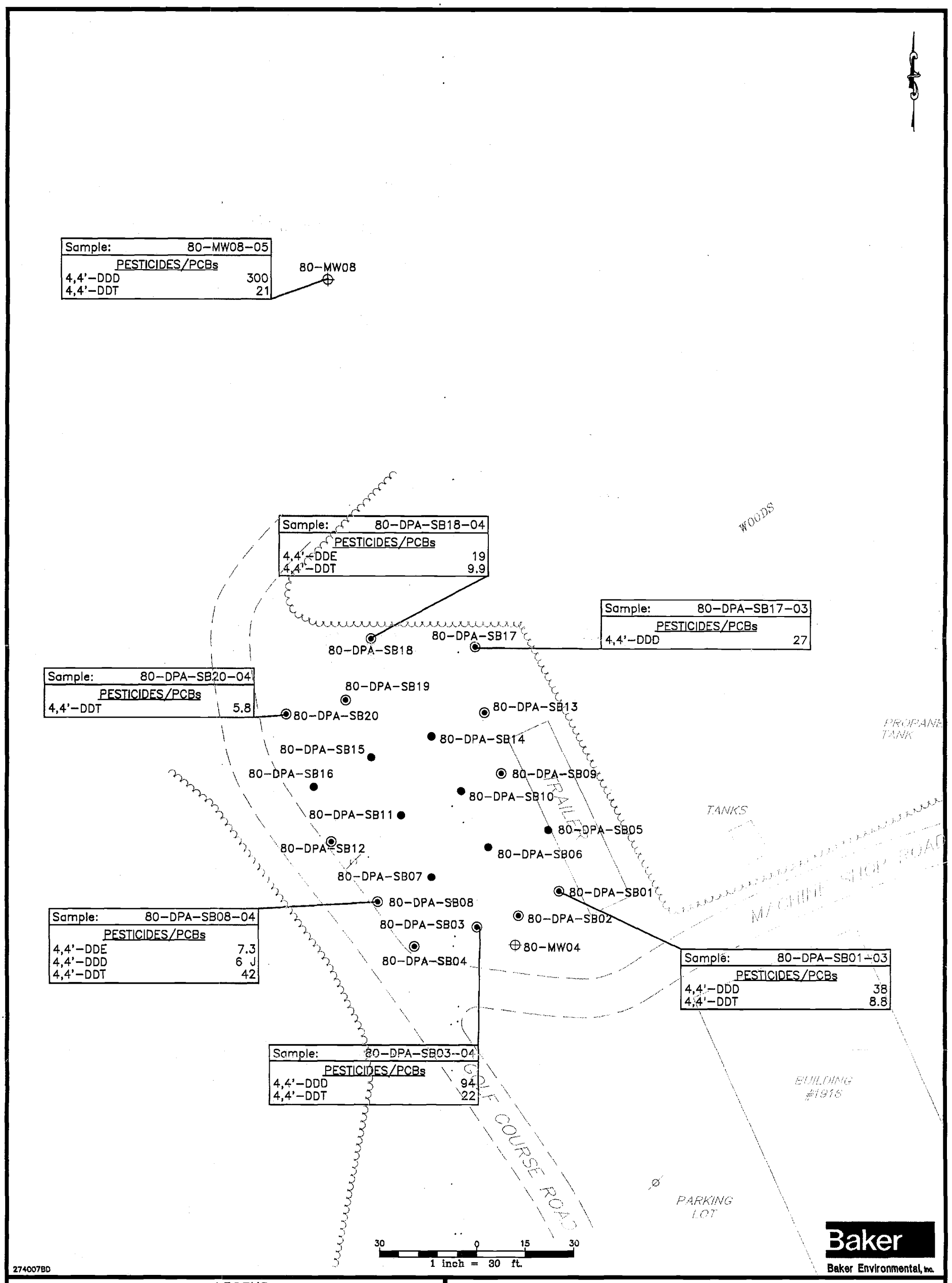
80-DPA-SB05 ● SURFACE SOIL BORING LOCATION

NOTE:
-SAMPLE CONCENTRATIONS SHOWN IN MICROGRAMS PER KILOGRAM (ug/kg).

SOURCE: LANTDIV, OCT. 1991

FIGURE 8
POSITIVE DETECTIONS OF PESTICIDES IN SURFACE SURFACE SOIL IN THE WEST/NORTHWEST AREA SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



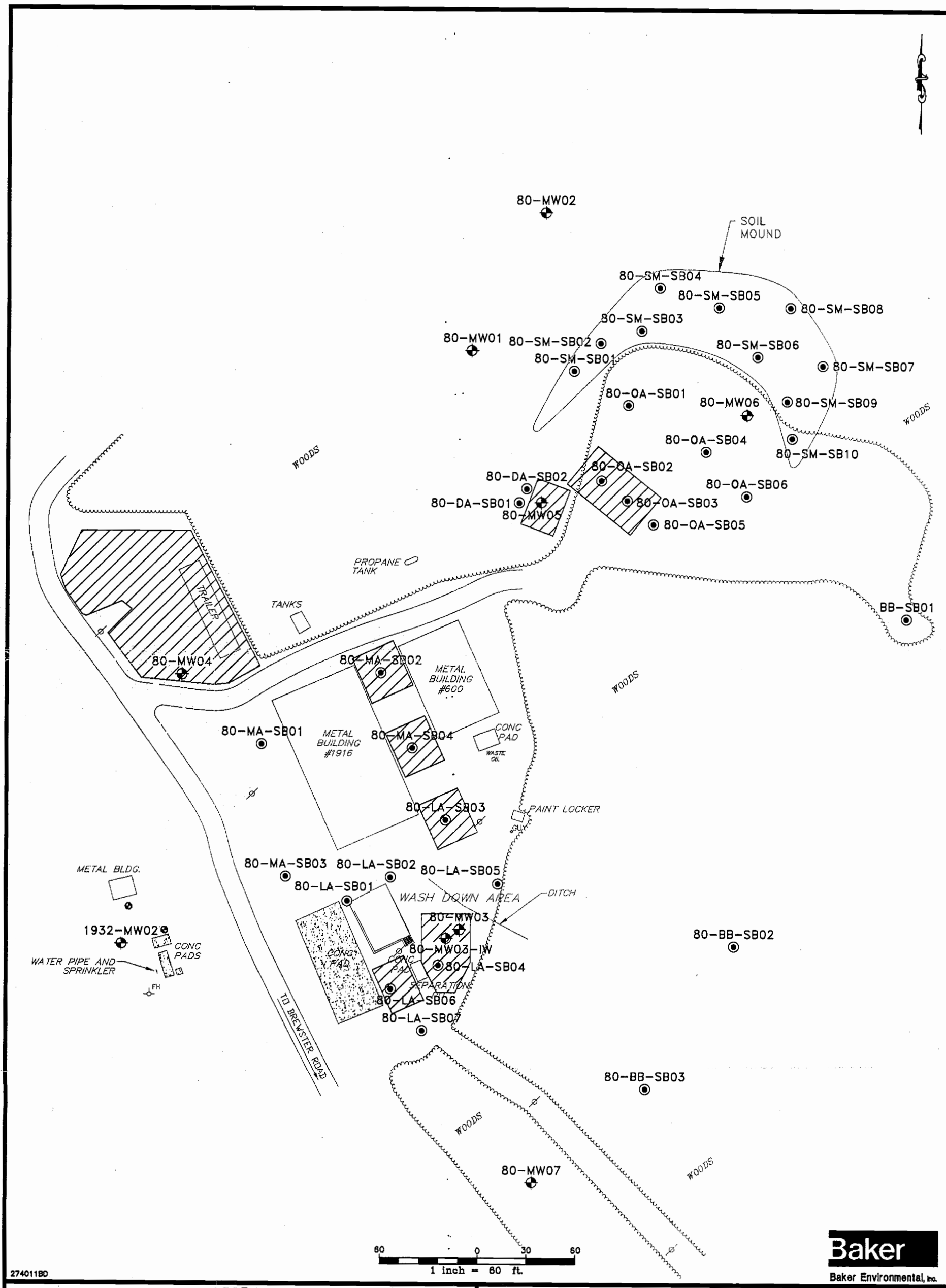
LEGEND

- 80-MW08 — SHALLOW MONITORING WELL LOCATION
- 80-DPA-SB01 — SOIL BORING LOCATION
- 80-DPA-SB05 — SURFACE SOIL BORING LOCATION

NOTE:
-SAMPLE CONCENTRATIONS SHOWN IN MICROGRAMS PER KILOGRAM (ug/kg).

SOURCE: LANTDIV, OCT. 1991

FIGURE 9
POSITIVE DETECTIONS OF PESTICIDES IN SUBSURFACE SOIL IN THE WEST/NORTHWEST AREA
SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



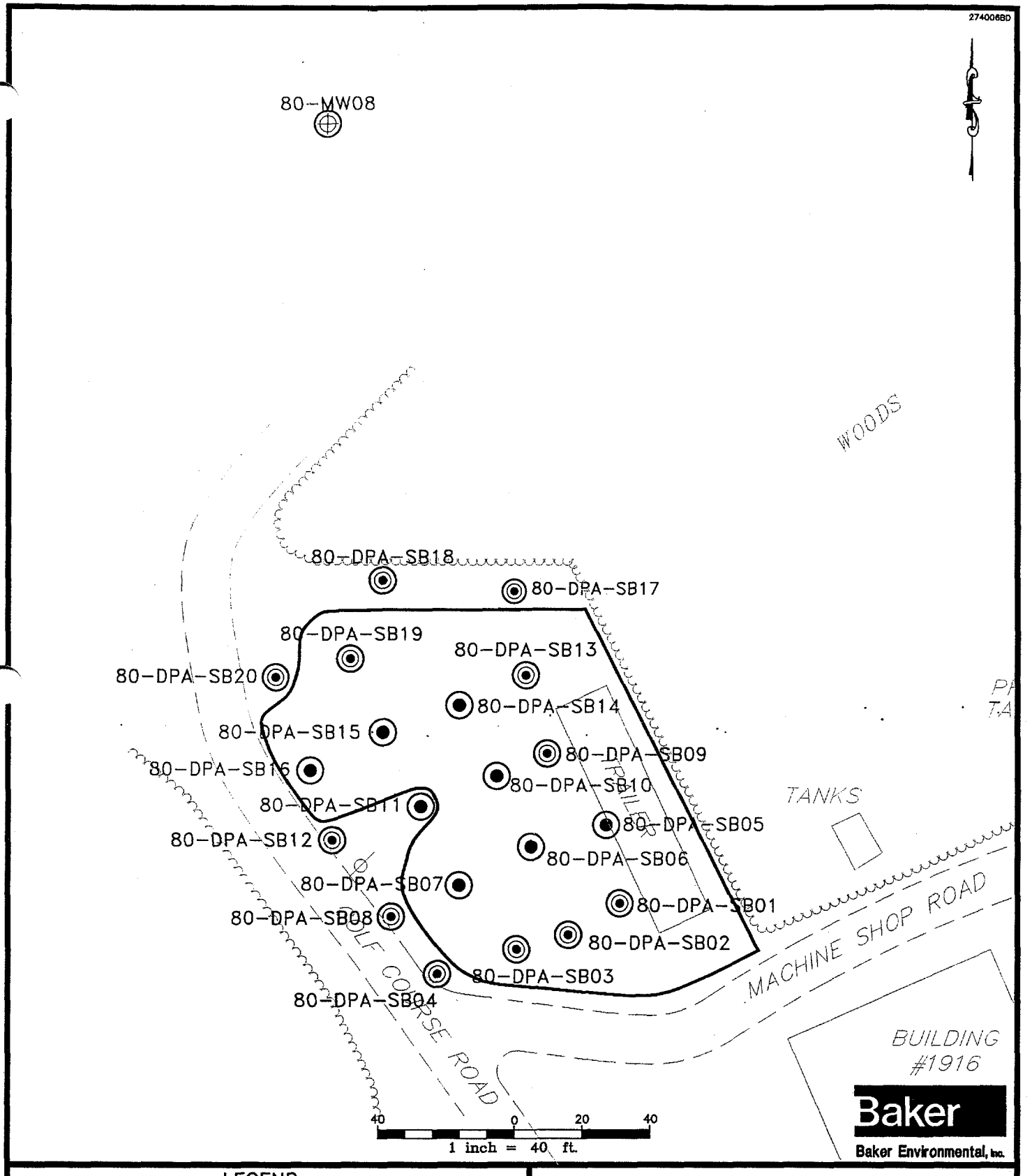
LEGEND

- 80-MW01 — MONITORING WELL LOCATION
- 80-MA-SB01 — SOIL BORING LOCATION
- AREA OF CONCERN

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 10
AREAS OF CONCERN
SITE 80 – PARADISE POINT
GOLF COURSE MAINTENANCE AREA

MARINE CORPS BASE, CAMP, LEJEUNE
NORTH CAROLINA



LEGEND

80-MW08 — SHALLOW MONITORING WELL LOCATION

80-DPA-SB01 — SOIL BORING LOCATION

80-DPA-SB05 — SURFACE SOIL SAMPLE LOCATION

EXTENT OF AREA OF CONCERN

SOURCE: W.K. DICKSON & CO., INC., JANUARY 1995

FIGURE 11
AREA OF CONCERN IN THE WEST/NORTHWEST AREA
SITE 80 – PARADISE POINT GOLF COURSE MAINTENANCE AREA
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLNA

APPENDIX A
REMEDIATION LEVEL ESTIMATIONS

INGESTION OF [illegible]REMEDIATION LEVEL
FEASABILITY STUDY CTO-0274
OPERABLE UNIT NO. 11 (SITE 80)
MCB CAMP LEJEUNE
CURRENT CIVILIAN EMPLOYEE

C = TR or THI * BW * ATc or ATnc * DY / EF * ED * IR * CF * FI * CSF or 1/RfD

Where:	INPUTS
C = contaminant concentration in soil (ug/kg)	Calculated
TR = total lifetime carcinogenic risk (unitless)	1E-06
THI = total hazard index (unitless)	1
CF = conversion for kg to mg	1E-06
EF = exposure frequency (days/yr)	250
ED = exposure duration (yr)	25
IR = soil ingestion rate (mg/day)	480
CSF = carcinogenic slope factor	specific
RfD = reference dose	specific
FI = fraction ingested from source	100
BW = body weight (kg)	70
ATc = averaging time for carcinogen (yr)	70
ATnc = averaging time for noncarcinogen (yr)	25
DY = days per year (days/year)	365

Note: Inputs are scenario and site specific

Contaminant	Concentration Carcinogen (ug/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Carc Time (years)	Conversion Factor (kg/mg)	Days per year (days/yr)	Lifetime Cancer Risk	Slope Factor (mg/kg/day)-1	Fraction Ingested From Source
Dieldrin	37	250	25	480	70	70	1E-06	365	1E-06	1.60E+01	1
4,4'-DDD	2484	250	25	480	70	70	1E-06	365	1E-06	2.40E-01	1
4,4'-DDT	1753	250	25	480	70	70	1E-06	365	1E-06	3.40E-01	1
Aldrin	35	250	25	480	70	70	1E-06	365	1E-06	1.70E+01	1
alpha-chlordane	459	250	25	480	70	70	1E-06	365	1E-06	1.30E+00	1
gamma-chlordane	459	250	25	480	70	70	1E-06	365	1E-06	1.30E+00	1
Arsenic	397	250	25	480	70	70	1E-06	365	1E-06	1.50E+00	1
Beryllium	139	250	25	480	70	70	1E-06	365	1E-06	4.30E+00	1

Contaminant	Concentration Noncarcinogen (ug/kg)	Exposure Frequency (days/yr)	Exposure Duration (yr)	Ingestion Rate (mg/day)	Body Weight (kg)	Average Noncarc Time (years)	Conversion Factor (kg/mg)	Days per year (days/yr)	Hazard Index	Reference Dose (mg/kg/day)	Fraction Ingested From Source
Dieldrin	10646	250	25	480	70	25	1E-06	365	1	5.00E-05	1
4,4'-DDD	0	250	25	480	70	25	1E-06	365	1	--	1
4,4'-DDT	106458	250	25	480	70	25	1E-06	365	1	5.00E-04	1
Aldrin	6388	250	25	480	70	25	1E-06	365	1	3.00E-05	1
alp[ha-chlordane	12775	250	25	480	70	25	1E-06	365	1	6.00E-05	1
gamma-chlordane	12775	250	25	480	70	25	1E-06	365	1	6.00E-05	1
Arsenic	63875	250	25	480	70	25	1E-06	365	1	3.00E-04	1
Beryllium	1064583	250	25	480	70	25	1E-06	365	1	5.00E-03	1

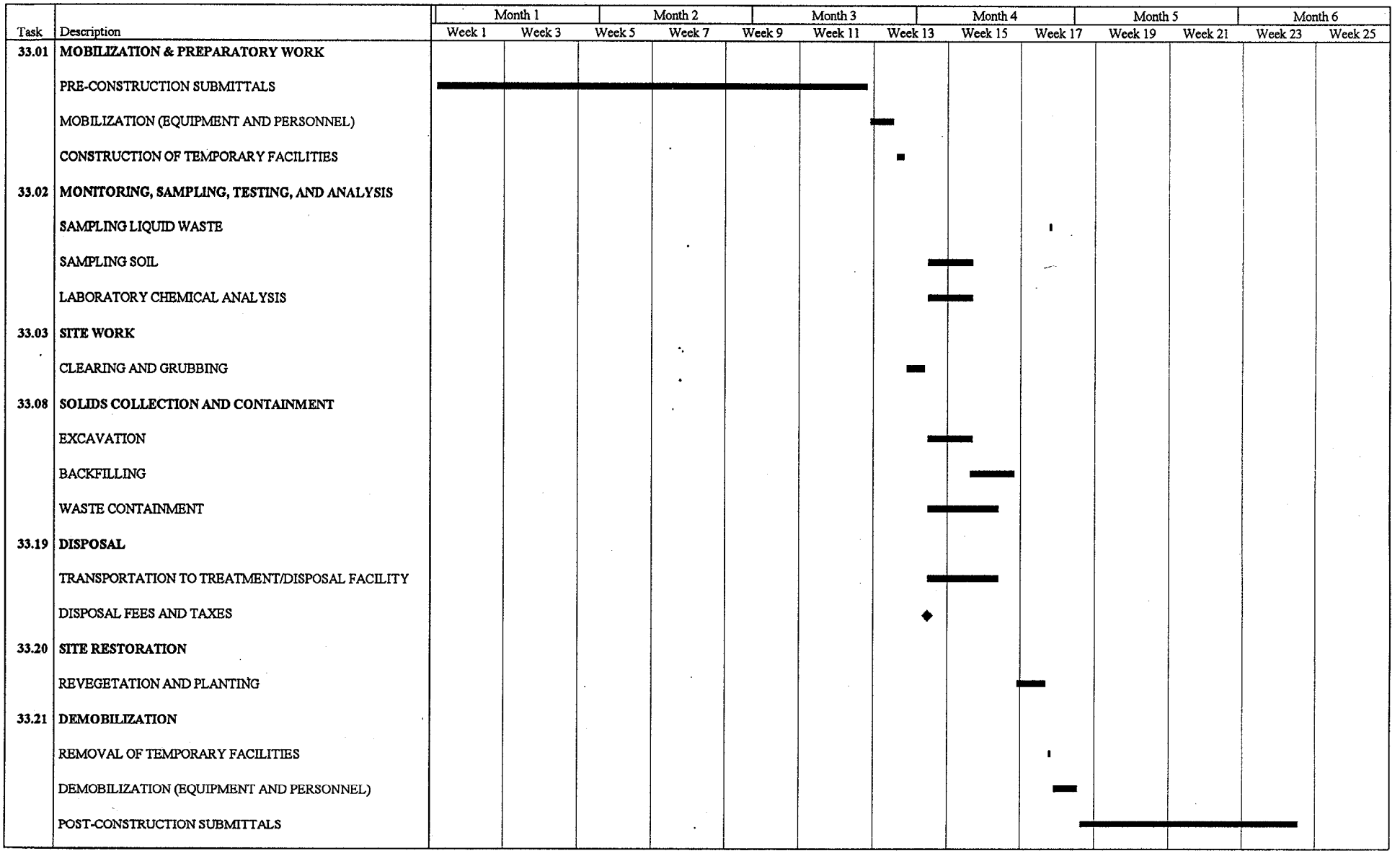
File Name: SIC.WQ1

APPENDIX B
CONSTRUCTION SCHEDULE ESTIMATES

CONSTRUCTION SCHEDULE ESTIMATE A
REMEDIATION OF PESTICIDE - CONTAMINATED SOIL IN THE WEST/NORTHWEST AREA
OPERABLE UNIT NO. 11 (SITE 80)

Task	Description	Month 1		Month 2		Month 3		Month 4		Month 5		Mo
		Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 17	Week 19	Week 21	Week 23
33.01	**MOBILIZATION & PREPARATORY WORK**												
	PRE-CONSTRUCTION SUBMITTALS												
	MOBILIZATION (EQUIPMENT AND PERSONNEL)												
	CONSTRUCTION OF TEMPORARY FACILITIES												
33.02	**MONITORING, SAMPLING, TESTING, AND ANALYSIS**												
	SAMPLING LIQUID WASTE												
	SAMPLING SOIL												
	LABORATORY CHEMICAL ANALYSIS												
33.08	**SOLIDS COLLECTION AND CONTAINMENT**												
	EXCAVATION												
	BACKFILLING												
	WASTE CONTAINMENT												
33.19	**DISPOSAL**												
	TRANSPORTATION TO TREATMENT/DISPOSAL FACILITY												
	DISPOSAL FEES AND TAXES												
33.20	**SITE RESTORATION**												
	REVEGETATION AND PLANTING												
33.21	**DEMOBILIZATION**												
	REMOVAL OF TEMPORARY FACILITIES												
	DEMOBILIZATION (EQUIPMENT AND PERSONNEL)												
	POST-CONSTRUCTION SUBMITTALS												

CONSTRUCTION SCHEDULE ESTIMATE B
REMEDIATION OF PESTICIDE - CONTAMINATED SOIL
OPERABLE UNIT NO. 11 (SITE 80)



APPENDIX C
BORING LOGS

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.22' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16:00	0.0		S-1		-	-	0.0	0.0		SILTY SAND: Fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0
15:00	1.0									BOTTOM OF BOREHOLE = 1.0'	1.0
14:00	2.0										2.0
13:00	3.0										3.0
12:00	4.0										4.0
11:00	5.0										5.0
10:00	6.0										6.0
9:00	7.0										7.0
8:00	8.0										8.0
7:00	9.0										9.0
6:00	10.0										10.0
5:00	11.0										11.0
4:00	12.0										12.0
3:00	13.0										13.0
2:00	14.0										14.0
1:00	15.0										15.0
0:00	16.0										16.0
1:00	17.0										17.0
2:00	18.0										18.0
3:00	19.0										19.0
4:00	20.0										20.0
5:00	21.0										21.0
6:00	22.0										22.0
7:00	23.0										23.0
8:00	24.0										24.0
9:00	25.0										25.0
10:00	26.0										26.0
11:00	27.0										27.0
12:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.22' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0
15:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
14:00	2.0										2.0
13:00	3.0										3.0
12:00	4.0										4.0
11:00	5.0										5.0
10:00	6.0										6.0
9:00	7.0										7.0
8:00	8.0										8.0
7:00	9.0										9.0
6:00	10.0										10.0
5:00	11.0										11.0
4:00	12.0										12.0
3:00	13.0										13.0
2:00	14.0										14.0
1:00	15.0										15.0
0:00	16.0										16.0
1:00	17.0										17.0
2:00	18.0										18.0
3:00	19.0										19.0
4:00	20.0										20.0
5:00	21.0										21.0
6:00	22.0										22.0
7:00	23.0										23.0
8:00	24.0										24.0
9:00	25.0										25.0
10:00	26.0										26.0
11:00	27.0										27.0
12:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DPA-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: OVERCAST, COOL, DRIZZLE, BREEZY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: -
DATE BEGUN: 6/13/95 DATE COMPLETED: 6/13/95

GROUND SURFACE ELEVATION: 13.20' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
13:00	0.0		S-1	HA	-	-	1.1	1.1		SILT: some fine grained sand, little clay, black, moist,	0.0
12:00	1.0		S-2	SS	2 2 2 3	1.7	0.4	0.4		SAND: fine grained, some silt, some to little clay, gray/orangish brown, damp, loose to stiff	1.0
11:00	2.0										2.0
10:00	3.0		S-3	SS	2 4 6 9	1.5	0.4	0.4			3.0
9:00	4.0										4.0
8:00	5.0		S-4	SS	3 4 4 5	1.7	0.4	0.4		CLAY: some silt, little fine grained sand, brown/gray (mottled), damp, stiff	5.0
7:00	6.0										6.0
6:00	7.0		S-5	SS	6 6 7 8	1.6	0.4	0.4		SAND: fine grained, some silt, little to trace clay, orange/gray/orangish brown, moist to wet, dense to loose	7.0
5:00	8.0										8.0
4:00	9.0										9.0
3:00	10.0		S-6	SS	7 4 4 5	2.0	0.4	0.4			10.0
2:00	11.0									BOTTOM OF BOREHOLE @ 11.0'	11.0
1:00	12.0									NOTES: 1) Groundwater encountered at 9.5' during drilling.	12.0
0:00	13.0										13.0
1:00	14.0										14.0
2:00	15.0										15.0
3:00	16.0										16.0
4:00	17.0										17.0
5:00	18.0										18.0
6:00	19.0										19.0
7:00	20.0										20.0
8:00	21.0										21.0
9:00	22.0										22.0
10:00	23.0										23.0
11:00	24.0										24.0
12:00	25.0										25.0
13:00	26.0										26.0
14:00	27.0										27.0
15:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OPA-SB20

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY, WARM
GEOLOGIST: M.K. DEJOHN
ENV SCIENTIST: -
DATE BEGUN: 6/14/95 DATE COMPLETED: 6/14/95

GROUND SURFACE ELEVATION: 11.90' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HA	-	-	1.0	1.0		SAND: fine grained, some silt, little to some clay, gray/brown, wet to moist, soft	0.0
11:00	1.0		S-2	SS	1 1 2 2	1.3	1.0	1.0			1.0
10:00	2.0										2.0
9:00	3.0		S-3	SS	2 3 3 2	1.0	0.9	0.9			3.0
8:00	4.0										4.0
7:00	5.0		S-4	SS	1 1 1 1	1.1	0.5	0.5		CLAY: some to trace silt, little to some fine grained sand 3-10', brown/gray, moist to wet, medium stiff to very soft	5.0
6:00	6.0										6.0
5:00	7.0		S-5	SS	1 1 2 2	1.1	0.5	0.5			7.0
4:00	8.0										8.0
3:00	9.0		S-6	SS	WOH WOH 1 2	1.5	0.5	0.5			9.0
2:00	10.0										10.0
1:00	11.0									BOTTOM OF BOREHOLE @ 11.0'	11.0
0:00	12.0									NOTES: 1) Groundwater encountered at 7.0' during drilling.	12.0
1:00	13.0										13.0
2:00	14.0										14.0
3:00	15.0										15.0
4:00	16.0										16.0
5:00	17.0										17.0
6:00	18.0										18.0
7:00	19.0										19.0
8:00	20.0										20.0
9:00	21.0										21.0
10:00	22.0										22.0
11:00	23.0										23.0
12:00	24.0										24.0
13:00	25.0										25.0
14:00	26.0										26.0
15:00	27.0										27.0
16:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-DPA-SB17

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC.
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY, WARM
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: -
DATE BEGUN: 6/14/95 DATE COMPLETED: 6/14/95

GROUND SURFACE ELEVATION: 12.80' msl
TOTAL DEPTH: 11.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HSA	-	-	1.0	1.0			0.0
12:00	1.0		S-2	SS	3 4 3 3	0.9'	0.6	0.6		SAND: Fine grained, some silt, little clay 0-1'/3-5', some rock fragments 1-3', gray to dark gray, damp, loose to medium stiff	1.0
11:00	2.0										2.0
10:00	3.0										3.0
9:00	4.0		S-3	SS	3 2 3 3	1.5	0.6	0.6			4.0
8:00	5.0										5.0
7:00	6.0		S-4	SS	1 3 4 4	2.0	0.6	0.6		CLAY: some silt, little fine grained sand, brown and gray (mottled), damp to moist, medium stiff	6.0
6:00	7.0										7.0
5:00	8.0		S-5	SS	4 6 6 7	1.7	0.5	0.5			8.0
4:00	9.0										9.0
3:00	10.0		S-6	SS	2 10 10 12	1.5	0.5	0.5			10.0
2:00	11.0									SAND: Fine grained, some silt, little clay, brown, wet, medium dense	11.0
1:00	12.0									BOTTOM OF BOREHOLE @ 11.0'	12.0
0:00	13.0									NOTES:	13.0
1:00	14.0									1) Groundwater encountered at 10.0' during drilling.	14.0
2:00	15.0										15.0
3:00	16.0										16.0
4:00	17.0										17.0
5:00	18.0										18.0
6:00	19.0										19.0
7:00	20.0										20.0
8:00	21.0										21.0
9:00	22.0										22.0
10:00	23.0										23.0
11:00	24.0										24.0
12:00	25.0										25.0
13:00	26.0										26.0
14:00	27.0										27.0
15:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF/J.E. ZIMMERMAN
ENV. SCIENTIST: -
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 14.58' msl
TOTAL DEPTH: 13.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, trace coarse gravel, root material at surface, dark brown/brown, damp, very loose (probable fill to approx. 1')	0.0
13:00	1.0		S-2	SS	-	-	0.2	0.2			1.0
12:00	2.0		S-3	SS	-	-	0.2	0.2			2.0
11:00	3.0		S-4	SS	-	-	0.2	0.2			3.0
10:00	4.0		S-5	SS	-	-	0.2	0.2			4.0
9:00	5.0		S-6	SS	-	-	0.2	0.2			5.0
8:00	6.0		S-7	SS	-	-	0.2	0.2			6.0
7:00	7.0		S-8	SS	-	-	0.2	0.2		SILTY CLAY: some fine grained sand, brown, damp, very loose	7.0
6:00	8.0		S-9	SS	-	-	0.2	0.2			8.0
5:00	9.0		S-10	SS	-	-	0.2	0.2		SILTY SAND: fine grained, some to little clay, light gray/light brown, damp to wet, very loose	9.0
4:00	10.0		S-11	SS	-	-	0.2	0.2			10.0
3:00	11.0		S-12	SS	-	-	0.2	0.2			11.0
2:00	12.0		S-13	SS	-	-	0.2	0.2			12.0
1:00	13.0									BOTTOM OF BOREHOLE @ 13.0'	13.0
0:00	14.0									NOTES:	14.0
1:00	15.0									1) Groundwater encountered at 12.5' during drilling.	15.0
2:00	16.0										16.0
3:00	17.0										17.0
4:00	18.0										18.0
5:00	19.0										19.0
6:00	20.0										20.0
7:00	21.0										21.0
8:00	22.0										22.0
9:00	23.0										23.0
10:00	24.0										24.0
11:00	25.0										25.0
12:00	26.0										26.0
13:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 14.23' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14.00	0.0		S-1	SS	-	-	-	-			0.0
13.00	1.0									SILTY SAND: fine grained, trace to little clay, root material at surface, dark brown/ light grayish brown/light brown, damp, very loose to medium dense	1.0
12.00	2.0		S-2	SS	4 7 7 7	2.0	0.6	0.6			2.0
11.00	3.0										3.0
10.00	4.0		S-3	SS	2 4 6 8	1.6	0.6	0.6			4.0
9.00	5.0										5.0
8.00	6.0		S-4	SS	2 6 5 7	1.6	0.6	0.6			6.0
7.00	7.0										7.0
6.00	8.0		S-5	SS	4 3 5 7	1.8	0.6	0.6		SILTY CLAY: trace fine grained sand, light brown, damp, medium stiff/stiff/very stiff	8.0
5.00	9.0										9.0
4.00	10.0		S-6	SS	3 6 8 12	2.0	0.6	0.6			10.0
3.00	11.0										11.0
2.00	12.0		S-7	SS	12 12 20 7	1.8	0.6	0.6		SILTY SAND: fine grained, occasional trace clay, light brown, damp to wet, medium dense to dense	12.0
1.00	13.0										13.0
0.00	14.0		S-8	SS	2 4 10 20	1.5	0.6	0.6			14.0
-1.00	15.0									BOTTOM OF BOREHOLE = 15.0'	15.0
-2.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
-3.00	17.0										17.0
-4.00	18.0										18.0
-5.00	19.0										19.0
-6.00	20.0										20.0
-7.00	21.0										21.0
-8.00	22.0										22.0
-9.00	23.0										23.0
-10.00	24.0										24.0
-11.00	25.0										25.0
-12.00	26.0										26.0
-13.00	27.0										27.0
-14.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB03

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 14.68' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0										0.0
14:00	1.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, root material at surface, trace clay, dark brown/brown/light brown, damp, very loose to medium dense	1.0
13:00	2.0		S-2	SS	5 6 6 6	2.0	0.6	0.6			2.0
12:00	3.0										3.0
11:00	4.0		S-3	SS	2 3 5 6	2.0	0.6	0.6			4.0
10:00	5.0										5.0
9:00	6.0		S-4	SS	3 5 5 6	2.0	0.6	0.6			6.0
8:00	7.0										7.0
7:00	8.0		S-5	SS	4 4 6 10	2.0	0.6	0.6		SILTY CLAY: trace fine grained sand, light gray, damp, medium stiff/stiff	8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	3 7 10 15	1.9	0.6	0.6			10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	5 6 10 13	1.4	0.6	0.6		SILTY SAND: fine grained, trace clay, light gray, damp to wet, medium dense to dense	12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	3 3 7 10	1.8	0.6	0.6			14.0
0:00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1:00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
2:00	17.0										17.0
3:00	18.0										18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB04

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.02' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14.00	0.0		S-1	SS	-	-	-	-			0.0
13.00	1.0		S-2	SS	3 3 5 8	0.9	0.1	0.1		SILTY SAND: Fine grained, trace root material at surface, trace clay, dark brown/brown/black/light brown, damp to moist, very loose to loose	1.0
12.00	2.0										2.0
11.00	3.0		S-3	SS	1 3 2 3	0.5	0.1	0.1			3.0
10.00	4.0										4.0
9.00	5.0		S-4	SS	1 3 4 6	2.0	0.1	0.1			5.0
8.00	6.0										6.0
7.00	7.0		S-5	SS	2 4 5 8	2.0	0.1	0.1		SILTY CLAY: trace fine grained sand, light gray, damp to moist, loose to medium stiff	7.0
6.00	8.0										8.0
5.00	9.0										9.0
4.00	10.0		S-6	SS	4 5 7 10	2.0	0.1	0.1			10.0
3.00	11.0										11.0
2.00	12.0		S-7	SS	4 5 15 18	1.8	0.1	0.1			12.0
1.00	13.0										13.0
0.00	14.0		S-8	SS	2 4 6 6	2.0	0.1	0.1		SILTY SAND: Fine grained, light gray, moist to wet, medium dense	14.0
-1.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
-2.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
-3.00	17.0										17.0
-4.00	18.0										18.0
-5.00	19.0										19.0
-6.00	20.0										20.0
-7.00	21.0										21.0
-8.00	22.0										22.0
-9.00	23.0										23.0
-10.00	24.0										24.0
-11.00	25.0										25.0
-12.00	26.0										26.0
-13.00	27.0										27.0
-14.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB05

SHEET: 1 OF: 1

PROJECT NUMBER	62470-274
PROJECT NAME	SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION	MCB CAMP LEJEUNE, NC
DRILLING COMPANY	MARDIN-HUBER, INC.
RIG TYPE & NUMBER	ATV
DRILLING METHOD	HOLLOW STEM AUGERS
WEATHER	SUNNY
GEOLOGIST	J.E. ZIMMERMAN
ENV. SCIENTIST	M.K. DEJOHN
DATE BEGUN	11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 14.65' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14:00	0.0										0.0
	1.0		S-1	SS	-	-	-	-		SILTY SAND: fine grained, root material at surface, trace clay, dark brown/brown/light brown, damp, very loose to medium dense	1.0
13:00	2.0		S-2	SS	4 5 4 7	1.1	0.5	0.5			2.0
12:00	3.0										3.0
	4.0		S-3	SS	4 5 7 12	1.5	0.5	0.5			4.0
10:00	5.0										5.0
9:00	6.0		S-4	SS	8 12 10 10	1.3	0.5	0.5			6.0
8:00	7.0										7.0
	8.0		S-5	SS	6 8 10 15	1.3	0.5	0.5		SILTY CLAY: trace fine grained sand, light gray, damp, stiff/medium stiff	8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	7 10 11 16	1.4	0.5	0.5		SILTY SAND: fine grained, trace clay, brown/ light brown/light gray, damp to wet, medium dense	10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	6 7 7 6	1.5	0.5	0.5			12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	3 5 8 11	1.5	0.5	0.5			14.0
0:00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1:00	16.0									NOTES 1) Groundwater encountered at 14.0' during drilling	16.0
2:00	17.0										17.0
3:00	18.0										18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB06

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.49' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
14.00	0.0		S-1	SS	-	-	-	-			0.0
13.00	1.0		S-2	SS	5 4 4 5	1.2	0.2	0.2		SILTY SAND: Fine grained, trace root material at surface, trace to little clay, dark brown/brown/light brown/ light gray, damp, very loose to loose	1.0
12.00	2.0										2.0
11.00	3.0		S-3	SS	1 2 3 4	1.4	0.2	0.2			3.0
10.00	4.0										4.0
9.00	5.0		S-4	SS	3 3 5 6	1.7	0.2	0.2			5.0
8.00	6.0										6.0
7.00	7.0		S-5	SS	2 4 5 8	1.8	0.2	0.2			7.0
6.00	8.0										8.0
5.00	9.0		S-6	SS	2 5 7 8	1.8	0.2	0.2			9.0
4.00	10.0									SILTY CLAY: trace fine grained sand, light gray, damp, stiff	10.0
3.00	11.0										11.0
2.00	12.0		S-7	SS	3 5 7 13	1.5	0.2	0.2		SILTY SAND: fine grained, light gray, damp to wet, medium dense	12.0
1.00	13.0										13.0
0.00	14.0		S-8	SS	2 5 7 9	1.6	0.2	0.2			14.0
-1.00	15.0									BOTTOM OF BOREHOLE = 15.0'	15.0
-2.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
-3.00	17.0										17.0
-4.00	18.0										18.0
-5.00	19.0										19.0
-6.00	20.0										20.0
-7.00	21.0										21.0
-8.00	22.0										22.0
-9.00	23.0										23.0
-10.00	24.0										24.0
-11.00	25.0										25.0
-12.00	26.0										26.0
-13.00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-LA-SB07

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 13.59' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
13:00	1.0									SILTY SAND: Fine grained, trace root material at surface, trace to little clay, dark brown/brown/light brown/ light gray, damp, very loose/loose/medium dense	1.0
12:00	2.0		S-2	SS	2 2 4 5	1.2	0.2	0.2			2.0
11:00	3.0										3.0
10:00	4.0		S-3	SS	2 2 6 8	1.6	0.2	0.2			4.0
9:00	5.0										5.0
8:00	6.0		S-4	SS	7 11 10 11	1.6	0.2	0.2			6.0
7:00	7.0										7.0
6:00	8.0		S-5	SS	11 10 15 13	1.7	0.2	0.2			8.0
5:00	9.0										9.0
4:00	10.0		S-6	SS	5 7 8 12	1.6	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp, stiff	10.0
3:00	11.0										11.0
2:00	12.0		S-7	SS	11 9 6 7	1.6	0.2	0.2		SILTY SAND: fine grained, light gray, damp to wet, medium dense	12.0
1:00	13.0										13.0
0:00	14.0		S-8	SS	2 4 6 7	1.6	0.2	0.2			14.0
1:00	15.0										15.0
2:00	16.0									BOTTOM OF BOREHOLE @ 15.0' NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
3:00	17.0										17.0
4:00	18.0										18.0
5:00	19.0										19.0
6:00	20.0										20.0
7:00	21.0										21.0
8:00	22.0										22.0
9:00	23.0										23.0
10:00	24.0										24.0
11:00	25.0										25.0
12:00	26.0										26.0
13:00	27.0										27.0
14:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB01
SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.73' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
14:00	1.0		S-2	SS	2 1 2 3	1.7	0.2	0.2		SILTY SAND: Fine grained, trace coarse gravel and root material at surface, trace clay, dark brown/ brown, damp, very loose to medium dense	1.0
13:00	2.0										2.0
12:00	3.0		S-3	SS	2 4 5 6	1.3	0.2	0.2			3.0
11:00	4.0										4.0
10:00	5.0		S-4	SS	4 7 7 7	0.8	0.2	0.2			5.0
9:00	6.0									SILTY CLAY: trace fine grained sand, brown/light gray /light brown, damp to moist, medium stiff	6.0
8:00	7.0										7.0
7:00	8.0		S-5	SS	2 4 6 9	1.7	0.2	0.2			8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	3 6 10 9	1.8	0.2	0.2		10' to 11' SAND Fine grained, trace to little clay	10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	2 2 5 6	2.0	0.2	0.2			12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	1 1 5 7	1.4	0.2	0.2		SILTY SAND: Fine grained, light gray, moist to wet, loose	14.0
0:00	15.0										15.0
1:00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
2:00	17.0									NOTES:	17.0
3:00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J E ZIMMERMAN
ENV SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 15.32' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
15:00	0.0		S-1	SS	-	-	-	-			0.0
14:00	1.0		S-2	SS	10 15 10 10	1.8	0.5	0.5		SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
13:00	2.0										2.0
12:00	3.0		S-3	SS	3 6 10 12	1.6	0.5	0.5			3.0
11:00	4.0										4.0
10:00	5.0		S-4	SS	5 7 10 7	1.8	0.5	0.5			5.0
9:00	6.0										6.0
8:00	7.0		S-5	SS	4 9 10 14	1.4	0.5	0.5			7.0
7:00	8.0									SILTY CLAY: trace fine grained sand, brown, damp, stiff	8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	4 5 8 11	1.7	0.5	0.5			10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	5 7 10 8	1.8	0.5	0.5		SILTY SAND: fine grained, trace clay, light brown/ light gray, damp to wet, medium dense	12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	4 7 9 12	1.5	0.5	0.5			14.0
0:00	15.0										15.0
1:00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
2:00	17.0									NOTES:	17.0
3:00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB03

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 14.97' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
14:00	1.0									SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
13:00	2.0		S-2	SS	6 10 10 9	1.5	0.2	0.2			2.0
12:00	3.0										3.0
11:00	4.0		S-3	SS	6 6 9 10	1.1	0.2	0.2			4.0
10:00	5.0										5.0
9:00	6.0		S-4	SS	4 6 8 6	1.5	0.2	0.2		SILTY CLAY: trace fine grained sand, brown/light gray/ light brown, damp to moist, stiff	6.0
8:00	7.0										7.0
7:00	8.0		S-5	SS	3 6 6 7	1.7	0.2	0.2			8.0
6:00	9.0										9.0
5:00	10.0		S-6	SS	3 6 7 10	2.0	0.2	0.2			10.0
4:00	11.0										11.0
3:00	12.0		S-7	SS	4 6 7 9	1.0	0.2	0.2			12.0
2:00	13.0										13.0
1:00	14.0		S-8	SS	2 2 4 6	1.2	0.2	0.2		SILTY SAND: fine grained, light gray, moist to wet	14.0
0:00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
1:00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling	16.0
2:00	17.0										17.0
3:00	18.0										18.0
4:00	19.0										19.0
5:00	20.0										20.0
6:00	21.0										21.0
7:00	22.0										22.0
8:00	23.0										23.0
9:00	24.0										24.0
10:00	25.0										25.0
11:00	26.0										26.0
12:00	27.0										27.0
13:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-MA-SB04

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: M.K. DEJOHN
DATE BEGUN: 11/1/94 DATE COMPLETED: 11/1/94

GROUND SURFACE ELEVATION: 15.14' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
15.00	0.0		S-1	SS	-	-		-		SILTY SAND: fine grained, trace coarse gravel at surface, trace clay, dark brown/brown, damp, very loose to medium dense	0.0
14.00	1.0		S-2	SS	7 9 6 6	1.5	0.5	0.5			1.0
13.00	2.0										2.0
12.00	3.0		S-3	SS	2 5 7 6	1.5	0.5	0.5			3.0
11.00	4.0										4.0
10.00	5.0		S-4	SS	3 6 7 8	1.8	0.5	0.5			5.0
9.00	6.0										6.0
8.00	7.0		S-5	SS	6 6 8 9	2.0	0.5	0.5		SILTY CLAY: trace fine grained sand, brown, damp, medium dense/stiff	7.0
7.00	8.0										8.0
6.00	9.0										9.0
5.00	10.0		S-6	SS	5 5 6 12	1.8	0.5	0.5			10.0
4.00	11.0										11.0
3.00	12.0		S-7	SS	4 7 11 9	1.6	0.5	0.5		SILTY SAND: fine grained, trace clay, light brown/light gray, damp to wet, medium dense	12.0
2.00	13.0										13.0
1.00	14.0		S-8	SS	4 6 7 12	1.7	0.5	0.5			14.0
0.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
-1.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
-2.00	17.0										17.0
-3.00	18.0										18.0
-4.00	19.0										19.0
-5.00	20.0										20.0
-6.00	21.0										21.0
-7.00	22.0										22.0
-8.00	23.0										23.0
-9.00	24.0										24.0
-10.00	25.0										25.0
-11.00	26.0										26.0
-12.00	27.0										27.0
-13.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB01

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 17.47' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
17.00	0.0		S-1	SS	-	-	-	-			0.0
	1.0									SILTY SAND: fine grained, trace wood at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	1.0
16.00	2.0		S-2	SS	4 8 12 15	1.8	0.2	0.5			2.0
15.00	3.0										3.0
14.00	4.0		S-3	SS	4 14 9 7	0.9	0.2	0.2			4.0
13.00	5.0										5.0
12.00	6.0		S-4	SS	4 5 5 7	1.8	0.2	0.2			6.0
11.00	7.0										7.0
10.00	8.0		S-5	SS	1 3 5 8	1.6	0.2	0.2		SILTY CLAY trace fine grained sand, light gray, damp, stiff	8.0
9.00	9.0										9.0
8.00	10.0		S-6	SS	2 6 13 13	1.7	0.2	0.2			10.0
7.00	11.0									SAND: fine grained, trace silt, light brown/light gray, damp to wet, medium dense	11.0
6.00	12.0		S-7	SS	3 5 15 21	1.3	0.3	0.3			12.0
5.00	13.0										13.0
4.00	14.0		S-8	SS	2 5 10 21	1.5	0.2	0.2			14.0
3.00	15.0										15.0
2.00	16.0		S-9	SS	5 7 12 12	1.2	0.2	0.2			16.0
1.00	17.0										17.0
0.00	18.0									BOTTOM OF BOREHOLE @ 17.0'	18.0
-1.00	19.0									NOTES: 1) Groundwater encountered at 15.5' during drilling	19.0
-2.00	20.0										20.0
-3.00	21.0										21.0
-4.00	22.0										22.0
-5.00	23.0										23.0
-6.00	24.0										24.0
-7.00	25.0										25.0
-8.00	26.0										26.0
-9.00	27.0										27.0
-10.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-0A-SB02

SHEET 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.85' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
16:00	1.0		S-2	SS	11 11 12 10	0.7	0.2	0.2		SILTY SAND: fine grained, trace wood at surface, trace clay, dark brown/brown, damp, very loose to medium dense	1.0
15:00	2.0										2.0
14:00	3.0		S-3	SS	5 8 12 14	0.9	0.2	0.2			3.0
13:00	4.0										4.0
12:00	5.0		S-4	SS	12 9 9 8	NR	0.2	0.2			5.0
11:00	6.0										6.0
10:00	7.0		S-5	SS	5 4 6 9	1.3	0.2	0.2			7.0
9:00	8.0									SILTY CLAY: trace fine grained sand, brown, damp, stiff	8.0
8:00	9.0										9.0
7:00	10.0		S-6	SS	4 9 12 12	1.0	0.2	0.2		SAND: fine grained, some to trace silt, occasional trace clay, light brown/light gray, damp to wet, medium dense to dense	10.0
6:00	11.0										11.0
5:00	12.0		S-7	SS	7 12 19 22	1.2	0.2	0.2			12.0
4:00	13.0										13.0
3:00	14.0		S-8	SS	4 7 16 16	1.9	0.2	0.2			14.0
2:00	15.0										15.0
1:00	16.0		S-9	SS	4 7 9 9	1.0	0.2	1.1			16.0
0:00	17.0									BOTTOM OF BOREHOLE @ 17.0'	17.0
1:00	18.0									NOTES:	18.0
2:00	19.0									1) Groundwater encountered at 15.5' during drilling.	19.0
3:00	20.0										20.0
4:00	21.0										21.0
5:00	22.0										22.0
6:00	23.0										23.0
7:00	24.0										24.0
8:00	25.0										25.0
9:00	26.0										26.0
10:00	27.0										27.0
11:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: SO-OA-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 16.73' msl
TOTAL DEPTH: 17.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
16:00	0.0		S-1	SS	-	-	0.3	0.3		SILTY SAND: Fine grained, trace wood at surface, trace to little clay, dark brown/brown, damp, very loose/medium dense	0.0
15:00	1.0		S-2	SS	8 5 7 11	0.9	0.2	0.2			1.0
14:00	2.0										2.0
13:00	3.0		S-3	SS	3 7 9 10	1.1	0.2	0.2			3.0
12:00	4.0										4.0
11:00	5.0		S-4	SS	3 4 5 7	1.8	0.2	0.2			5.0
10:00	6.0										6.0
9:00	7.0		S-5	SS	2 5 6 12	1.2	0.3	0.3		7 to 7.5' SILTY CLAY: trace fine grained sand	7.0
8:00	8.0									SAND: Fine grained, trace silt, light brown/light gray, damp to wet, medium dense	8.0
7:00	9.0		S-6	SS	3 4 5 8	1.2	0.2	0.2			9.0
6:00	10.0										10.0
5:00	11.0		S-7	SS	2 9 12 10	1.4	0.3	0.3			11.0
4:00	12.0										12.0
3:00	13.0		S-8	SS	5 7 12 10	1.5	0.2	0.2			13.0
2:00	14.0										14.0
1:00	15.0		S-9	SS	2 2 7 10	1.3	0.2	0.2			15.0
0:00	16.0										16.0
1:00	17.0									BOTTOM OF BOREHOLE @ 17.0'	17.0
2:00	18.0									NOTES:	18.0
3:00	19.0									1) Groundwater encountered at 15.5' during drilling.	19.0
4:00	20.0										20.0
5:00	21.0										21.0
6:00	22.0										22.0
7:00	23.0										23.0
8:00	24.0										24.0
9:00	25.0										25.0
10:00	26.0										26.0
11:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-0A-SB04

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 17.99' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
17.00	1.0									SILTY SAND: fine grained, little clay, trace roots, dark brown, moist	1.0
16.00	2.0		S-2	SS	8 7 5 5	1.3	0.0	0.3			2.0
15.00	3.0									CLAY: some silt, little to trace fine grained sand, brown/orange, damp, stiff	3.0
14.00	4.0		S-3	SS	2 5 5 6	1.2	0.0	BG			4.0
13.00	5.0										5.0
12.00	6.0		S-4	SS	3 5 6 8	1.5	0.0	BG			6.0
11.00	7.0										7.0
10.00	8.0		S-5	SS	5 9 13 13	1.2	0.0	BG		SAND: fine grained, some to trace silt, occasional trace clay, brown/orange/gray/buff, damp to wet, medium dense to dense	8.0
9.00	9.0										9.0
8.00	10.0		S-6	SS	4 8 10 14	1.3	0.0	0.6			10.0
7.00	11.0										11.0
6.00	12.0		S-7	SS	10 14 17 19	1.6	0.0	BG			12.0
5.00	13.0										13.0
4.00	14.0		S-8	SS	4 5 5 7	1.5	0.0	0.0			14.0
3.00	15.0									BOTTOM OF BOREHOLE @ 15.0'	15.0
2.00	16.0									NOTES: 1) Groundwater encountered at 14.0' during drilling.	16.0
1.00	17.0										17.0
0.00	18.0										18.0
-1.00	19.0										19.0
-2.00	20.0										20.0
-3.00	21.0										21.0
-4.00	22.0										22.0
-5.00	23.0										23.0
-6.00	24.0										24.0
-7.00	25.0										25.0
-8.00	26.0										26.0
-9.00	27.0										27.0
-10.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-OA-SB05

SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV SCIENTIST: M.D. SMITH
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.76' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	SS	-	-	-	-			0.0
16.00	1.0									SAND: Fine grained, trace silt, gray, damp	1.0
15.00	2.0		S-2	SS	2 4 6 9	1.5	0.0	86		SILT: some clay, trace fine grained sand, brown, damp	2.0
14.00	3.0										3.0
13.00	4.0		S-3	SS	3 5 5 5	0.8	0.0	86		CLAY: little silt, trace roots, gray to brown, stiff	4.0
12.00	5.0										5.0
11.00	6.0		S-4	SS	4 4 7 10	1.4	0.0	86			6.0
10.00	7.0									SAND: Fine grained, trace to little silt, trace clay, gray, damp to wet, medium dense	7.0
9.00	8.0		S-5	SS	4 6 7 8	1.1	0.0	1.8			8.0
8.00	9.0										9.0
7.00	10.0		S-6	SS	5 7 10 11	1.3	0.2	0.8			10.0
6.00	11.0										11.0
5.00	12.0		S-7	SS	8 10 10 17	1.6	0.0	1.2			12.0
4.00	13.0										13.0
3.00	14.0		S-8	SS	7 7 7 9	1.5	0.0	4.4			14.0
2.00	15.0										15.0
1.00	16.0									BOTTOM OF BOREHOLE @ 15.0'	16.0
0.00	17.0									NOTES:	17.0
1.00	18.0									1) Groundwater encountered at 14.0' during drilling	18.0
2.00	19.0										19.0
3.00	20.0										20.0
4.00	21.0										21.0
5.00	22.0										22.0
6.00	23.0										23.0
7.00	24.0										24.0
8.00	25.0										25.0
9.00	26.0										26.0
10.00	27.0										27.0
11.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-0A-SB06
SHEET: 1 OF 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC
RIG TYPE & NUMBER: ATV
DRILLING METHOD: HOLLOW STEM AUGERS
WEATHER: SUNNY
GEOLOGIST: M.K. DEJOHN
ENV. SCIENTIST: M.D SMITH
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.47' msl
TOTAL DEPTH: 15.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
			S-1	SS	-	-	-	-			
			S-2	SS	4 4 8 12	0.8	0.0	0.3		SILT: trace clay and roots, dark brown, damp	0.0
			S-3	SS	6 4 6 6	1.3	0.0	BG		SILTY CLAY: trace fine grained sand, brown/orange, damp, stiff	1.0
			S-4	SS	5 10 10 12	1.4	0.0	BG		CLAYEY SILT: trace fine grained sand, trace roots, brown/orange, medium stiff	2.0
			S-5	SS	5 10 12 15	1.4	0.0	BG		SAND: fine grained, some to trace silt, occasional trace clay, brown/orange/gray/buff, damp to wet, medium dense	3.0
			S-6	SS	3 8 8 10	1.3	0.0	BG			4.0
			S-7	SS	8 12 16 17	1.6	0.0	BG			5.0
			S-8	SS	8 9 9 12	1.7	0.0	BG			6.0
											7.0
											8.0
											9.0
											10.0
											11.0
											12.0
											13.0
											14.0
											15.0
										BOTTOM OF BOREHOLE @ 15.0'	
										NOTES: 1) Groundwater encountered at 13.0' during drilling.	

16:00 15:00 14:00 13:00 12:00 11:00 10:00 9:00 8:00 7:00 6:00 5:00 4:00 3:00 2:00 1:00 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00

0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0 21.0 22.0 23.0 24.0 25.0 26.0 27.0 28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB01

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 23.05' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
23:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (fill)	0.0
22:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
21:00	2.0										2.0
20:00	3.0										3.0
19:00	4.0										4.0
18:00	5.0										5.0
17:00	6.0										6.0
16:00	7.0										7.0
15:00	8.0										8.0
14:00	9.0										9.0
13:00	10.0										10.0
12:00	11.0										11.0
11:00	12.0										12.0
10:00	13.0										13.0
9:00	14.0										14.0
8:00	15.0										15.0
7:00	16.0										16.0
6:00	17.0										17.0
5:00	18.0										18.0
4:00	19.0										19.0
3:00	20.0										20.0
2:00	21.0										21.0
1:00	22.0										22.0
0:00	23.0										23.0
1:00	24.0										24.0
2:00	25.0										25.0
3:00	26.0										26.0
4:00	27.0										27.0
5:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB02

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 25.07' msl
TOTAL DEPTH: 6.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
25.00	0.0		S-1	HA	-	-	0.0	0.0			0.0
24.00	1.0		S-2	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	1.0
23.00	2.0		S-3	HA	-	-	0.0	0.0			2.0
22.00	3.0		S-4	HA	-	-	0.0	0.0			3.0
21.00	4.0		S-5	HA	-	-	0.0	0.0			4.0
20.00	5.0		S-6	HA	-	-	0.0	0.0			5.0
19.00	6.0									SILT: trace clay, dark brown/gray, damp, stiff	6.0
18.00	7.0									BOTTOM OF BOREHOLE @ 6.0'	7.0
17.00	8.0										8.0
16.00	9.0										9.0
15.00	10.0										10.0
14.00	11.0										11.0
13.00	12.0										12.0
12.00	13.0										13.0
11.00	14.0										14.0
10.00	15.0										15.0
9.00	16.0										16.0
8.00	17.0										17.0
7.00	18.0										18.0
6.00	19.0										19.0
5.00	20.0										20.0
4.00	21.0										21.0
3.00	22.0										22.0
2.00	23.0										23.0
1.00	24.0										24.0
0.00	25.0										25.0
1.00	26.0										26.0
2.00	27.0										27.0
3.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB03

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/2/94 DATE COMPLETED: 11/2/94

GROUND SURFACE ELEVATION: 23.41' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
23:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
22:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
21:00	2.0										2.0
20:00	3.0										3.0
19:00	4.0										4.0
18:00	5.0										5.0
17:00	6.0										6.0
16:00	7.0										7.0
15:00	8.0										8.0
14:00	9.0										9.0
13:00	10.0										10.0
12:00	11.0										11.0
11:00	12.0										12.0
10:00	13.0										13.0
9:00	14.0										14.0
8:00	15.0										15.0
7:00	16.0										16.0
6:00	17.0										17.0
5:00	18.0										18.0
4:00	19.0										19.0
3:00	20.0										20.0
2:00	21.0										21.0
1:00	22.0										22.0
0:00	23.0										23.0
1:00	24.0										24.0
2:00	25.0										25.0
3:00	26.0										26.0
4:00	27.0										27.0
5:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB04

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 26.39' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
26.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (fill)	0.0
25.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
24.00	2.0										2.0
23.00	3.0										3.0
22.00	4.0										4.0
21.00	5.0										5.0
20.00	6.0										6.0
19.00	7.0										7.0
18.00	8.0										8.0
17.00	9.0										9.0
16.00	10.0										10.0
15.00	11.0										11.0
14.00	12.0										12.0
13.00	13.0										13.0
12.00	14.0										14.0
11.00	15.0										15.0
10.00	16.0										16.0
9.00	17.0										17.0
8.00	18.0										18.0
7.00	19.0										19.0
6.00	20.0										20.0
5.00	21.0										21.0
4.00	22.0										22.0
3.00	23.0										23.0
2.00	24.0										24.0
1.00	25.0										25.0
0.00	26.0										26.0
1.00	27.0										27.0
2.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB05

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 24.47' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
24.00	0.0		SP-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
23.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
22.00	2.0										2.0
21.00	3.0										3.0
20.00	4.0										4.0
19.00	5.0										5.0
18.00	6.0										6.0
17.00	7.0										7.0
16.00	8.0										8.0
15.00	9.0										9.0
14.00	10.0										10.0
13.00	11.0										11.0
12.00	12.0										12.0
11.00	13.0										13.0
10.00	14.0										14.0
9.00	15.0										15.0
8.00	16.0										16.0
7.00	17.0										17.0
6.00	18.0										18.0
5.00	19.0										19.0
4.00	20.0										20.0
3.00	21.0										21.0
2.00	22.0										22.0
1.00	23.0										23.0
0.00	24.0										24.0
-1.00	25.0										25.0
-2.00	26.0										26.0
-3.00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB06

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 21.55' msl
TOTAL DEPTH: 6.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
21:00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (Fill)	0.0
20:00	1.0		S-2	HA	-	-	0.0	0.0			1.0
19:00	2.0		S-3	HA	-	-	0.0	0.0			2.0
18:00	3.0		S-4	HA	-	-	0.0	0.0			3.0
17:00	4.0		S-5	HA	-	-	0.0	0.0			4.0
16:00	5.0		S-6	HA	-	-	0.0	0.0			5.0
15:00	6.0									SILT: trace clay, dark brown/gray, damp, stiff	6.0
14:00	7.0									BOTTOM OF BOREHOLE @ 6.0'	7.0
13:00	8.0										8.0
12:00	9.0										9.0
11:00	10.0										10.0
10:00	11.0										11.0
9:00	12.0										12.0
8:00	13.0										13.0
7:00	14.0										14.0
6:00	15.0										15.0
5:00	16.0										16.0
4:00	17.0										17.0
3:00	18.0										18.0
2:00	19.0										19.0
1:00	20.0										20.0
0:00	21.0										21.0
1:00	22.0										22.0
2:00	23.0										23.0
3:00	24.0										24.0
4:00	25.0										25.0
5:00	26.0										26.0
6:00	27.0										27.0
	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB07

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 24.22' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
24.00	0.0		S-1		-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (fill)	0.0
23.00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
22.00	2.0										2.0
21.00	3.0										3.0
20.00	4.0										4.0
19.00	5.0										5.0
18.00	6.0										6.0
17.00	7.0										7.0
16.00	8.0										8.0
15.00	9.0										9.0
14.00	10.0										10.0
13.00	11.0										11.0
12.00	12.0										12.0
11.00	13.0										13.0
10.00	14.0										14.0
9.00	15.0										15.0
8.00	16.0										16.0
7.00	17.0										17.0
6.00	18.0										18.0
5.00	19.0										19.0
4.00	20.0										20.0
3.00	21.0										21.0
2.00	22.0										22.0
1.00	23.0										23.0
0.00	24.0										24.0
1.00	25.0										25.0
2.00	26.0										26.0
3.00	27.0										27.0
4.00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB08

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 21.91' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (fill)	0.0
21:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
20:00	2.0										2.0
19:00	3.0										3.0
18:00	4.0										4.0
17:00	5.0										5.0
16:00	6.0										6.0
15:00	7.0										7.0
14:00	8.0										8.0
13:00	9.0										9.0
12:00	10.0										10.0
11:00	11.0										11.0
10:00	12.0										12.0
9:00	13.0										13.0
8:00	14.0										14.0
7:00	15.0										15.0
6:00	16.0										16.0
5:00	17.0										17.0
4:00	18.0										18.0
3:00	19.0										19.0
2:00	20.0										20.0
1:00	21.0										21.0
0:00	22.0										22.0
1:00	23.0										23.0
2:00	24.0										24.0
3:00	25.0										25.0
4:00	26.0										26.0
5:00	27.0										27.0
6:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB09

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 22.12' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
22:00	0.0		SS-1	HA	-	-	0.0	0.0		SILTY SAND: Fine grained, brown/tan, damp, loose (Fill)	0.0
21:00	1.0									BOTTOM OF BOREHOLE @ 1.0'	1.0
20:00	2.0										2.0
19:00	3.0										3.0
18:00	4.0										4.0
17:00	5.0										5.0
16:00	6.0										6.0
15:00	7.0										7.0
14:00	8.0										8.0
13:00	9.0										9.0
12:00	10.0										10.0
11:00	11.0										11.0
10:00	12.0										12.0
9:00	13.0										13.0
8:00	14.0										14.0
7:00	15.0										15.0
6:00	16.0										16.0
5:00	17.0										17.0
4:00	18.0										18.0
3:00	19.0										19.0
2:00	20.0										20.0
1:00	21.0										21.0
0:00	22.0										22.0
1:00	23.0										23.0
2:00	24.0										24.0
3:00	25.0										25.0
4:00	26.0										26.0
5:00	27.0										27.0
6:00	28.0										28.0

BAKER

TEST BORING LOG

BOREHOLE NUMBER: 80-SM-SB10

SHEET: 1 OF: 1

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: -
RIG TYPE & NUMBER: -
DRILLING METHOD: HAND AUGERS
WEATHER: SUNNY
GEOLOGIST: E.J. KLEINKAUF
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 20.53' msl
TOTAL DEPTH: 1.0' bgs

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/6"	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH
20.00	0.0		S-1	HA	-	-	0.0	0.0		SILTY SAND: fine grained, brown/tan, damp, loose (Fill)	0.0
19.00	1.0									BOTTOM OF BOREHOLE = 1.0'	1.0
18.00	2.0										2.0
17.00	3.0										3.0
16.00	4.0										4.0
15.00	5.0										5.0
14.00	6.0										6.0
13.00	7.0										7.0
12.00	8.0										8.0
11.00	9.0										9.0
10.00	10.0										10.0
9.00	11.0										11.0
8.00	12.0										12.0
7.00	13.0										13.0
6.00	14.0										14.0
5.00	15.0										15.0
4.00	16.0										16.0
3.00	17.0										17.0
2.00	18.0										18.0
1.00	19.0										19.0
0.00	20.0										20.0
1.00	21.0										21.0
2.00	22.0										22.0
3.00	23.0										23.0
4.00	24.0										24.0
5.00	25.0										25.0
6.00	26.0										26.0
7.00	27.0										27.0
	28.0										28.0

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: SD-MW03IW

SHEET: 1 OF 3

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: MOBILE B-80
DRILLING METHOD: MUD ROTARY
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 14.41' msl
TOP OF CASING ELEVATION: 16.98' msl

WELL DETAILS (FT)

STICKUP:	3.0
INNER CASING (10"I.D.):	9.5
LENGTH OF RISER (2"I.D.):	57.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	52.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE	BLOWS/0.5'	RECOVERY	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
18:00	4.0										4.0	
17:00	3.0										3.0	
16:00	2.0										2.0	
15:00	1.0										1.0	
14:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, little clay, trace root material at surface, dark brown, damp, very loose/medium dense (fill)	0.0	
13:00	1.0		S-2	SS	6 12 5 6	0.2	0.2	0.2			1.0	
12:00	2.0										2.0	
11:00	3.0		S-3	SS	1 4 3 4	0.5	0.2	0.2		SILTY CLAY: little to some fine grained sand, trace charcoal and burnt soil, brown/black, damp to moist, loose/medium dense (fill)	3.0	
10:00	4.0										4.0	
9:00	5.0		S-4	SS	2 3 3 4	2.0	0.2	0.2			5.0	
8:00	6.0										6.0	
7:00	7.0		S-5	SS	2 3 5 8	2.0	0.2	0.2		SILTY CLAY: trace fine grained sand, light gray, damp to moist, stiff/medium stiff	7.0	
6:00	8.0										8.0	
5:00	9.0		S-6	SS	2 4 4 8	1.8	0.2	0.2			9.0	
4:00	10.0										10.0	
3:00	11.0									SILTY SAND: fine grained, little clay, brown, moist, loose	11.0	
2:00	12.0		S-7	SS	8 12 14 19	0.9	0.2	0.2		SAND: fine to medium grained, little to trace silt, trace clay (11 - 13'), light gray/light brown, damp to wet, medium dense/dense/very dense/loose	12.0	
1:00	13.0										13.0	
0:00	14.0		S-8	SS	8 9 14 15	0.8	0.2	0.2			14.0	
1:00	15.0										15.0	
2:00	16.0										16.0	
3:00	17.0										17.0	
4:00	18.0										18.0	
5:00	19.0		S-9	SS	3 8 11 13	0.9	0.2	0.2			19.0	
6:00	20.0										20.0	
7:00	21.0										21.0	
8:00	22.0										22.0	
9:00	23.0										23.0	
10:00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER
80-MW03IW
SHEET: 2 OF: 3

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
6:00	20.0										20.0	
7:00	21.0										21.0	
8:00	22.0										22.0	
9:00	23.0										23.0	
10:00	24.0		S-10	SS	7 18 19 22	1.0	0.2	0.2		SAND: fine grained, little to trace silt, light gray/light brown, damp to wet, medium dense/dense/very dense/loose.	24.0	
11:00	25.0										25.0	
12:00	26.0										26.0	
13:00	27.0										27.0	
14:00	28.0										28.0	
15:00	29.0		S-11	SS	10 16 20 23	0.8	0.2	0.2			29.0	
16:00	30.0										30.0	
17:00	31.0										31.0	
18:00	32.0										32.0	
19:00	33.0										33.0	
20:00	34.0		S-12	SS	8 13 13 15	1.2	0.2	0.2			34.0	
21:00	35.0										35.0	
22:00	36.0										36.0	
23:00	37.0										37.0	
24:00	38.0										38.0	
25:00	39.0		S-13	SS	28 22 31 34	1.0	0.2	0.2			39.0	
26:00	40.0										40.0	
27:00	41.0										41.0	
28:00	42.0										42.0	
29:00	43.0										43.0	
30:00	44.0		S-14	SS	17 31 31 33	1.1	0.2	0.2			44.0	
31:00	45.0										45.0	
32:00	46.0										46.0	
33:00	47.0										47.0	
34:00	48.0										48.0	
35:00	49.0		S-15	SS	2 3 4 6	1.8	0.2	0.2			49.0	
36:00	50.0										50.0	
37:00	51.0										51.0	
38:00	52.0										52.0	

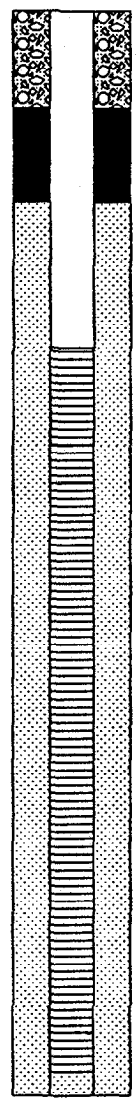
BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW03IW

SHEET: 3 OF: 3

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
36:00	50.0										50.0	
37:00	51.0									SAND: Fine grained, little to trace silt, light gray/light brown, damp to wet, medium dense/dense/very dense/loose	51.0	
38:00	52.0										52.0	
39:00	53.0										53.0	
40:00	54.0		S-16	SS	-	-	-	-		SAND: Fine grained, trace silt, trace shell fragments, light grayish green, wet, medium dense/dense/very dense	54.0	
41:00	55.0										55.0	
42:00	56.0										56.0	
43:00	57.0										57.0	
44:00	58.0										58.0	
45:00	59.0		S-17	SS	8 12 14 23	1.8	0.2	0.2			59.0	
46:00	60.0										60.0	
47:00	61.0										61.0	
48:00	62.0										62.0	
49:00	63.0										63.0	
50:00	64.0		S-18	SS	22 17 28 38	2.0	0.2	0.2			64.0	
51:00	65.0										65.0	
52:00	66.0										66.0	
53:00	67.0										67.0	
54:00	68.0										68.0	
55:00	69.0		S-19	SS	22 28 34 41	1.3	0.2	0.2			69.0	
56:00	70.0										70.0	
57:00	71.0										71.0	
58:00	72.0										72.0	
59:00	73.0									BOTTOM OF BOREHOLE 72.5'	73.0	
60:00	74.0									NOTES:	74.0	
61:00	75.0									1) Groundwater encountered @ 14.0' during drilling.	75.0	
62:00	76.0										76.0	
63:00	77.0										77.0	
64:00	78.0										78.0	
65:00	79.0										79.0	
66:00	80.0										80.0	
67:00	81.0										81.0	
68:00	82.0										82.0	



BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW04

SHEET 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/3/94 DATE COMPLETED: 11/3/94

GROUND SURFACE ELEVATION: 13.70' msl
TOP OF PVC CASING ELEVATION: 16.07' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	11.5
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	7.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
17:00	4.0										4.0	
16:00	3.0										3.0	
15:00	2.0										2.0	
14:00	1.0										1.0	
13:00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: Fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose to medium dense	0.0	
12:00	1.0		S-2	SS	3 3 5 7	1.6	0.2	0.2			1.0	
11:00	2.0		S-3	SS	3 7 8 11	1.1	0.1	0.1			2.0	
10:00	3.0										3.0	
9:00	4.0										4.0	
8:00	5.0		S-4	SS	4 6 10 14	1.5	0.2	0.2		SILTY CLAY: trace fine grained sand, brown, damp, stiff	5.0	
7:00	6.0										6.0	
6:00	7.0		S-5	SS	2 4 5 6	1.5	0.2	0.2			7.0	
5:00	8.0										8.0	
4:00	9.0		S-6	SS	1 3 3 3	1.5	0.2	0.2			9.0	
3:00	10.0										10.0	
2:00	11.0		S-7	SS	2 6 8 10	1.1	0.1	0.1		SILTY SAND: Fine grained, little clay, brown/ light gray, moist to wet, medium dense/loose	11.0	
1:00	12.0										12.0	
0:00	13.0		S-8	SS	2 4 4 4	1.3	0.1	0.1			13.0	
1:00	14.0										14.0	
2:00	15.0		S-9	SS	4 8 10 13	1.0	0.3	0.3		SAND: Fine to medium grained, trace silt, brown/light gray/light brown, wet, dense/ medium dense/loose	15.0	
3:00	16.0										16.0	
4:00	17.0		S-10	SS	9 18 15 19	1.5	0.3	0.3			17.0	
5:00	18.0										18.0	
6:00	19.0		S-11	SS	10 12 19 18	1.6	0.3	0.3			19.0	
7:00	20.0										20.0	
8:00	21.0		S-12	SS	7 13 19 17	1.0	0.2	0.3			21.0	
9:00	22.0										22.0	
10:00	23.0										23.0	
	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW04

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
6:00	20.0										20.0	
7:00	21.0				7 13 19 17					SAND: fine grained, trace silt, light brown, wet, medium dense to loose	21.0	
8:00	22.0		S-12	SS		1.0	0.2	0.3			22.0	
9:00	23.0				6 8 10 12						23.0	
10:00	24.0		S-13	SS		1.4	0.1	0.1			24.0	
11:00	25.0				9 6 3 3						25.0	
12:00	26.0		S-14	SS		1.1	0.1	0.1			26.0	
13:00	27.0									BOTTOM OF BOREHOLE @ 27.0'	27.0	
14:00	28.0									NOTES:	28.0	
15:00	29.0									1) Groundwater encountered @ 13.5' during drilling	29.0	
16:00	30.0										30.0	
17:00	31.0										31.0	
18:00	32.0										32.0	
19:00	33.0										33.0	
20:00	34.0										34.0	
21:00	35.0										35.0	
22:00	36.0										36.0	
23:00	37.0										37.0	
24:00	38.0										38.0	
25:00	39.0										39.0	
26:00	40.0										40.0	
27:00	41.0										41.0	
28:00	42.0										42.0	
29:00	43.0										43.0	
30:00	44.0										44.0	
31:00	45.0										45.0	
32:00	46.0										46.0	
33:00	47.0										47.0	
34:00	48.0										48.0	
35:00	49.0										49.0	
36:00	50.0										50.0	
37:00	51.0										51.0	
38:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW05

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.22' msl
TOP OF PVC CASING ELEVATION: 18.54' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	12.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	8.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
20-00	4.0										4.0	
19-00	3.0										3.0	
18-00	2.0										2.0	
17-00	1.0										1.0	
16-00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, trace of root material at surface, trace to little clay, dark brown/ brown, damp, very loose to medium dense	0.0	
15-00	1.0		S-2	SS	3 5 5 9	1.5	0.1	0.1			1.0	
14-00	2.0										2.0	
13-00	3.0		S-3	SS	5 8 14 9	1.2	0.2	0.2		SILTY CLAY: trace to little fine grained sand, brown/light gray, damp, stiff/medium dense/ very stiff	3.0	
12-00	4.0										4.0	
11-00	5.0		S-4	SS	13 14 18 15	1.7	0.2	0.2			5.0	
10-00	6.0										6.0	
9-00	7.0		S-5	SS	9 10 10 12	1.0	0.2	0.2			7.0	
8-00	8.0										8.0	
7-00	9.0		S-6	SS	4 10 10 12	1.7	0.2	0.2		SAND: fine grained, trace silt, brown/light gray, damp to wet, medium dense	9.0	
6-00	10.0										10.0	
5-00	11.0		S-7	SS	3 7 18 21	1.3	0.2	0.2			11.0	
4-00	12.0										12.0	
3-00	13.0		S-8	SS	3 5 12 11	1.0	0.2	0.2			13.0	
2-00	14.0										14.0	
1-00	15.0		S-9	SS	3 5 10 11	1.3	0.2	0.2			15.0	
0-00	16.0										16.0	
1-00	17.0		S-10	SS	6 11 12 17	1.2	0.2	0.2			17.0	
2-00	18.0										18.0	
3-00	19.0		S-11	SS	4 5 12 18	1.3	0.2	0.2			19.0	
4-00	20.0										20.0	
5-00	21.0		S-12	SS	4 5 8 7	1.2	0.2	0.2			21.0	
6-00	22.0										22.0	
7-00	23.0										23.0	
8-00	24.0									SAND: fine grained, trace to little silt, trace clay, light gray, wet, loose/medium dense	24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: BO-MW05

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
4:00	20.0										20.0	
5:00	21.0										21.0	
6:00	22.0		S-12	SS	4 5 8 7	1.2	0.2	0.2		SAND: Fine grained, trace silt, brown/light gray, damp to wet, medium dense	22.0	
7:00	23.0										23.0	
8:00	24.0		S-13	SS	2 4 5 2	1.1	0.2	0.2		SAND: Fine grained, trace to little silt, trace clay, light gray, wet, loose/medium dense	24.0	
9:00	25.0										25.0	
10:00	26.0		S-14	SS	4 5 8 5	1.3	0.2	0.2			26.0	
11:00	27.0										27.0	
12:00	28.0									BOTTOM OF BOREHOLE @ 27.5'	28.0	
13:00	29.0									NOTES:	29.0	
14:00	30.0									1) Groundwater encountered @ 14' during drilling	30.0	
15:00	31.0										31.0	
16:00	32.0										32.0	
17:00	33.0										33.0	
18:00	34.0										34.0	
19:00	35.0										35.0	
20:00	36.0										36.0	
21:00	37.0										37.0	
22:00	38.0										38.0	
23:00	39.0										39.0	
24:00	40.0										40.0	
25:00	41.0										41.0	
26:00	42.0										42.0	
27:00	43.0										43.0	
28:00	44.0										44.0	
29:00	45.0										45.0	
30:00	46.0										46.0	
31:00	47.0										47.0	
32:00	48.0										48.0	
33:00	49.0										49.0	
34:00	50.0										50.0	
35:00	51.0										51.0	
36:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW06

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: M.K. DeJOHN
ENV. SCIENTIST: M.D. SMITH
DATE BEGUN: 11/5/94 DATE COMPLETED: 11/5/94

GROUND SURFACE ELEVATION: 17.06' msl
TOP OF PVC CASING ELEVATION: 19.42' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	11.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	7.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	18.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
21:00	4.0										4.0	
20:00	3.0										3.0	
19:00	2.0										2.0	
18:00	1.0										1.0	
17:00	0.0		S-1	SS	-	-	0.0	0.0			0.0	
16:00	1.0		S-2	SS	7 8 7 9	1.2	0.0	0.0		SILT: trace to some clay, dark brown/ gray, damp, stiff	1.0	
15:00	2.0										2.0	
14:00	3.0		S-3	SS	6 5 5 6	1.5	0.0	0.0			3.0	
13:00	4.0										4.0	
12:00	5.0		S-4	SS	3 6 7 8	1.4	0.0	0.0		SILTY CLAY: brown/gray/orange, damp, stiff	5.0	
11:00	6.0										6.0	
10:00	7.0		S-5	SS	7 9 9 12	1.9	0.0	0.0			7.0	
9:00	8.0										8.0	
8:00	9.0		S-6	SS	10 11 11 12	1.4	0.0	0.0		SAND: fine to medium grained, little to some silt, tan/orange/gray, damp to wet, medium dense	9.0	
7:00	10.0										10.0	
6:00	11.0										11.0	
5:00	12.0		S-7	SS	6 8 10 13	1.1	0.0	0.0			12.0	
4:00	13.0										13.0	
3:00	14.0		S-8	SS	7 8 4 2	1.8	0.0	0.0			14.0	
2:00	15.0										15.0	
1:00	16.0		S-9	SS	WOH 1 2 3	1.1	0.0	0.0		CLAY: trace silt, trace fine grained sand @ 18.0', wet, medium dense	16.0	
0:00	17.0										17.0	
1:00	18.0		S-10	SS	4 4 7 10	2.0	0.0	0.0			18.0	
2:00	19.0										19.0	
3:00	20.0		S-11	SS	6 8 9 13	1.1	0.0	0.0		SAND: fine to medium grained, some to little silt, orange/brown/gray, wet, medium dense to dense	20.0	
4:00	21.0										21.0	
5:00	22.0		S-12	SS	9 17 28 33	1.1	0.0	0.0			22.0	
6:00	23.0										23.0	
7:00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW06

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
4:00	20.0										20.0	
5:00	21.0										21.0	
6:00	22.0		S-12	SS	9 17 28 33	1.1	0.0	0.0		SAND. Fine to medium grained, some to little silt, orange/brown/gray, wet, medium dense to dense	22.0	
7:00	23.0										23.0	
8:00	24.0		S-13	SS	12 19 22 24	1.0	0.0	0.0			24.0	
9:00	25.0										25.0	
10:00	26.0		S-14	SS	16 18 23 26	1.0	0.0	0.0			26.0	
11:00	27.0										27.0	
12:00	28.0									BOTTOM OF BOREHOLE @ 27.5'	28.0	
13:00	29.0									NOTES:	29.0	
14:00	30.0									1) Groundwater encountered @ 14.5' during drilling	30.0	
15:00	31.0										31.0	
16:00	32.0										32.0	
17:00	33.0										33.0	
18:00	34.0										34.0	
19:00	35.0										35.0	
20:00	36.0										36.0	
21:00	37.0										37.0	
22:00	38.0										38.0	
23:00	39.0										39.0	
24:00	40.0										40.0	
25:00	41.0										41.0	
26:00	42.0										42.0	
27:00	43.0										43.0	
28:00	44.0										44.0	
29:00	45.0										45.0	
30:00	46.0										46.0	
31:00	47.0										47.0	
32:00	48.0										48.0	
33:00	49.0										49.0	
34:00	50.0										50.0	
35:00	51.0										51.0	
36:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW07

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: HARDIN-HUBER, INC.
RIG TYPE & NUMBER: TRUCK RIG
DRILLING METHOD: AUGERS
WEATHER: SUNNY, HOT, HUMID
GEOLOGIST: J.E. ZIMMERMAN
ENV. SCIENTIST: L.H. JOHNSON
DATE BEGUN: 11/4/94 DATE COMPLETED: 11/4/94

GROUND SURFACE ELEVATION: 16.21' msl
TOP OF PVC CASING ELEVATION: 18.49' msl

WELL DETAILS (FT)

STICKUP:	2.5
LENGTH OF RISER (2"I.D.):	12.5
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	8.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.5

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
20-00	4.0										4.0	
19-00	3.0										3.0	
18-00	2.0										2.0	
17-00	1.0										1.0	
16-00	0.0		S-1	SS	-	-	0.2	0.2		SILTY SAND: fine grained, trace of root material at surface, trace to little clay, dark brown/brown, damp, very loose/medium dense/loose	0.0	
15-00	1.0		S-2	SS	4 5 6 7	0.8	0.2	0.2			1.0	
14-00	2.0										2.0	
13-00	3.0		S-3	SS	2 4 4 6	0.7	0.2	0.2			3.0	
12-00	4.0										4.0	
11-00	5.0		S-4	SS	3 4 8 9	1.1	0.2	0.2		SILTY CLAY: trace fine grained sand, brown/ light gray, damp, stiff/medium dense	5.0	
10-00	6.0										6.0	
9-00	7.0		S-5	SS	5 6 8 10	1.6	0.2	0.2			7.0	
8-00	8.0										8.0	
7-00	9.0		S-6	SS	8 9 9 10	1.6	0.2	0.2		SILTY SAND: fine grained, trace clay, light brown/ light gray, damp to moist, medium dense	9.0	
6-00	10.0										10.0	
5-00	11.0		S-7	SS	4 7 9 15	2.0	0.2	0.2			11.0	
4-00	12.0										12.0	
3-00	13.0		S-8	SS	4 9 10 10	1.6	0.2	0.2		SAND: fine grained, trace silt, light gray/buff, wet, medium dense/loose	13.0	
2-00	14.0										14.0	
1-00	15.0		S-9	SS	4 5 9 9	1.4	0.2	0.2			15.0	
0-00	16.0										16.0	
1-00	17.0		S-10	SS	3 2 5 10	1.2	0.2	0.2			17.0	
2-00	18.0										18.0	
3-00	19.0		S-11	SS	3 6 9 7	1.1	0.3	0.3			19.0	
4-00	20.0										20.0	
5-00	21.0		S-12	SS	10 15 14 9	1.1	0.2	0.2			21.0	
6-00	22.0										22.0	
7-00	23.0										23.0	
8-00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW07

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
1:00	20.0										20.0	
5:00	21.0				10					SAND: fine grained, trace silt, light gray/buff, wet, medium dense/loose	21.0	
6:00	22.0		S-12	SS	15 14 9	1.1	0.2	0.2			22.0	
7:00	23.0				6					SAND: fine to medium grained, trace silt, light gray, wet, medium dense	23.0	
8:00	24.0		S-13	SS	7 3 7	1.1	0.2	0.2			24.0	
9:00	25.0				4						25.0	
10:00	26.0		S-14	SS	2 2 1	1.8	0.2	0.2			26.0	
11:00	27.0										27.0	
12:00	28.0									BOTTOM OF BOREHOLE @ 28.0'	28.0	
13:00	29.0									NOTES:	29.0	
14:00	30.0									1) Groundwater encountered @ 14.5' during drilling	30.0	
15:00	31.0										31.0	
16:00	32.0										32.0	
17:00	33.0										33.0	
18:00	34.0										34.0	
19:00	35.0										35.0	
20:00	36.0										36.0	
21:00	37.0										37.0	
22:00	38.0										38.0	
23:00	39.0										39.0	
24:00	40.0										40.0	
25:00	41.0										41.0	
26:00	42.0										42.0	
27:00	43.0										43.0	
28:00	44.0										44.0	
29:00	45.0										45.0	
30:00	46.0										46.0	
31:00	47.0										47.0	
32:00	48.0										48.0	
33:00	49.0										49.0	
34:00	50.0										50.0	
35:00	51.0										51.0	
36:00	52.0										52.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW08

SHEET: 1 OF 2

PROJECT NUMBER: 62470-274
PROJECT NAME: SITE 80 - PARADISE POINT GOLF COURSE MAINTENANCE AREA
LOCATION: MCB CAMP LEJEUNE, NC
DRILLING COMPANY: PARRATT-WOLFF, INC
RIG TYPE & NUMBER: TRUCK RIG - CME 55
DRILLING METHOD: AUGERS
WEATHER: OVERCAST, COOL, DRIZZLE, BREEZY
GEOLOGIST: M. K. DEJOHN
ENV. SCIENTIST: -
DATE BEGUN: 6/13/95 DATE COMPLETED: 6/13/95

GROUND SURFACE ELEVATION: 15.00' msl
TOP OF PVC CASING ELEVATION: 17.33' msl

WELL DETAILS (FT)

STICKUP:	2.33
LENGTH OF RISER (2"I.D.):	10.0
LENGTH OF SCREEN (2"I.D.):	15.0
THICKNESS OF GROUT:	6.0
THICKNESS OF SEAL:	2.0
THICKNESS OF SAND PACK:	17.0

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO.	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
15:00	0.0		S-1	HA	-	-	1.1	1.1		SILTY SAND: fine grained, trace gravel, trace coarse sand, trace clay, brownish gray, damp	0.0	
14:00	1.0		S-2	SS	1 2 3 2	1.0	0.5	0.5		SANDY SILT: fine grained sand, trace to little clay, brown to orangish brown, damp, loose	1.0	
13:00	2.0										2.0	
12:00	3.0		S-3	SS	2 3 3 3	1.6	0.5	0.5			3.0	
11:00	4.0										4.0	
10:00	5.0		S-4	SS	5 4 5 5	1.8	0.6	0.6			5.0	
9:00	6.0										6.0	
8:00	7.0		S-5	SS	5 4 4 5	1.6	0.5	0.5			7.0	
7:00	8.0										8.0	
6:00	9.0		S-6	SS	3 3 2 3	1.7	0.5	0.5		CLAY: some to trace silt, little fine to medium grained sand @ 8.2-9', gray layers of rock fragments @ 9-13.8', reddish gray to orangish brown, damp to wet, medium stiff	9.0	
5:00	10.0										10.0	
4:00	11.0		S-7	SS	3 3 2 4	1.3	0.5	0.5			11.0	
3:00	12.0										12.0	
2:00	13.0		S-8	SS	2 3 3 5	1.8	0.4	0.4			13.0	
1:00	14.0										14.0	
0:00	15.0		S-9	SS	3 5 6 8	2.0	-	-		SILT: little clay and fine sand, gray, wet, medium stiff	15.0	
1:00	16.0									SAND: fine grained, trace to some silt, trace to little clay, gray w/iron staining/black and orangish brown, wet, medium dense/ loose @ 21-23'	16.0	
2:00	17.0										17.0	
3:00	18.0		S-10	SS	6 6 8 10	1.8	-	-			18.0	
4:00	19.0										19.0	
5:00	20.0		S-11	SS	9 11 16 19	2.0	-	-			20.0	
6:00	21.0										21.0	
7:00	22.0		S-12	SS	WOH WOH 2 3	1.0	-	-			22.0	
8:00	23.0										23.0	
9:00	24.0										24.0	

BAKER

WELL CONSTRUCTION LOG

BOREHOLE NUMBER: 80-MW08

SHEET: 2 OF: 2

ELEVATION	DEPTH	SOIL SAMPLES	SAMPLE NO	SAMPLE METHOD	BLOWS/0.5'	RECOVERY (FT)	PID (PPM) BG	PID (PPM) PS	LITHOLOGY	DESCRIPTION	DEPTH	WELL INSTALLATION
5:00	20.0										20.0	
6:00	21.0										21.0	
7:00	22.0		S-12	SS	WOH WOH 2 3	1.0	-	-		SAND: fine grained, trace to some silt, trace to little clay, gray w/iron staining/black and orangish brown, wet, medium dense/ loose @ 21-23'	22.0	
8:00	23.0										23.0	
9:00	24.0		S-13	SS	8 9 12 12	2.0	-	-			24.0	
10:00	25.0									BOTTOM OF BOREHOLE @ 25.0'	25.0	
11:00	26.0									NOTES: 1) Groundwater encountered @ 12.0' during drilling	26.0	
12:00	27.0										27.0	
13:00	28.0										28.0	
14:00	29.0										29.0	
15:00	30.0										30.0	
16:00	31.0										31.0	
17:00	32.0										32.0	
18:00	33.0										33.0	
19:00	34.0										34.0	
20:00	35.0										35.0	
21:00	36.0										36.0	
22:00	37.0										37.0	
23:00	38.0										38.0	
24:00	39.0										39.0	
25:00	40.0										40.0	
26:00	41.0										41.0	
27:00	42.0										42.0	
28:00	43.0										43.0	
29:00	44.0										44.0	
30:00	45.0										45.0	
31:00	46.0										46.0	
32:00	47.0										47.0	
33:00	48.0										48.0	
34:00	49.0										49.0	
35:00	50.0										50.0	
36:00	51.0										51.0	
37:00	52.0										52.0	