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STATEMENT OF WORK AND
TECHNICAL SPECIFICATIONS

REMEDICATION 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

Prepared by:

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

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- A Technical Specifications

STATEMENT OF WORK

General Intention

The general intention of this Time-Critical Removal Action (TCRA) is to provide and secure pesticide-contaminated soils removal and remediation for Site 80, Operable Unit No. 11, Marine Corps Base, Camp Lejeune, complete and ready for use. A TCRA is being conducted because the pesticide-contaminated soil may present an immediate threat to human health and the environment.

General Description

The TCRA design package (including a Basis of Design, Cost Estimate, Drawings, and this Statement of Work and Technical Specifications) 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 Requirement Package Guide, NEESA 20.2-062 dated June 1992 was used as a guidance.

The work required for this TCRA includes preparation of a work plan and submittals, and providing all labor, supervision, tools, materials, equipment and transportation necessary to execute the removal and remediation of pesticide-contaminated soil. Components of this project include, but are not limited to, obtaining the necessary work permits; location of any underground utilities; clearing and grubbing; excavation of contaminated soil in the areas indicated; transportation of contaminated soil to an off-site disposal/treatment facility; confirmatory soil sampling in the excavation areas; backfilling the excavation areas with clean soil; site restoration; and other related work.

Technical specifications for this TCRA are provided in Attachment A.

Description of Contaminants Present

At Site 80, the analytical work performed to date has identified pesticide contamination in surface soils (i.e., 0-1 feet below ground surface). The results of the chemical analyses for the surface soil samples are indicated in the reference documents. The pesticides detected include aldrin, dieldrin, 4,4'-DDD, 4,4'-DDT, alpha-chlordane and gamma-chlordane. The source of these contaminants may be the routine spraying of pesticides and herbicides or general operations associated with the on site maintenance facility.

Location

The work shall be located at the Marine Corps Base, Camp Lejeune, approximately as shown. The exact location shall be as indicated by the NTR.

Project Information

Drawings, Maps and Specifications

Four sets of contract drawings, maps and statement of work plans shall be furnished to the Contractor, except applicable publications incorporated into the technical provisions by reference. Additional sets shall be furnished on request at no additional charge. The work shall conform to the following contract drawings and maps, all of which are available in the office of the Navy's Technical Representative (NTR).

<u>Title</u>	<u>Sheet No.</u>
Cover Sheet and General Notes	T-1
Site Plan and Surface Soil Contaminant Levels	C-1
Excavation Plan	C-2

The work shall also conform to the specifications that are provided as an attachment to this document.

Reference Reports

The following reference reports are available for examination in the office of the NTR and are intended only to show the existing site conditions. The reports and drawings are the property of the Government and shall not be used for any purpose other than that intended by the specification.

Reports

- "Remedial Investigation Report, Operable Unit No. 11 (Site 80), Marine Corps Base, Camp Lejeune, North Carolina," Baker Environmental, Inc., 1995.
- "Preliminary Draft Site Inspection Report for Site 80 - Paradise Point Golf Course, Marine Corps Base, Camp Lejeune, North Carolina," Halliburton/NUS, 1991.

Project Schedule and Time Constraints

The Contractor shall be required to commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, prosecute the work diligently, and complete the entire work ready for use not later than 90 calendar days after receiving approval of the work plan. The time related for completion shall include final cleanup of the premises and the restoration of the site, but not the maintenance period for the seeding of disturbed areas. The Contractor shall notify the Base office for the golf course/golf course maintenance area a minimum of eight days prior to mobilization.

Safety Program

In addition to safety requirements in the Basic Contract, the Contractor shall implement a safety program conforming to the requirements of Federal, State, and local laws, rules and regulations. The program shall include, but is not limited to, Occupational Safety and Health Standards, COE EM-385-1-1, and NFPA 241.

ATTACHMENT A
TECHNICAL SPECIFICATIONS

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA

LANTDIV RAC Contract No.
N62470-93-D-3033

Appropriation: DERA

REMEDICATION OF PESTICIDE-CONTAMINATED SOIL
OPERABLE UNIT NO. 11 (SITE 80)
PARADISE POINT GOLF COURSE MAINTENANCE AREA
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA

Design by:

BAKER ENVIRONMENTAL, INC.
CORAOPOLIS, PENNSYLVANIA

Date: 12/15/95

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SECTION 01010

GENERAL PARAGRAPHS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	1992 Safety and Health Requirements Manual
COE EP 1110-1-8	1988 Construction Equipment Ownership and Operating Expense Schedule

MILITARY STANDARDS (MIL-STD)

MIL STD 461	(Rev C) (Notice 2) Electromagnetic Emission and Susceptibility Requirements for the Control of Electromagnetic Interference
MIL STD 462	(Notice 6) Measurement of Electromagnetic Interference Characteristics

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241	1989 Safeguarding Construction, Alteration, and Demolition Operations
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1.2 PRECONSTRUCTION SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.2.1 SD-09, Reports

a. Work Plan G

1.2.1.1 Work Plan

Within 60 days of issuance of the delivery order, submit a work plan consisting of the following elements.

a. Narrative

Provide a brief description of the project objectives, scheduling, sampling and analysis requirements, decontamination procedures, removal and excavation procedures, and storage, transportation, and treatment requirements; and a detailed sequence of events for the construction, extraction, and treatment methods.

b. Technical Specifications

Provide, in an amendment format, any additions and modifications to the contract specifications required to accurately describe the materials and work procedures envisioned to satisfy the requirements of the delivery order. Contact Code 406, Specifications Branch, Engineering and Design Division, LANTNAVFACENCOM, (804) 322-4406, for availability of guide specification sections for those sections required, but not included in the contract documents.

c. Shop Drawings

Shop drawings shall detail and describe all components of the project not currently indicated on the contract drawings such that the shop drawings and the contract drawings, when taken together, provide a complete representation of the project requirements. Shop drawings shall be prepared and sealed by a registered professional engineer. Shop drawings shall include:

- 1) An Erosion Control Plan in accordance with State and local regulations, consisting of site plans indicating locations of erosion control features during the various stages of construction, details of erosion control features, and applicable notes.
- 2) Civil/Structural drawings providing details of site work.

d. Environmental Protection Plan

Within 15 days of issuance of the delivery order, meet with the Navy's Technical Representative (NTR) to discuss environmental protection requirements for the project. After meeting with the NTR, prepare and submit an Environmental Protection Plan in Accordance with Section C, Part 4.0, of the Basic Contract.

In addition to items specified in Section C, Part 4.0 of the Basic Contract, the Environmental Protection Plan shall address:

1. Safety Program G
2. Erosion and Sediment Inspection Reports G

e. Site Health and Safety Plan

Provide a site specific health and safety plan (HASP) in accordance with Section C, Part 3.0, of the Basic Contract. The HASP will include but will not be limited to the following:

Names of the Health and Safety officer and names of alternates responsible for Health and Safety.

Description of the levels of personal protection to be used for each task.

A description of the frequency and types of personal monitoring.

Employee training.

A description of environmental sampling techniques and instrumentation.

Site control measures.

Decontamination procedures.

Standard Health and Safety operating procedures.

Contingency plan.

f. QC Plan

Provide a QC Plan in accordance with Section C, Part 6.0, of the Basic Contract.

(1) Submittal Register

As part of the QC Plan, submit a completed Submittal Register to document quality control for materials, inspection, and testing in accordance with Section C, Part 7.0 of the Basic Contract. A copy of the Submittal Register is provided at the end of this section (Attachment 01010-A).

(2) Testing Laboratory Qualifications

As part of the QC Plan, submit qualifications for each laboratory which shall be used in accordance with Section C, Part 6.0, of the Basic Contract.

g. Sampling and Analysis Plan

Provide a Sampling and Analysis Plan describing all sampling and analyses requirements for the delivery order. The Plan shall contain a field sampling plan and a quality assurance plan.

1.2.2 Forwarding Preconstruction Submittals

Within 60 days of issuance of the delivery order, and before procurement, fabrication, or mobilization, submit to the Architect-Engineer, Baker Environmental, Inc., Airport Office Park, Building 3, 420 Rouser Road, Coraopolis, Pa 15108, and to distribution as directed by the NTR, the preconstruction submittals required in this specification. The Architect/Engineer for this project shall review the Work Plan for the NTR to determine compliance of the Contractor's Work Plan with the requirements of the contract documents for this delivery order.

1.2.3 Review Comments

The Contractor's Work Plan shall be reviewed. The NTR shall compile and coordinate all Government review comments, and forward consolidated review comments to the Contractor. Review comments on the Work Plan shall be resolved, and submittals modified as required. After the correction of the submittals, submit one final copy of the Work Plan to the NTR for final review. The Work Plan shall be approved prior to commencement of any other work associated with this delivery order.

1.3 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.3.1 SD-18, Records

- a. As Built Records
- b. Environmental Conditions Report
- c. Network Analysis Diagram
- d. Status Reports
- e. QC Meeting Minutes
- f. Test Results Summary Report
- g. Contractor Production Report
- h. QC Report
- i. Rework Items List
- j. Permits
- k. Contractor's Closeout Report

1.3.1.1 As Built Records

Maintain two sets of full size contract drawings and two sets of full size approved shop drawings marked to show any deviations which have occurred, including buried or concealed construction and utility features revealed during the course of construction. Record horizontal and vertical locations of buried utilities that differ from the contract drawings. These drawings shall be available for review by the NTR at any time. At the completion of the work, deliver marked sets of the contract drawings to the NTR. The Contractor shall incorporate all shop drawing deviations, and deliver one complete set of reproducible mylars of the shop drawings to the NTR.

1.3.1.2 Environmental Conditions Report

Prior to starting work, perform a preconstruction survey with the NTR. Take photographs showing existing environmental conditions on and adjacent to the site. Prior to starting work, submit the results of the survey in an Environmental Condition Report to the NTR.

1.3.1.3 Contract Management System (CMS)

The CMS shall be a system able to provide, as a minimum, the activities in sorts or groups as specified in the Basic Contract and any subsequent Delivery Orders.

a. Network Analysis Diagram

Within 30 days of approval of the Contractor's Work Plan, submit a Network Analysis Diagram in accordance with the Basic Contract and any subsequent Delivery Orders.

b. Status Reports

All Status Reports shall comply with the Basic Contract and any subsequent Deliver Orders. Submit a Technical Progress Report, Cost Performance Report, Modification Log, Time-Scaled Logic Diagram, Government Materials Tracking Report, Variance Analysis Report, and Waste Materials Report. Submit the first delivery order Status Report approximately 30 days after approval of the Contractor's Work Plan. Thereafter, submit Status Reports every 30 days. Status report periods shall be consistent with the invoice reporting periods.

1.3.1.4 QC Meeting Minutes

The QC Representative shall document all QC meetings by delivering copies of the minutes to the NTR within 3 calendar days after each QC meeting. The submittals shall comply with Section C, Part 6.0 of the Basic Contract.

1.3.1.5 Test Results Summary Report

A summary report of all field tests and laboratory analytical results shall be submitted to the NTR within 30 days after laboratory receipt of samples and in accordance with Section C, Part 6.0 of the Basic Contract.

1.3.1.6 Contractor Production Report (CPR)

The CPR shall be prepared and submitted daily to the NTR in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.7 QC Report

The QC Report shall be submitted by the QC Representative to the NTR every day work is performed, material is delivered, direction is pending, or a labor force is present in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.8 Rework Items List

The QC Representative shall deliver a copy of the rework items list to the NTR on a monthly basis in accordance with Section C, Part 6.0, of the Basic Contract.

1.3.1.9 Permits

Fifteen days prior to beginning onsite work, submit draft copies of the following permits required for onsite activities:

- a. Excavation Permit; from the Public Works Officer, Utilities Division

1.3.1.10 Contractor's Closeout Report

Submit upon completion of the project. This report shall include: Introduction, Summary of Action, Final Health and Safety Report, Summary of Record Documents, Field Changes and Contract Modification, Final Documents, Complete Set of all Field Test and Laboratory Analytical Results, Complete Set of All Data Validation Results, Offsite Transportation and Treatment of Materials, and QC Summary Report.

1.3.2 Forwarding Submittals

After approval of the work plan, and before procurement or fabrication, submit, except as specified otherwise, to the Architect-Engineer, Baker Environmental, Inc., Airport Office Park, Building #3, 420 Rouser Road, Coraopolis, PA 15108, the submittal required in this specification. The Architect-Engineer for this project shall review and provide surveillance for the NTR to determine if Contractor-approved submittals comply with the contract requirements, and shall review and approve for the NTR those submittals not permitted to be Contractor approved to determine if submittals comply with the contract requirements. At each "Submittal" paragraph in the individual specification sections, a notation "G", following a submittal item, indicates the Architect-Engineer, acting as the agent for the NTR, is the approving authority for that submittal item. One copy of the transmittal form for submittals shall be forwarded to the NTR.

1.4 GENERAL INTENTION

It is the declared and acknowledged intention and meaning to provide and secure pesticide-contaminated soils removal and remediation for Site 80, Operable Unit No. 11, Marine Corps Base, Camp Lejeune, complete and ready for use.

1.5 GENERAL DESCRIPTION

This work includes preparation of a work plan and submittals previously described, and providing all labor, supervision, tools, materials, equipment and transportation necessary to execute the removal and remediation of pesticide-contaminated soil. Components of this project include but are not limited to: obtaining the necessary work permits; location of any underground utilities; clearing and grubbing; excavation of contaminated soil in the areas indicated; transportation of contaminated

soil to an off site disposal facility; confirmatory soil sampling; backfilling with clean soil; site restoration; and other related work.

1.6 DESCRIPTION OF CONTAMINANTS PRESENT

At Site 80, the analytical work performed to date has identified pesticide contamination in surface soils (i.e., 0-1 feet below ground surface). The results of the chemical analyses for the surface soil samples are indicated in the reference documents. The pesticides detected include aldrin, dieldrin, 4,4'-DDD, 4,4'-DDT, alpha-chlordane and gamma-chlordane. The source of these contaminants may be the routine spraying of pesticides and herbicides or general operations associated with the onsite maintenance facility. Boring logs for soil borings advanced at the site are provided in the Basis of Design report.

1.7 LOCATION

The work shall be located at the Marine Corps Base, Camp Lejeune, approximately as shown. The exact location shall be as indicated by the NTR.

1.8 PROJECT INFORMATION

1.8.1 Drawings, Maps and Specifications

Four sets of contract drawings, maps and specifications shall be furnished to the Contractor, except applicable publications incorporated into the technical provisions by reference. Additional sets shall be furnished on request at no additional charge. The work shall conform to the following contract drawings and maps, all of which form a part of these specifications and are available in the office of the NTR.

<u>Title</u>	<u>Sheet#</u>
Cover Sheet and General Notes Site Plan and Surface Soil	T-1
Contaminant Levels	C-1
Excavation Plan	C-2

1.8.2 Reference Report

The following reference reports are available for examination in the office of the NTR and are intended only to show the existing conditions. The reports and drawings are the property of the Government and shall not be used for any purpose other than that intended by the specification.

Reports

- A. "Remedial Investigation Report, Operable Unit No.11 (Site 80), Marine Corps Base, Camp Lejeune, North Carolina", Baker Environmental, Inc., 1995.
- B. "Preliminary Draft Site Inspection Report for Site 80 - Paradise

Point Golf Course, Marine Corps Base, Camp Lejeune, North Carolina", Halliburton/NUS, 1991.

1.9 PROJECT SCHEDULE AND TIME CONSTRAINTS

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 90 calendar days after receiving approval of the work plan. The time stated for completion shall include final cleanup of the premises and the restoration of the site, but not the maintenance period for the seeding of disturbed areas. Notify the Base office for the golf course/golf course maintenance area a minimum of eight days prior to mobilization.

1.10 SAFETY PROGRAM

In addition to safety requirements in the Basic Contract, the Contractor shall implement a safety program conforming to the requirements of Federal, State, and local laws, rules and regulations. The program shall include, but is not limited to, the following:

- a. Occupational Safety and Health Standards
- b. COE EM-385-1-1
- c. NFPA 241

PART 2 PRODUCTS

2.1 SAFETY FENCING

Safety Fencing shall be orange, high density, ultraviolet stabilized polyethylene, at least four feet in height.

PART 3 EXECUTION

3.1 FACILITIES AND SERVICES

The Contractor shall provide all temporary facilities required for the proper completion of the work, as necessary and as specified.

3.1.1 Availability of Utilities Services

- a. Government utilities shall be made available without charge.
- b. The Government shall supply potable water required to perform work to the Contractor. The water source location will be as directed by the NTR. Work shall be coordinated with the Base Civil Engineer. The Contractor shall provide all piping, hoses, pumps, and connections to transport water to the desired locations on site. The Contractor shall also provide a backflow-prevention device at the water source.
- c. The Government shall supply reasonable amounts of electricity to

the Contractor. The Contractor shall provide all equipment and labor necessary to connect, convert, and transfer the utilities to the work. The Contractor shall make connections and disconnections.

- d. The Contractor shall not operate nor disturb the setting of control devices in the Base utilities system, including water, sewer, electrical, and steam services. The Government shall operate the control devices as required for normal conduct of the work. The Contractor shall notify the NTR, giving 15 days advance notice when such operation is required.
- e. The Contractor shall contact Base Telephone Services in writing to obtain telephone connection. The Contractor shall provide all equipment and labor necessary to connect the telephone service to the site. The Contractor shall make arrangements for connections and disconnections and payments.

3.1.2 Storage in Existing Buildings

Storage in existing buildings shall not be allowed.

3.1.3 Open Site Storage Size and Location

The open site available for storage/laydown/decontamination shall be confined to the areas indicated by the NTR.

3.1.4 Trailers, Storage, and Temporary Buildings

Locate trailers, storage, and temporary buildings where directed and within the indicated operations area. Trailers or storage buildings shall be permitted where space is available subject to the approval of the NTR. The trailers or storage buildings shall be suitably painted and kept in a good state of repair. Failure of the Contractor to maintain the trailers or storage buildings in good condition shall be considered sufficient reason to require their removal. Trailers shall be anchored to resist high winds and must meet applicable State or local standards for anchoring mobile trailers.

3.1.4.1 Storage and Office Trailers

Trailers must meet State law and Base requirements and must be in good condition. Trailers shall be lockable and shall be locked when not in use. Trailers shall have a sign not smaller than 24 inches by 24 inches in the lower left hand corner of the left trailer door with the following information: company name, address, registration number of trailer or vehicle identification number, location on base, duration of contract or stay on-base, contract number, local on-base phone number, off-base phone number of main office, and emergency recall person and phone number.

3.1.5 Cleaning Up

During the progress of the remediation, the work area and adjacent areas shall be kept clean and free of all rubbish, surplus materials, and unneeded construction equipment.

No material or debris shall be allowed to flow or wash into watercourses, ditches, gutters, drains, or pipes.

The Contractor shall remove all temporary buildings and structures built under this contract on or before the completion of the work.

All materials and equipment installed by the Contractor or any subcontractors shall be thoroughly clean. Upon completion of the work, the Contractor shall deliver it undamaged and in fresh and new-appearing condition.

The Contractor shall restore or replace, when and as directed by the NTR, any property damaged by the contract work and equipment or by employees. The property shall be restored in a condition at least equal to that existing prior to the beginning of construction operations. Suitable materials, equipment, and methods shall be used for such restoration. The restoration of property shall be done promptly and shall not be left until the end of the contract period.

3.2 RESTRICTIONS ON OPERATIONS

3.2.1 Scheduling

The Marine Corps Base, Camp Lejeune, North Carolina shall remain in operation during the entire construction period. The Contractor shall schedule the work as to cause the least amount of interference with Base operations. Work schedules shall be subject to the approval of the NTR. Permission to interrupt Base roads shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption. Notify the NTR 48 hours prior to starting excavation.

3.2.2 Regular Work Hours

The regular work hours for the Marine Corps Base, Camp Lejeune, North Carolina are 0645 to 1615, Monday through Friday.

3.2.3 Work Outside Regular Hours

If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, the Contractor shall submit an application to the NTR. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, the Contractor shall light the different parts of the work in an approved manner.

3.2.4 Security Requirements

The Contractor shall comply with the general security requirements as stipulated in Section C of the Basic Contract. No employee or representative of the Contractor will be admitted to the work site without satisfactory proof of United States citizenship or specified authorization from the NTR for admittance to the work site.

3.3 ACTIONS REQUIRED OF THE CONTRACTOR

The Contractor shall comply with all requirements stated in Section C, Part 2.0 of the Basic Contract.

3.3.1 Base Permits

Permits are required for, but not necessarily limited to, welding, digging, and burning. Allow 7 calendar days for processing of the application. One copy of all applicable permits shall be posted at the job site.

3.4 PUBLIC RELEASE OF INFORMATION

The Contractor shall comply with all requirements stipulated in Section C, Part 2.0 of the Basic Contract.

3.5 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined in Section C of the Basic Contract with additional requirements as follows:

- a. Provide 24 hour advance written notice to the NTR of Contractor's intention to dispose of off-Base.
- b. Disposal at facilities not holding a valid State of North Carolina permit is specifically prohibited. The prohibition also applies to sites where a permit may have been applied for but not yet obtained.
- c. Off-Base disposal of construction debris outside the parameters of this paragraph at sites without state permits and/or not in accordance with all regulatory requirements shall require the Contractor at his own expense to remove, transport, and relocate the debris to a state approved site. The Contractor shall also be required to pay any fines, penalties, or fee related to the illegal disposal of construction debris.

3.6 PUBLIC SAFETY MEASURES

3.6.1 Safety Fencing

Safety fencing shall be installed around the excavation areas as indicated.

3.6.2 Safety Drums

Safety drums shall be installed in front of the safety fences that encompass the excavation areas.

3.7 REQUIRED INSURANCE

Insurance requirements from Section H of the Basic Contract are enforced in their entirety.

3.8 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

Whenever a contract or modification of contract price is negotiated, the Contractor's cost proposal for equipment ownership and operating expenses shall be determined in accordance with the following requirements. A copy of COE EP 1110-1-8 is available for review at:

OICC ROICC
NAVFACENGCOM Contracts
1005 Michael Road
Camp Lejeune, North Carolina 28547-2521

- a. Allowable cost for construction, marine plant, and equipment in workable condition, owned or controlled, and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data when the Government can determine both ownership and operating costs for equipment or equipment groups of similar serial numbers and series from the Contractor's accounting records. When both ownership and operating costs cannot be determined from the Contractor's accounting records, equipment costs shall be based on the applicable provisions of COE EP 1110-1-8, Region III, using the appropriate schedule. Working conditions shall be considered to be average for determining equipment rates using the schedule unless otherwise specified by the NTR. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retrospective pricing, the schedule in effect at the time the work was performed shall apply.
- b. Equipment rental costs are allowable, subject to FAR 31.105(d)(2)(ii) and FAR 31.205-36, when substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease purchase, or sale-lease back arrangements will be determined using the schedule. However rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated leasees shall not be allowed. Costs for major repairs and overhaul are not allowed.
- c. When actual equipment costs are proposed and the total amount of the pricing action is over \$25,000, submit cost or pricing data on Standard Form 1411, "Contract Pricing Proposal Cover Sheet." By submitting cost or pricing data, the Contractor grants to the Contracting Officer or an authorized representative the right to

examine those books, records, documents, and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate, complete, and current.

3.9 FIRE PROTECTION

3.9.1 Compliance

COE EM-385-1-1, NFPA 241, and activity fire regulations. Obtain approval from the activity Fire Chief prior to commencement of hot work operations.

3.9.2 Notification of Fire

Post the activity fire poster in a conspicuous location and at telephones in construction shacks.

3.10 QUARANTINE FOR IMPORTED FIRE ANT (4/82)

Onslow, Jones, and Cartaret Counties and portions of Duplin and Craven Counties have been declared a generally infested area by the United States Department of Agriculture (USDA) for the imported fire ant. Compliance with the quarantine regulations established by this authority as set forth in USDA Quarantine No. 81 dated 9 October 1970, and USDA Publication 301.81-2A of 23 July 1976, is required for operations hereunder. Pertinent requirements of the quarantine for materials originating of the Camp Lejeune reservation, the Marine Corps Air Station (Helicopter), New River and the Marine Corps Air Station and Cherry Point, which are to be transported outside Onslow County or adjacent suppression areas, include the following:

- a. Certification is required for the following articles and they shall not be moved from the reservation to any point outside Onslow County and adjacent designated areas unless accompanied by a valid inspection certificate issued by an Officer of the Plant Protection and Quarantine Program of the U.S. Department of Agriculture.
 - (1) Bulk Soil,
 - (2) Used mechanized soil-moving equipment. (Used mechanized soil-moving equipment is exempt if cleaned of loose noncompacted soil).
 - (3) Other products, articles, or means of conveyance, if it is determined by an inspector that they present a hazard of transporting spread of the imported fire ants and the person in possession thereof has been so notified.
- b. Authorization for movement of equipment outside the imported fire and regulated area shall be obtained from USDA, APHIS, PPQ, Box 83, Goldsboro, North Carolina, 27530, Attn: Mr. Haywood Cox, telephone (919) 735-1941. Requests for inspection shall be made sufficiently in advance of the date of movement to permit arrangements for the services of authorized inspectors. The equipment shall be prepared

and assembled so that it may be readily inspected. Soil on or attached to equipment, supplies, and materials shall be removed by washing with water or such other means as necessary to accomplish complete removal. Resulting spoil shall be wasted as necessary and as directed.

-- End of Section --

Contract Number: _____ | Project Title: Remediation of Pesticide - Contaminated So _____

SPEC SECTION NO.	SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT	SPEC PARA NO.	CLASSIF/ APPR BY CO *	GOVT OR A/E REVIEWER	TRANS CONTROL NO.	PLANNED SUBMITTAL DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1) 01010	SD-09, Reports	1.2.1				
2)	Work Plan	1.2.1.1	G			
3) 01010	SD-18, Records	1.3.1				
4)	As Built Records	1.3.1.1				
5)	Environmental Conditions Report	1.3.1.2				
6)	Network Analysis Diagram	1.3.1.3				
7)	Status Reports	1.3.1.3				
8)	QC Meeting Minutes	1.3.1.4				
9)	Test Results Summary Report	1.3.1.5				
10)	Contractor Production Report	1.3.1.6				
11)	QC Report	1.3.1.7				
12)	Rework Items List	1.3.1.8				
13)	Permits	1.3.1.9				
14)	Contractor's Closeout Report	1.3.1.10				
15) 01430	SD-08, Statements	1.2.1				
16)	Sample Log	3.1.3				
17) 01430	SD-12, Field Test Reports	1.2.2				
18)	Confirmation Sampling	1.3.3				
19) 01561	SD-02, Manufacturer's Catalog Data	1.3.1				
20)	Silt Fence	2.1				

* Navy Notes:
Approved by:
G: NTR
Blank: CQC Manager

* NASA Notes:
Approved by:
Blank: Contracting Officer

* Army Notes:
Classification:
GA: Gov't Approval
FIO: For Information Only

Contract Number:

Project Title: Remediation of Pesticide - Contaminated So

SPEC SECTION NO.	SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT	SPEC PARA NO.	CLASSIF/ APPR BY CO *	GOVT OR A/E REVIEWER	TRANS CONTROL NO.	PLANNED SUBMITTAL DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1)	Dust Suppressors	2.2.3				
2) 01561	SD-04, Drawings	1.3.2				
3)	Erosion Control Plan	1.3.2.1	G			
4) 02102	SD-14, Samples	1.1.1				
5)	Tree wound paint	2.1				
6) 02220	SD-04, Drawings	1.3.1				
7)	Required Data	1.3.1.1				
8) 02220	SD-09, Reports	1.3.2				
9)	Remediation Closeout Report	1.3.2.1				
10) 02220	SD-12, Field Test Reports	1.3.3				
11)	Fill and backfill	2.1.2				
12) 02223	SD-08, Statements	1.1.1				
13)	Treatment facility permit	1.1.1.1				
14) 02223	SD-18, Records	1.1.2				
15)	Shipment manifests	1.1.2.1				
16)	Delivery certificates	1.1.2.2				
17)	Disposal Site Decontamination	1.1.2.3				
18)	certificate					
19)	Work Site Decontamination	1.1.2.4				
20)	certificate					

* Navy Notes:

Approved by:

G: NTR

Blank: CQC Manager

* NASA Notes:

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SPEC SECTION NO.	SD NO, AND TYPE OF SUBMITTAL MATERIAL OR PRODUCT	SPEC PARA NO.	CLASSIF/ APPR BY CO *	GOVT OR A/E REVIEWER	TRANS CONTROL NO.	PLANNED SUBMITTAL DATE
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1)	Treatment and Disposal	1.1.2.5				
2)	Certificates					

* Navy Notes:
 Approved by:
 G: NTR
 Blank: CQC Manager

* NASA Notes:
 Approved by:
 Blank: Contracting Officer

* Army Notes:
 Classification:
 GA: Gov't Approval
 FIO: For Information Only

SECTION 01430

WASTE SAMPLING REQUIREMENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA)

EPA/540/P-91/008	Compendium of ERT Waste Sampling Procedures, 1991
EPA SW-846	Test Methods for Evaluating Solid Wastes (Nov. 1986)

NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY (NEESA)

NEESA 20.2-047B	Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program (June 1988)
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1.2 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.2.1 SD-08, Statements

a. Sample Log

1.2.2 SD-12, Field Test Reports

a. Confirmation Sampling Analysis Results

1.3 DEFINITIONS

1.3.1 Contractor Generated Wastes

Contractor generated wastes shall include all materials which become contaminated with wastes as defined in the Basic Contract as a result of Contractor activity at the site after the commencement of contract work.

1.3.2 Government Generated Wastes

Government generated wastes shall include all contaminated materials existing at the site prior to the commencement of contract work.

1.3.3 Confirmation Sampling

Confirmation sampling shall include all sampling conducted in the open excavations during the post-removal stage to confirm the removal of all

pesticide-contaminated soil.

1.4 DESCRIPTION OF WORK

1.4.1 Contractor Generated Wastes

Collect and analyze environmental samples from each Contractor generated waste stream to determine applicable transportation and disposal requirements.

1.4.2 Government Generated Waste

Collect and analyze environmental samples from the excavated areas after Government generated waste has been removed to confirm the removal of all contaminated soil.

1.5 QUALITY ASSURANCE

1.5.1 Waste Sampling

Adhere to all sample acquisition, handling, custody documentation, decontamination, and quality assurance/quality control (QA/QC) requirements and procedures as required by federal, state and local regulations.

1.5.2 Analytical Laboratory

The Contractor shall be solely responsible for the execution and accuracy of the waste stream analyses. The Contractor shall use a NEESA-certified laboratory for all soil and waste analyses. All analytical standard methods shall meet, at a minimum, NEESA 20.2-047B QA/QC Level C requirements for confirmation sampling and shall also be in accordance with federal, local and state regulations.

1.5.3 Data Validation

An independent firm shall be subcontracted for data validation. Samples collected shall be evaluated using Level C quality control. Data review procedures specified by NEESA 20.2-047B and the Functional Guidelines established by EPA Region IV shall be followed to ensure that raw data are not altered and that an audit trail is developed for those data which require reduction. Specific Quality Assurance/Quality Control (QA/QC) procedures shall be included in the Sampling and Analysis Plan indicated in Section 01010. Data validation results shall be provided in the Contractor's Closeout Report as indicated in Section 01010, "General Paragraphs."

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 GENERAL

Supply all personnel, equipment, and facilities to collect and analyze the environmental samples required.

3.1.1 Sample Acquisition

Sampling procedures shall be consistent with NEESA 20.2-047B Guidelines.

After the excavation has been completed:

- a. Visually inspect the area for stained or discolored soil.
- b. If no stained or discolored soil is visible, collect one confirmation sample for every part of or every 500 square feet of excavation, and one sample for any portion of or every 50 linear feet of each sidewall of each excavation.
- c. Place the samples in an appropriate sample container for shipment for off-site confirmation analyses.
- d. If stained soils are visible, or if pesticide-contamination is suspected, notify the Navy's Technical Representative (NTR) and the Activity.

3.1.1.1 Confirmation Samples

Confirmation samples shall be collected from the walls and the bottom of the open excavations. One sample for every 500 square feet or fraction thereof of soil along the bottom of the excavation and one sample for every 50 linear feet or fraction thereof of soil along each excavation sidewall shall be collected. All confirmation samples shall be analyzed for target compound list (TCL) pesticides using EPA Method 8080.

If detected concentrations exceed the following levels, notify the NTR. If the concentrations are less than the following levels, no further excavation is required.

<u>Contaminant of Concern</u>	<u>Remediation Level (mg/kg)</u>
Aldrin	35
Dieldrin	37
4,4'-DDD	2,484
4,4'-DDT	1,753
alpha-Chlordane	459
gamma-Chlordane	459

3.1.1.2 Contractor Generated Waste Samples

Collect samples from Contractor generated waste to determine applicable transportation and disposal requirements. Analyze Contractor generated waste samples for the following parameters:

1. TAL Metals - EPA Methods 6010, 7060, 7080, 7131, 7191, 7421, 7470,

7760, 7740

2. TCL Volatiles - EPA Method 3550/EPA Method 8240
3. TCL Semi-Volatiles - EPA Method 3550/EPA Method 8270
4. TCL Pesticides/PCBs - EPA Method 3550/EPA Method 8080

3.1.2 Sample Handling

Sampling, sample handling, and sampling containers must be consistent with the chemicals expected, the matrix of the sample, and planned analytical procedures. Precleaned glass sample containers with teflon lids are required.

The Contractor shall describe in the Sampling and Analysis Plan strict chain-of-custody procedures to be used during collection, transport, and analysis of all samples.

3.1.3 Sampling Documentation

Maintain a sample log containing, at a minimum, the following information:

- a. Date and Time of Sampling
- b. Sample Locations
- c. Sample Matrix
- d. Sample Identification Number
- e. QA/QC Sample Identification
- f. Analyses to be Performed
- g. Type and Number of Sample Containers
- h. Signatures of Individuals Performing Sampling

-- End of Section --

SECTION 01561

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

FEDERAL SPECIFICATIONS (FS)

FS O-F-241 (Rev.D) Fertilizers; Mixed, Commercial

U.S. ARMY CORPS OF ENGINEERS (CW) PUBLICATIONS

CW 02215 1977 Plastic Filter Fabric

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M182 1960 (Rev. 1982) Burlap Cloth Made From Jute or Kenaf

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A185 1985 Steel Welded Wire, Fabric, for Concrete Reinforcement

ASTM C33 1990 Concrete Aggregate

ASTM D98 1987 Calcium Chloride

ASTM D1682 1964 (Rev.1985) Breaking Load and Elongation of Textile Fabrics

ASTM D3786 1987 Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method

1.2 DESCRIPTION OF WORK

The work includes the provision of temporary erosion control measures to prevent the pollution of air, water, and land within the project limits and in areas outside the project limits where work is accomplished in conjunction with the project. Installation of temporary erosion control features shall be coordinated with the construction of permanent erosion control features to assure effective and continuous control of erosion and pollution.

1.3 SUBMITTALS

Submit the following in accordance with Section C, Part 7.0, of the Basic Contract.

1.3.1 SD-02, Manufacturer's Catalog Data

- a. Silt Fence
- b. Dust Suppressors

1.3.2 SD-04, Drawings

- a. Erosion Control Plan G

1.3.2.1 Erosion Control Plan

Submit, for approval, four copies of a Contractor furnished erosion and sediment control plan to the Navy's Technical Representative (NTR) a minimum of 14 days prior to start of construction. The plans shall not be a reproduction of the contract documents. The erosion and sediment control plan shall indicate minimum erosion control requirements and shall be site adapted and modified to suit the sequence of construction operations. At a minimum, the Contractor furnished erosion and sediment control plan shall indicate the following:

- a. Clearing limits
- b. New construction and existing construction affected by new construction
- c. Grading sequence shown with installation sequence of temporary and permanent erosion control features
- d. Type, size, and location of temporary erosion control features.

1.3.2.2 General Guidance

Design to accommodate the runoff of a local 10 year storm. The following publications shall be used as a guide for developing the Contractor furnished plan:

- a. Guide for Sediment Control on Construction Sites - USDA Soil Conservation Service
- b. Processes, Procedures, and Methods To Control Pollution Resulting From All Construction Activity - EPA
- c. Guidelines for Erosion and Sediment Control Planning and Implementation - EPA.
- d. North Carolina State Erosion and Sediment Control Regulations.

PART 2 - PRODUCTS**2.1 Silt Fence****2.1.1 Posts**

4 inch by 4 inch wood posts, minimum 3 inch diameter wood, or 1.33 pound per linear foot steel posts. Posts shall be minimum 6 feet long.

2.1.2 Wire Fabric

ASTM A185, 6 by 6, minimum 12-1/2 gage.

2.1.3 Filter Fabric

A woven or nonwoven polypropylene, nylon, or polyester containing stabilizers and/or inhibitors to make the fabric resistant to deterioration from ultraviolet, and with the following properties:

- | | |
|---|------------|
| a. Minimum grab tensile strength (ASTM D1682) | 100 pounds |
| b. Minimum grab elongation (ASTM D1682) | 25 percent |
| c. Minimum mullen burst strength (ASTM D3786) | 210 psi |
| d. E.O.S. (CW 02215) | 20-100 |

2.1.4 Standard Catalog Product

A manufacturer's standard catalog product for a preassembled silt fence may be provided in lieu of the indicated silt fence except that the filter fabric shall be as specified, and the height of the structure shall be as indicated.

2.2 TEMPORARY SEEDING**2.2.1 Seed**

Commonwealth certified seed of the latest season's crop. Provide seed as specified in Part 3 - Execution.

2.2.2 Fertilizer

FS O-F-241, Type I, Class 2, with 10 percent nitrogen, 20 percent available phosphoric acid, and 10 percent potash.

2.2.3 Mulch

Hay or straw. Provide in an air dried condition for placement with commercial mulch blowing equipment.

2.3 DUST SUPPRESSORS

ASTM D98 calcium chloride, magnesium chloride, or other standard manufacturer's products designed for dust suppression.

2.3 WATER FOR DUST SUPPRESSION

Water used for dust suppression shall be free from oil, acids, alkalis, salts, or any substance that is toxic or otherwise harmful to surrounding vegetation.

PART 3 - EXECUTION

3.1 SILT FENCE

Install posts a maximum of 6 feet on center, and at an angle between 2 degrees and 20 degrees towards the potential silt load area. The height of the silt fence shall not exceed 36 inches. Do not attach filter fabric to existing tree. Secure filter fabric to the post and wire fabric using staples, tie wire, or hog rings. Imbed the filter fabric into the ground as indicated. Splice filter fabric at support pole using a 6 inch overlap and securely seal. Top of the filter fabric shall have a 1 inch tuck or a reinforced top end section.

3.2 TEMPORARY SEEDING

Within 48 hours after backfilling, provide seed, fertilizer, and mulch on graded areas when any of the following conditions occur:

- a. Grading operations stop for an anticipated duration of 30 days or more.
- b. Provide on the slopes of cuts and fill slopes for every 5 foot increment of vertical height of the cut or fill.
- c. When it is impossible or impractical to bring an area to finish grade so that permanent seeding operations can be performed without serious disturbance from additional grading.
- d. When an immediate cover is required to minimize erosion, or when erosion has occurred.
- e. Provide on erosion control devices constructed using soil materials.

3.2.1 General

Loosen subgrade to a minimum depth of 4 inches. Uniformly apply the seed, fertilizer, and mulch at the specified application rates. Roll the seeded area after applying seed and fertilizer. Do not seed or fertilize when the NTR determines conditions are unfavorable. Provide water to promote turf growth.

3.2.2 Seed

Provide seed type and quantity (pounds per acre) as follows:

SEED TYPE	Nov 16 - Jan 31	Feb 1 - Apr 15	Oct 16 - Nov 15	Apr 16 - Oct 15
Bermuda	100		100	

3.2.3 Fertilizer

Apply at the rate of 1000 pounds per acre.

3.2.4 Mulch

Spread mulch at the rate of 1.5 tons per acre and anchor by crimping mulch with a disc.

3.3 DUST SUPPRESSORS

Immediately dampen the surface before calcium chloride application. Apply dust suppressors on unsurfaced base, subbase and other unsurfaced travel ways at the rate between 1.0 and 1.25 pounds per square yard of surface for pellets for the initial application. For subsequent applications of dust suppressors, application rates may be approximately 75 percent of initial application rates. Do not apply when raining or the moisture conditions exceed that required for proper application. Apply other dust suppressors in accordance with manufacturers instructions. Protect treated surfaces from traffic for a minimum of 2 hours after treatment. Repeat application of dust suppressors as required to control dust emissions.

3.4 MAINTENANCE AND INSPECTION

Inspect erosion control devices after each rainfall and daily during prolonged rainfall. Remove sediment deposits after each rainfall or when sediment reaches approximately one-half the barrier height. Immediately repair damaged erosion control devices and damaged areas around and underneath the devices. Maintain erosion control devices to assure continued performance of their intended function. Modify the Contractor furnished erosion control plan as required to control problem areas noticed after each inspection.

3.5 CLEAN UP

At the completion of the job, or when directed or approved by the NTR, erosion control devices shall be removed. Erosion control devices and areas immediately adjacent to the device shall be filled (where applicable), and shaped to drain and to blend into the surrounding contours. Erosion control devices may remain in place when approved by the NTR.

--End of Section--

SECTION 02102

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.1.1 SD-14, Samples

a. Tree wound paint

Submit samples in cans with manufacturer's label.

1.2 DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle materials in a manner which will maintain in their original manufactured or fabricated condition until ready for use.

PART 2 PRODUCTS

2.1 TREE WOUND PAINT

Bituminous based paint of standard manufacture specially formulated for tree wounds.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Roads and Walks

Keep roads and walks free of dirt and debris at all times.

3.1.2 Trees, Shrubs, and Existing Facilities

Protection shall be in accordance with Section 01010, "General Paragraphs."

3.1.3 Utility Lines

Protect existing utility lines that are indicated to remain from damage. Notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations. When utility lines which are to be removed are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time to minimize interruption of the service. Refer to Section 01010, "Summary of Work," for additional utility protection.

3.2 CLEARING

Shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Cut off flush with or below the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared, except for trees and vegetation indicated or directed to be left standing.

3.3 TREE REMOVAL

Where indicated, remove designated trees and stumps and grub roots.

3.4 GRUBBING

Remove and dispose of roots larger than 3 inches in diameter, matted roots, and designated stumps from the indicated grubbing areas. Excavate this material together with logs, organic and metallic debris, brush, and refuse and remove in areas indicated to be grubbed and in areas indicated as construction areas under this contract. Fill depressions made by grubbing with suitable material and compact to make the new surface conform with the existing adjacent surface of the ground.

3.5 DISPOSAL OF CLEARED AND GRUBBED MATERIALS

3.5.1 Saleable Timber

Consider felled timber from which saw logs, pulpwood, posts, poles, ties, or fuelwood can be produced as saleable timber. Trim limbs and tops, and saw into saleable lengths and stockpile adjacent to the site. The stockpile timber will remain the property of the Government.

3.5.2 Nonsaleable Materials

Remove from the project site and dispose of at the Base landfill non-contaminated timber, scrub, vegetation, and debris considered as non-saleable. Remove from the project site and dispose of off-Base contaminated timber, scrub, vegetation, and debris considered as non-saleable. Visual inspection shall determine if the material is contaminated or non-contaminated. Burning will not be permitted.

-- End of Section --

SECTION 02220

GENERAL EXCAVATION, FILLING, AND BACKFILLING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 33	(1993) Concrete Aggregates
ASTM C 136	(1993) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 698	(1991) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft (600 kN-m/m))
ASTM D 1140	(1992) Amount of Material in Soils Finer Than the No. 200 (75-Micrometer) Sieve
ASTM D 1556	(1990) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
ASTM D 2321	(1989) Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
ASTM D 2487	(1993) Classification of Soils for Engineering Purposes
ASTM D 2922	(1991) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(1993) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4397	1991 Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C600 (1993) Installation of Ductile-Iron Water Mains and Their Appurtenances

COMMERCIAL ITEM DESCRIPTIONS (CID)

CID A-A-1909 Fertilizer

CORPS OF ENGINEERS (COE)

COE EM-385-1-1 (1992) Safety and Health Requirements Manual

1.2 DEFINITIONS

1.2.1 Remediation Level

A contaminant level that is set as a goal for remediation activities to achieve (i.e., a cleanup goal for contaminated material).

1.2.2 Contaminated Soil

Soil containing contaminant levels that exceed the following remediation levels as determined by Contract Laboratory Program/Statement of Work:

<u>Contaminant</u>	<u>Remediation Level (mg/kg)</u>
Aldrin	35
Dieldrin	37
4,4'-DDD	2,484
4,4'-DDT	1,753
alpha-Chlordane	459
alpha-Chlordane	459

1.2.3 Cohesive Materials

Materials ASTM D 2487 classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesive only when the fines have a plasticity index greater than zero.

1.2.4 Cohesionless Materials

Materials ASTM D 2487 classified as GW, GP, SW, and SP. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

1.3 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.3.1 SD-04, Drawings

a. Required Data

1.3.1.1 Required Data

Submit drawings and calculations by a registered professional engineer. Calculations shall include data and references used.

1.3.2 SD-09, Reports

a. Remediation Closeout Report

1.3.2.1 Remediation Closeout Report

A Remediation Closeout Report shall be prepared and shall contain the following items: all background PID readings and locations, all sample PID readings, all sample results, a diagram of the limits of the excavated area with all sample locations indicated (diagram shall indicate reference benchmark used), all chain of custody forms, certificates of disposal, truck manifests, and description of the work completed.

1.3.3 SD-12, Field Test Reports

a. Fill and backfill test

1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

Free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, and deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

2.1.1 Common Fill

Approved, unclassified soil material with the characteristics required to compact to the soil density specified for the intended location.

2.1.2 Backfill and Fill Material

ASTM D 2487, classification GW, GP, GM, GC, SW, SP, SM, or SC with a maximum ASTM D 4318 liquid limit of 35, maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing ASTM D 1140, No. 200 sieve.

2.1.3 Topsoil

Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth. Amend topsoil pH range to obtain a pH of 5.5 to 7.

2.1.4 Select Material

ASTM D 2487, classification GW, GP, SW, SP with a maximum of 10 percent by weight passing ASTM D 1140, No. 200 sieve.

2.2 PLASTIC SHEETING

ASTM D 4397.

2.3 BORROW

Obtain borrow materials conforming to common fill and fill and backfill material specifications from the Government borrow pit. The Government borrow pit is located as indicated on the design drawings. If the Government borrow pit is used, the Contractor shall perform clearing, grubbing, and stripping required for providing access to suitable borrow material. Dispose of materials from clearing and grubbing operations at the Base landfill. Strip top 12 inches of soil material from borrow area and stockpile. After removal of borrow material, regrade borrow pit using stockpiled soil material to contours which will blend in with adjacent topography. Maximum side slopes shall be two horizontal to one vertical. Excavation and backfilling of borrow pit shall ensure proper drainage.

2.4 BURIED WARNING AND IDENTIFICATION TAPE

Polyethylene plastic metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3 inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

Warning Tape Color Codes

Yellow:	Electric
Yellow:	Gas, Oil; Dangerous Materials
Orange:	Telephone and Other Communications
Blue:	Water Systems
Green:	Sewer Systems
White:	Steam Systems
Gray:	Compressed Air

2.4.1 Warning Tape for Metallic Piping

Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of tape shall be 0.003 inch. Tape shall have a minimum strength of 1500 psi otherwise, and 1250 psi crosswise, with a maximum 350 percent elongation.

2.4.2 Detectable Warning Tape for Non-Metallic Piping

Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

2.5 DETECTION WIRE FOR NON-METALLIC PIPING

Detection wire shall be insulated single strand, solid copper with a minimum of 12 AWG.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

3.1.1 Clearing and Grubbing

Unless indicated otherwise, remove trees, stumps, logs, shrubs, and brush within the clearing limits. Remove stumps entirely. Grub out matted roots and roots over 2 inches in diameter to at least 18 inches below existing surface.

3.2 PROTECTION

3.2.1 Drainage

So that construction operations progress successfully, completely drain construction site during periods of construction to keep soil materials sufficiently dry. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein.

3.2.2 Underground Utilities

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact the Public Works Department for assistance in locating existing utilities. The Contractor shall scan the construction site with electromagnetic and sonic equipment and mark the surface of the ground where existing underground utilities are discovered.

3.2.3 Machinery and Equipment

Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

3.3 EXCAVATION OF CONTAMINATED SOIL

Excavate to dimensions indicated. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soil softened or made unsuitable for subsequent construction due to exposure to weather. Refill with backfill and fill material from an on-Base borrow pit.

3.3.1 Materials and Equipment

3.3.1.1 General

- a. Provide all labor, materials, and equipment necessary to accomplish the work specified in these paragraphs.
- b. The Contractor shall notify the NTR at least 48 hours prior to the start of excavation of contaminated soils. The Contractor shall stage his/her operations to minimize the time the contaminated soil is exposed to the weather.

3.3.1.2 Unclassified Excavation

Excavation is unclassified. All excavation shall be completed regardless of the type, nature, or condition of the materials encountered.

3.3.2 Limits of Excavation

- a. Excavations shall be to the limits indicated on the construction drawings until groundwater is encountered, until the confirmatory soil samples pass TCL pesticide analysis (i.e., analysis results do not exceed the remediation levels specified in Section 01430, "Waste Sampling Requirements"), or until the underground leach field is contacted. If the leach field is contacted, excavation shall stop and the Contractor shall immediately notify the NTR.
- b. Once the Contractor has excavated to the specified limits of the excavation, an on-site analysis consisting of a visual inspection will be performed on the surrounding soil. If the visual inspection reveals evidence of visibly pesticide-contaminated soil, the Contractor will consult with the NTR. When the exposed excavation surfaces do not contain visual evidence of pesticide-contaminated soil, confirmation samples shall be collected and sent to an analytical laboratory for analysis.
- c. Confirmation soil samples shall be collected and submitted to a laboratory for analysis as specified in Section 01430, "Waste Sampling Requirements." A maximum of a 48 hour turnaround time shall be required for all confirmation samples to prevent the excavation area from remaining open over extended periods of time.
- d. Final excavation areas shall be governed by field conditions and determined by the NTR.
- e. Remove and contain any ponded water collected in the excavations. After excavation activities are complete as determined by the NTR,

sample the water in accordance with the specifications in Section 01430, "Waste Sampling Requirements."

- f. Place all excavated, contaminated soil in the stockpile area on an impervious barrier and cover with 40 mil polyethylene sheeting. Provide a berm around the outer limits of the contaminant areas and cover with polyethylene sheeting. Secure the edges of the sheeting.
- g. Contaminated materials shall be loaded into covered containers or vehicles designed to transport such materials without spillage, and shall be transported and disposed of as described in Section 02223, "Transportation and Disposal of Contaminated Material." Care shall be taken during loading operations to minimize the potential for spillage, tracking, or other means of deposition of contaminated materials outside the work area. Contaminated materials which become spilled on roads, streets, or other areas outside the limits of excavation during the loading operation shall be immediately cleaned up to the satisfaction of the NTR.
- h. Backfilling of excavated areas will begin only after the approval of the NTR.
- i. The Contractor and the NTR shall work together closely to coordinate excavation, sampling, and analyses to minimize downtime. The Contractor shall schedule work to minimize downtime.

3.3.3 Method of Measurement

- a. The quantity of work done under this paragraph will be measured in tons, which shall be the actual weight of the solid waste removed. Quantity shall be verified by the certified delivery tickets provided by the treatment/disposal facility.

3.4 FILLING AND BACKFILLING

Fill and backfill to dimensions indicated.

3.4.1 Common Fill Placement

Provide for general site and under porous fill of pile-supported structures. Place in 6 inch lifts. Aerate material excessively moistened by rain to a satisfactory moisture content.

3.4.2 Backfill and Fill Material Placement

Provide for excavation area. Place in 6 inch lifts.

3.5 BURIED WARNING AND IDENTIFICATION TAPE

Provide buried utility lines with utility identification tape. Bury tape 12 inches below finished grade; under pavements and slabs, bury tape 6 inches below top of subgrade.

3.6 BURIED DETECTION WIRE

Bury detection wire directly above non-metallic piping at a distance not to exceed 12 inches above the top of pipe. The wire shall extend continuously and unbroken, from manhole to manhole. The ends of the wire shall terminate inside the manholes at each end of the pipe, with a minimum of 3 feet of wire, coiled, remaining accessible in each manhole. The wire shall remain insulated over its entire length. The wire shall enter manholes between the top of the corbel and the frame, and extend up through the chimney seal between the frame and the chimney seal. For force mains, the wire shall terminate in the valve pit at the pump station end of the pipe.

3.7 FINISH OPERATIONS

3.7.1 Grading

Finish grades as indicated within one-tenth of one foot. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

3.7.2 Seed

Scarify existing subgrade. Provide 4 inches of topsoil for newly graded finish earth surfaces and areas disturbed by the Contractor. If there is insufficient on-site topsoil meeting specified requirements for topsoil, provide topsoil required in excess of that available. Seed shall match existing vegetation. Provide seed at 5 pounds per 1000 square feet. Provide CID A-A-1909, Type I, Class 2, 10-10-10 analysis fertilizer at 25 pounds per 1000 square feet. Provide commercial agricultural limestone of 94-80-14 analysis at 70 pounds per 1000 square feet. Provide mulch and water to establish an acceptable stand of grass.

3.7.3 Protection of Surfaces

Protect newly graded areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

3.8 DISPOSITION OF SURPLUS MATERIAL

Remove from the site surplus or other soil material not required or suitable for filling or backfilling, and brush, refuse, stumps, roots, and timber.

-- End of Section --

SECTION 02223

TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIAL

PART 1 GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section C of the Basic Contract.

1.1.1 SD-08, Statements

a. Treatment facility permit

1.1.1.1 Treatment Facility Permit

Verification that the proposed treatment facility is permitted to accept the contaminated materials specified, prior to the start of excavation.

1.1.2 SD-18, Records

a. Shipment manifests

b. Delivery certificates

c. Disposal Site Decontamination certificate

d. Work Site Decontamination certificate

e. Treatment and Disposal Certificates

1.1.2.1 Shipment Manifests

Copies of manifests and other documentation required for shipment of waste materials within 24 hours after removal of waste from the site. All shipment manifests shall be signed by the Contracting Officer.

1.1.2.2 Delivery Certificates

Verification that the wastes were actually delivered to the approved treatment facility, within 7 days of shipment.

1.1.2.3 Disposal Site Decontamination Certificate

Verification that all vehicles and containers were decontaminated prior to leaving the disposal site, within 7 days of disposal.

1.1.2.4 Work Site Decontamination Certificate

Verification that all vehicles, equipment, and containers were decontaminated prior to leaving the work site shall be submitted within 24 hours of vehicles, equipment, or containers leaving the work site. Verification that all trucks transporting contaminated materials were properly operating, and were covered, shall be submitted within 24 hours after removal of waste from the site.

1.1.2.5 Treatment and Disposal Certificates

Verification that the wastes were successfully treated and remediated to the levels specified herein.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 Materials and Equipment

The Contractor shall furnish all labor, materials, and equipment necessary to transport and dispose of Government and Contractor generated wastes in accordance with applicable federal, state, and local requirements.

3.2 Records

The Contractor shall originate, use, and maintain the waste shipment records/manifests as required by the North Carolina Department of Environment, Health, and Natural Resources, and the U.S. Department of Transportation, as necessary.

3.3 Transportation

The Contractor shall be solely responsible for complying with all federal, state, and local requirements for transporting contaminated and hazardous materials through the applicable jurisdictions and shall bear all responsibility and cost for any noncompliance. In addition to those requirements, the Contractor shall do the following:

- a. Inspect and document all vehicles and containers for proper operation and covering.
- b. Inspect all vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.
- c. Perform and document decontamination procedures prior to leaving the worksite and again before leaving the disposal site.

3.4 Disposal

All pesticide contaminated materials classified as hazardous under RCRA (40 CFR Part 261) that are removed from the site shall be disposed of in a RCRA hazardous waste treatment/disposal facility permitted to accept such materials.

-- End of Section --