C6-11-3/1/97-00400

DRAFT

Work Plan and Permit Application for Land Treatment of Petroleum Contaminated Soils Camp Geiger MCB Camp Lejeune, North Carolina

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-93-D-3032
Delivery Order 0115

Prepared by

OHM Remediation Services Corp.
Norcross, Georgia

John P. Franz, P.E.
Program Manager

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

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OHM Project No. 18943

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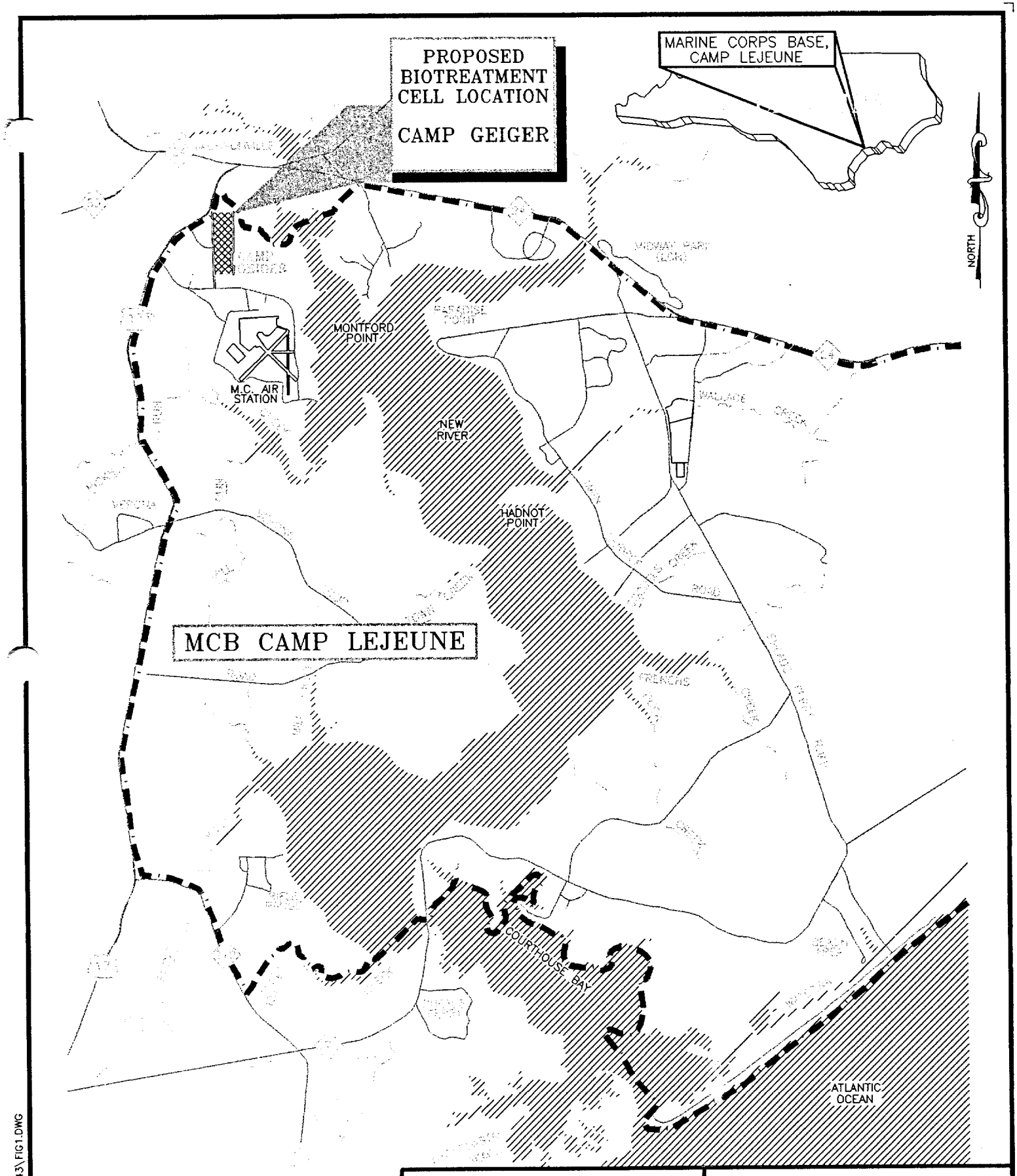
1.0 INTRODUCTION

OHM Remediation Services Corp. (OHM) is under contract with the Department of Navy to provide a variety of environmental remediation services at MCB Camp Lejeune in Onslow County, North Carolina. OHM has been tasked under Contract N62470-93-D-3032 as part of Delivery Order No. 0115 to permit, construct, operate, and manage a dedicated soil treatment facility at Camp Geiger on the Base. The land treatment facility would biologically treat nonhazardous petroleum contaminated soil from Camp Geiger, which would otherwise be disposed off-site at a permitted commercial or municipal treatment or disposal facility. The purpose of this document is to provide sufficient design information and detail on the proposed activities to obtain a treatment permit, and operate the facility in accordance with the state of North Carolina requirements.

Camp Lejeune is a training base of the Marine Corps, covering approximately 236 square miles. It is bounded to the northeast by State Route 24, and to the west by U.S. Route 17. A general base location and vicinity map is provided as Figure 1. The proposed location for the land treatment facility is within MCB Camp Lejeune, at Camp Geiger. Figure 2 is a local site map and facility layout showing the proposed facility location relative to pertinent site features. OHM is currently performing site remediation work at MCB Camp Lejeune and has temporary offices and decontamination facilities located in Lot 203.



VICINITY MAP

2 0 1 2

1 INCH = 2 MILES

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

DRAWN BY	J. LANGE	11/27/96
CHECKED BY	–	–
APPROVED BY	–	–
REV. 0	SHEET # –	PROJECT NO. 18943

FIGURE 1

VICINITY AND LOCATION MAP

D.O. 0115 WORK PLAN
MARINE CORPS BASE CAMP LEJEUNE
NORTH CAROLINA

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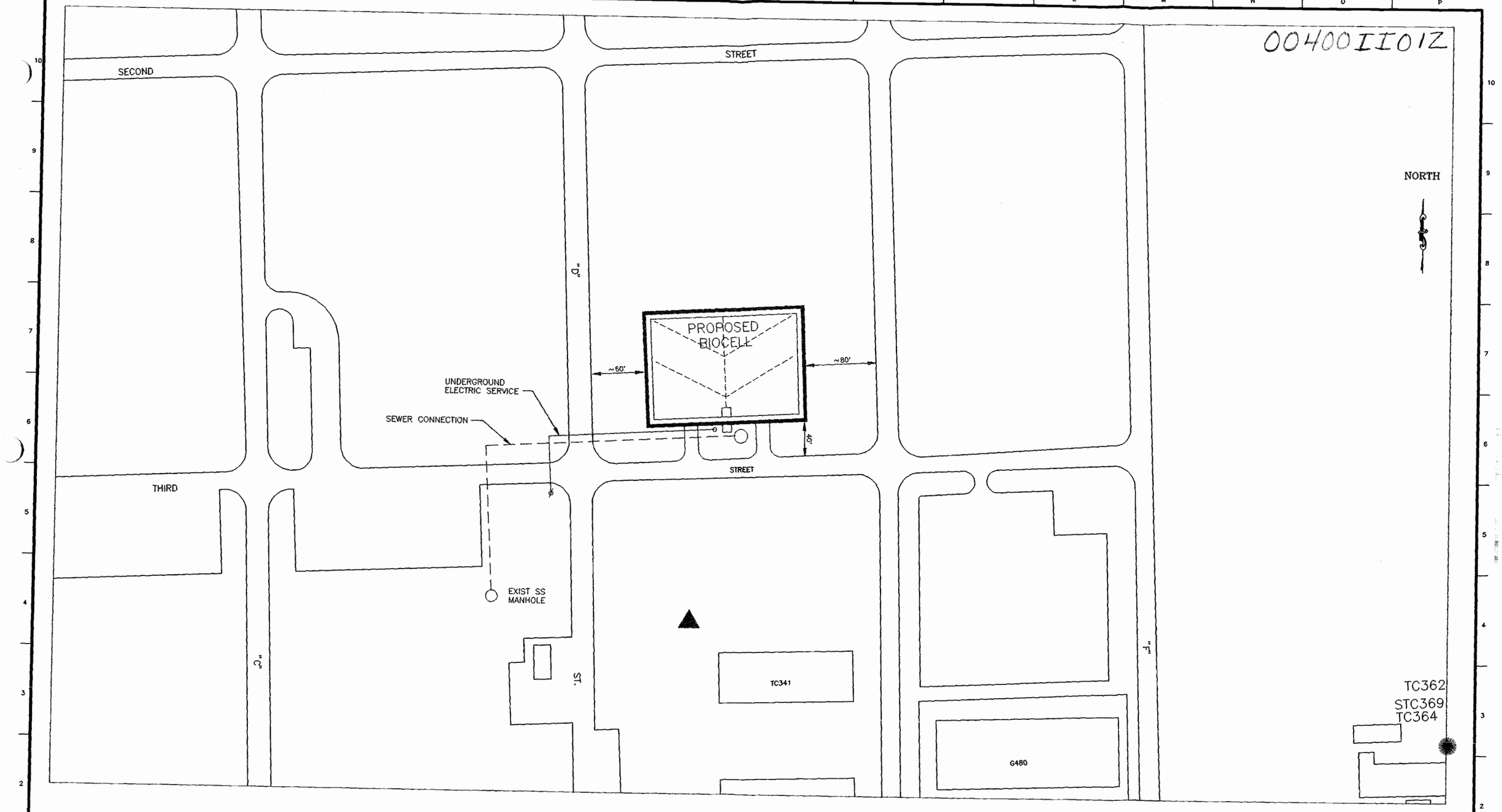

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OHM Remediation Services Corp.
Norcross, Georgia
A Subsidiary of OHM Corporation

SUBMITTED: _____ PROJECT MANAGER: _____ DATE: _____
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_____ DATE: _____

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CADD FILE: _____
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DESIGNED: _____
CHECKED: _____
CHECKED: _____

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
RAC CONTRACT N62470-93-D-3032 — DELIVERY ORDER NO. 0115
CAMP GEIGER — MARINE CORPS BASE CAMP LEJEUNE, N.C.

GEIGER BIOCELL
SITE PLAN AND UTILITY CONNECTIONS

FIGURE NO. 2
SHEET NUMBER: _ of
DATE: 11/27/96

2.0 OBJECTIVES

North Carolina General Statute 143-215.1(d) requires that the disposal and/or treatment of contaminated soil be permitted by the Department of Environment, Health, and Natural Resources (DEHNR). This document is designed to serve two purposes: 1) satisfy the substantive permitting requirements for dedicated petroleum contaminated soil treatment facilities; and 2) describe the details for construction and operation of a dedicated facility which meets these requirements.

Petroleum contaminated soils will be treated at MCB Camp Lejeune at Camp Geiger in a dedicated biological treatment cell (biocell) to the following cleanup criteria:

- Average total petroleum hydrocarbon concentration of < 10 mg/kg Total Petroleum Fuel Hydrocarbon (TPFH) using EPA Method 5030/8015 as gasoline range organics (GRO)

- Average total petroleum hydrocarbon concentration of < 40 mg/kg TPFH as diesel range organics (DRO) using EPA Method 3550/8015; and

- Concentration of Oil and Grease <250 mg/kg using EPA Method 9071.

3.0 PERMIT REQUIREMENTS FOR DEDICATED LAND TREATMENT FACILITY

The subject facility will be designed to manage only petroleum contaminated soil as defined in N.C.G.S. 143-215.1. Soils contaminated with one or more of the following petroleum products are acceptable: low boiling,

Class I Products: (low boiling point fuels)	Motor gasoline, aviation gasoline, gasohol, some military jet fuels (JP-4, Jet A)
Class II Products: (high boiling point fuels)	All other jet fuels, e.g., JP-5, JP-8 and kerosene, diesel fuel, fuel oils (No. 1 - 6), and motor oils (new or used)
Excluded Products:	Includes chlorinated solvents, organic acids, tars, asphalts, petroleum refinery sludge, and soils classified as RCRA hazardous waste

Soils contaminated with excluded materials will not be managed at the proposed facility. The facility will be designed to manage nonhazardous petroleum contaminated soils containing Class I and Class II products.

Minimum design or performance requirements for dedicated facilities include the following:

- A completed Non-discharge Permit for Land Application of Petroleum Contaminated Soil
- Site security to prevent unauthorized entry
- Leachate collection system to prevent runoff
- Use of a synthetic liner which has a hydraulic conductivity < $1x10^{-9}$ cm/sec and is at least 30 mil in thickness or a 20 mil Permalon liner, or a compacted clayey soil with a hydraulic conductivity less than $1x10^{-6}$ cm/sec
- Provisions to dispose of leachate in an approved manner
- Treatment surface slope of less than 5 percent

- Compliance with the buffer requirements of NCAC 15A 2H .0219(j)
- Plans and specifications to be approved by the state Groundwater Section
- Site maintenance including nutrient addition, oxygen enhancement, etc.
- Soil sampling and monitoring

As a dedicated facility it is anticipated that the operating permit will be valid for a period of five years, with annual administrative fees.

4.0 SITE LAYOUT AND BOUNDARY MAP

A scaled Site Layout for Camp Geiger proposed land treatment facility is provided as Figure 2. The proposed location of the biocell is the city block bounded by Second and Third Streets and 'D' and 'E' Streets. Key features on Figure 2 include the proposed location and dimensions of the biocell, nutrient staging area, existing shallow groundwater monitoring wells (installed by others), access roads and existing utilities.

Entry to the proposed biocell is to the north off as shown. Utilities including electrical power, potable water and sewer will be connected as shown on the drawing.

North Carolina regulations require that a minimum buffer zone be established between the facility and habitable residences. No habitable residences exist within 400 feet of the treatment area. Also, no public or private drinking water well exists within 500 feet.

4.1 SOIL CONDITIONS

Site surface soils consist of typical Coastal Plain unconsolidated deposits of silty and clayey fine to medium sand, silt and clay, with granular (cohesionless) materials predominating. The relative densities of the cohesionless materials, as determined by the Standard Penetration Test MEthod (ASTM D-1586) range from loose to dense. The sands are described as generally silty, SM and clayey, SC according to the Unified Soil Classification System (ASTM C-2487). The cohesive fraction of samples examined was inorganic silts and inorganic clays. Cross-sections indicate that the sand stratum tends to be fine grained, silty and loose in the upper portion of its section and becomes fine to medium grained, cleaner (few or no fines present) and dense with increasing depth. Thin, discontinuous silt (ML or MH) or clay layers (CL) occur locally, but appear to have little or no hydrogeologic significance. The total thickness of the unconsolidated surface soils is approximately 40 to 100 feet. This upper unit is directly underlain by sandy, marley limestone of the Castle Hayne Formation.

The logs of borings from monitoring wells located near the proposed location indicate that the depth below grade to the water table ranges from 3 to 17 feet, averaging 8 feet. Seasonal water level variation does occur with an order of magnitude from 0 to 2 feet as determined from site investigation records.

Site surface topography is generally level in the proposed soil treatment facility area. According to site hydrogeologic cross-sections, the site's surface expression is approximately level.

4.2 GROUNDWATER MONITORING WELLS

Various shallow, intermediate and deep groundwater monitoring wells are located within 1 500-foot radius of the proposed site. The shallow wells are screened into the unconfined water table for the purpose of monitoring groundwater quality. The depth to groundwater ranges from 3 to 17 feet below ground surface. The intermediate wells are screened in the upper reaches of the Castle Hayne limestone aquifer approximately 40 to 70 feet below ground surface. The deep wells are screened into the Castle Hayne limestone aquifer over 100 feet below ground surface. All of these wells were installed as part of the Remedial Investigation conducted by Baker Engineers for Operable Unit No. 10, Site 35 at MCB Camp Lejeune.

5.0 BIOCELL CONSTRUCTION

5.1 DESIGN BASIS

Construction of the soil treatment facility will be based on several key design parameters. These parameters and their basis is provided in Table 1.

Table 1 – Biocell Design Basis

Parameter	Basis
Biotreatment Cell Capacity	650 cubic yards
Dimensions (internal cell area)	142' x 102', excluding 2' high earthen berms
Acceptable TPH Contaminated Soils	Petroleum only per N.C.G.S. 143-215.1.
Origin of TPH Contaminated Soils	Limited to MCB Camp Lejeune
Lift Thickness	12 inches
Drainage Layer	24 inches of coarse, graded local sand
Leachate Management	Recycle with 1800 gallon collection sump
Graded Slope for Drainage	1 percent to leachate collection pipe
Liner Permeability	Less than $1x10^{-9}$ cm/sec, 20 mil minimum
Cycle/Turnover Time	90-180 days/batch to achieve treatment goals

5.2 SITE SET-UP, SECURITY, AND UTILITIES

A boundary site survey may be performed using conventional land surveying techniques to provide a scaled layout of the proposed facility and features. Prior to construction, wooden off-set stakes or pin flags will be placed on a defined grid pattern to demarcate grading limits for the precise location of the land treatment facility.

Utility connections including overhead electrical and potable water and sanitary sewer will also be identified. Power will be required to supply the sump pump and irrigation pump. An electrical subcontractor will provide the necessary three-phase electrical power service to the treatment area.

5.3 EROSION CONTROL MEASURES

The proposed location of the biocell will be cleared, grubbed, and rough graded. New gravel access ways for truck traffic from Third Street to the active treatment area will be constructed. The upgraded gravel access will extend to each of the two Biocell off-loading ramps. Gravel covered access to be biocell is needed to reduce the potential for fugitive emissions and accommodate scheduled incoming truck loads containing contaminated soil for placement. Four to 6 inches of locally available crushed stone or standard size gravel will be placed over the graded and compacted access ways.

Specific erosion control measures are required under North Carolina rules if more than one acre is disturbed. Since the facility does not exceed one acre in size, a Soil Erosion and Sedimentation Control Plan is not required for this activity.

5.4 BASELINE AIR MONITORING

Baseline air monitoring may be performed around the perimeter of the biological treatment cell prior to or after placement of petroleum contaminated soil using either a portable flame ionization or photoionization detector. All air monitoring will be conducted in accordance with the site specific Health and Safety Plan. Monitoring within the cell may occur in the breathing zone to determine if respiratory protection for workers is needed. The two activities which will generate the most fugitive organic vapors include the initial spreading of the untreated soil and the periodic tilling activities. If organic vapors are within acceptable limits, work performed within and around the cell will conducted in Level D personnel protective equipment.

5.5 CELL CONSTRUCTION

General Description

The proposed biocell has been designed for managing 650 cubic yards of petroleum contaminated soil per batch. Figure 3 shows a plan view and dimensions of the facility. One single biocell, with overall dimensions of 142 feet by 102 feet will be capable of accommodating 650 cubic yards of contaminated soil, assuming a lift thickness of 12 inches. The single cell will be underlain with a geomembrane liner, a 24-inch drainage layer, and leachate collection system. The active portions of the treatment area will be surrounded by a 2 foot high earthen berm for stormwater management and leachate control. Specific construction details for the biocell are provided in the following sections.

Subgrade Preparation

Native sandy soils in the designated cell location will be graded. Grub roots, stumps, metal debris, or other protrusions will be removed. A sub-base with a slope of .5 percent as

shown on Figure 3 will be constructed. Base borrow materials will be brought in as necessary and placed over the native soils to provide positive drainage to the leachate collection system. Excavation below the existing grade may be performed as needed in lieu of importing borrow material to construct the sub-base.

Section C-C' and the layout on on Figure 3 shows the proposed grading plan for the Biocell. The designed drainage plan is intended to divert leachate for recycle to the common collection sump. In addition, the slope will prevent runoff of petroleum contaminated water and ensure that stormwater is managed properly during precipitation events. Vertical control points will be used during biocell construction to guide and verify the design subgrade slopes.

Local Base borrow material may also be transported to the site and used to construct the earthen berms which will provide secondary containment around the perimeter of the biocell. Sections A-A', B-B' and C-C' on Figure 3 show the subgrade, grading and berm details relative to the synthetic geomembrane liner.

Geomembrane

A 30 mil high density polyethylene (HDPE) geomembrane liner will be placed over the prepared subgrade. The synthetic liner material will have a minimum permeability of less than $1x10^{-9}$ cm/sec as required by North Carolina regulations for treating Class I and Class II soils in dedicated soil treatment facilities. The liner will be pre-manufactured, seamed, and ready for field installation. HDPE material will be used based on chemical resistance and compatibility, material durability, and potential operating life of the facility. All pre-welded seams will be field inspected during installation in accordance with the manufacturer's recommendations. This bottom synthetic liner combined with the 24" drainage layer described in the next section, will be able to withstand light vehicle traffic during system operation and maintenance.

Drainage Layer

Over the synthetic geomembrane, a 24-inch layer of coarse (typical NCDOT open graded sand) will be placed. The sand will serve as a both a protective cover for the geomembrane liner and a drainage layer for precipitation. The clean sand will meet the following requirements: ASTM D2487, classification SW or SP with a maximum of 10 percent by weight passing No. 200 sieve and 100 percent passing 3/8 inch sieve. Figure 3, Section A-A' shows a cross section of the proposed drainage layer. The sand will be spread throughout the base of the biocell with a light bulldozer or rubber tired front end loader. An initial sand layer survey with control points or pin flags will be performed to establish the sand layer depths throughout the biocell.

Contaminated Soil Layer

TPH contaminated soil will be transported into the facility in covered dump trucks, roll-offs or other common transport vehicles. The trucks will have access for off-loading at the biocell in two different locations. Gravel access ramps, approximately 15 feet wide will be provided as shown in Figure 3. Trucks can utilize the appropriate gravel access ramp for off-loading by backing onto the access ramp in the desired location within the active cell. Thus, the contents of the truck can be emptied without cross contamination of the vehicle, or tracking contamination outside the cell.

The off-loaded piles of soil will be smoothed and leveled using a lightweight bulldozer inside the bermed area. The desired depth of soil material to be treated will be approximately 12 inches. Soil depth above the sand subgrade will be gauged at several locations to insure it is within the desired depth range. Debris, such as rock and organic materials, which may be present will be segregated or raked out of the lift. Large clods will be pulverized later following addition of fertilizer through conventional tilling activities. The final smooth surface will follow the slope of the subgrade to provide positive drainage for precipitation.

Leachate Sump

Stormwater leachate will be collected and recycled back to the biocell as needed for moisture control. Within the containment berm, a leachate collection sump, collection pipe, transfer pump will be provided. Figure 3 provides a preliminary layout of the leachate collection and nutrient make-up area. This figure also displays the proposed sump details. A 4-inch concrete pad 12 feet by 10 feet will be constructed for reagent storage, general housekeeping, and spill prevention.

A common leachate collection header running longitudinally south to north, terminating at the collection sump will be installed. Figure 3, Section B-B' provides a cross section of the collection system. Leachate collected by the drainage system will be diverted to the leachate sump, with a capacity of approximately 1,500 gallons. A dedicated electric submersible pump will be installed in 24-inch vertical sump and surrounded by coarse drainage sand.

Precipitation reaching the lined biocell (exceeding the holding capacity of the soil and drainage layer) will migrate into the collection sump. The sump will be evacuated upon demand using the sump pump with float controls. A control panel will be provided for the pump switch and level indicator.

A 12,000-gallon temporary poly tank will be provided to store excess stormwater gathered in the collection sump which exceeds the holding capacity of the soil and drainage layer. Excess stormwater/leachate will be diverted to the tank prior to re-distribution over the

active treatment area as needed. The holding tank will also have a dedicated 2 HP electric submersible pump to transfer liquids. The water will be manually supplied to the active treatment area by OHM operations personnel using 2-inch flexible hose and spray nozzle at a rate of approximately 20 gpm.

6.0 BIOCELL OPERATION AND MAINTENANCE

6.1 NUTRIENT ADDITION

Soil fertility will be managed through conventional fertilization techniques, using relatively soluble commercial fertilizers. The soil biotreatment facility is designed to accommodate both dry granular fertilizer or aqueous based nutrients. The primary nutrients to be used include diammonium phosphate and ammonium sulfate. The concrete pad located within the bermed biocell will be used to store reagents prior to use. The initial nutrient addition ratios will be consistent with North Carolina regulations for dedicated facilities based on organic carbon:nitrogen:phosphorus of ratios 60:1:.075.

The application rate will be determined from baseline carbon:nitrogen:phosphorus present in the untreated soils. Total organic carbon concentration in the untreated soil will be used to establish the baseline nutrient addition rates. Nutrient use will be conserved since the leachate will be collected and the majority of it recycled and reapplied to the active biocell.

Nutrients will be applied in dry granular form using a conventional spread caster. The relatively small size of the treatment area favors the use of dry reagents which are manually applied by operation personnel.

Nutrient levels will be measured in the biocell prior to each separate 1,000 cubic yard batch treatment and monthly during operation and maintenance. Composite soil samples will be analyzed for the following parameters and anticipated frequency:

Table 2 – Nutrient Monitoring Sampling and Analysis

Parameter	Method	Frequency
Total Organic Carbon	SW-846 Method 9060	Initial, Monthly
Ammonium-Nitrogen	ASA/SSSA Method 33-3, 33-4	Initial, Monthly
Phosphate-Phosphorous	ASA/SSSA Method 24-5.1, 24-5.3	Initial, Monthly
pH	ASA/SSSA Method 12-2.6	Initial, Monthly
Moisture Content	ASA/SSSA Method 21-22	Initial, Monthly
Bacterial Population Density	SM EWW 9215B	Initial, Monthly

The biocell will be divided into four equal quadrants for nutrient monitoring purposes. Grab samples will be collected by OHM personnel approximately 6 inches from the surface from the middle of each of the four quadrant locations and composited into three samples. The samples will be numbered sequentially and sent with a chain-of-custody for off-site analysis. A 48-hour turnaround time will be requested for analysis. The results will

be compared with the target nutrient ratios and adjusted as necessary to maintain biological treatment efficiency and modify the operating plan as needed. Nutrient monitoring will continue monthly until the batch reaches the soil treatment standards discussed in Section 2.0.

6.2 WATER MANAGEMENT

Because soil microorganisms inhabit and are only active within thin films of water, the soil water content will be maintained at an optimal condition for their growth. Soil water moisture content can be monitored utilizing an oven and balance. Initial and monthly moisture measurements will be performed in accordance with Table 2. The target soil moisture content is approximately 60 to 80 percent of the field holding capacity corresponding to between 10 and 15 percent moisture on a weight basis. Because the driest soil conditions will occur at or near the surface, soil samples will be obtained from 0 to 4 inches. Soil at this depth is subject to the greatest drying. Four sample locations will be selected, one from each quadrant, and composited into three samples prior to analysis. The number and frequency of samples should be adequate for moisture monitoring given the size of the biocell and frequency of filling.

As discussed previously, excess stormwater and leachate which is collected in the biocell sump will be pumped into a 12,000-gallon poly tank adjacent to the facility. Water will be manually applied to the biocell for moisture control as necessary from this poly tank using a 2-inch pump and 200 feet of flexible hose. Weekly moisture monitoring results from the biocell quadrants will be used to determine recycle rates.

6.3 SOIL MIXING AND AERATION

Following the initial application of fertilizer, soil will be thoroughly mixed and pulverized to distribute hot spots of contamination and reduce soil particle size. Once the soil fertility and moisture regimes have been optimized, the factor limiting growth of soil microorganisms is usually oxygen. Oxygen will be supplied by conventional tilling methods, which thoroughly mixes and loosens the soil. A conventional rototiller or farm tractor with bottom plow or tiller attachment will be used for this purpose. Several overlapping passes of the equipment will be performed longitudinally in rows in the north-south direction. The entire biocell will be tilled to the full depth of the contaminated soil immediately following initial moisture and nutrient additions and turned twice per month during the operation and maintenance period.

6.4 SAMPLING AND ANALYSIS

Collection and analysis of soil samples will be performed at three different times for each batch of petroleum contaminated soil. They are as follows:

- Initially for characterization of incoming soils
- During the O&M period for performance monitoring
- At the completion of treatment for confirmation sampling

Initial Characterization

Baseline soil samples will be collected from the placed lift prior to initiating treatment for each batch, and periodically thereafter. The treatment cell (650 cubic yards) will be divided into four equal quadrants for baseline sampling and analysis. Representative samples will be taken with a soil hand auger or other sampling device from the middle of each of the four quadrants and composited into three samples for off-site analysis. The samples will be numbered, and shipped under a chain-of-custody to an off-site laboratory to be analyzed for the following:

- Average total petroleum fuel hydrocarbon concentration (mg/kg TPFH - GRO) using EPA Method 5030/8015;

- Average total petroleum fuel hydrocarbon concentration (mg/kg TPFH - DRO) using EPA Method 3550/8015;

- Concentration of Oil and Grease (mg/kg) using EPA Method 9071; and

- Section 6.1, Table 2 parameters.

Baseline soil contaminant concentrations for both light and heavy fraction hydrocarbons will be identified. This information will be used to determine nutrient loadings and predict treatment time needed to achieve the specified standards. Following each sampling event, the equipment will be decontaminated by OHM personnel using a three-step process in accordance with standard operating procedures.

Performance Monitoring

Monitoring during the O&M period will consist primarily of measuring total organic carbon, available nutrients, moisture, microbial population, and pH, which are key for optimizing biological degradation. These parameters, methods, and frequencies were previously provided in Section 6.1, Table 2.

Confirmation Sampling

Confirmation sampling will be collected by OHM monthly during the treatment period (90-180 days for most soils, depending on the contaminants present).

The same four quadrants used for initial characterization and performance monitoring will be used. Four to six confirmation samples per batch will be obtained and analyzed by an off-site laboratory using the same methods as performed in the initial characterization as described above. The laboratory results will be evaluated to compare the effectiveness of treatment in removing hydrocarbons to below the treatment criteria. OHM will make an evaluation whether the cleanup objectives have been attained, or to continue treatment.

If the soil analyses indicate continued presence of elevated petroleum hydrocarbons, additional nutrients will be applied to the soils and the biodegradation process will continue for up to an additional 3 months. Treatment time will vary depending on the contaminant type, initial concentrations, and time of year the treatment is employed. Treatment times will be shorter in the summer due to the higher degree of biological activity during the warmer summer months.

Sampling Summary and QA/QC

Table 3 provides a summary of the sampling to be performed at the site for initial characterization, ongoing operation and maintenance, and final confirmation. The table includes sample type, frequency, methods, turnaround times, sample quality control levels, preservation and sampling techniques. Off-site analyses will be performed by a North Carolina approved laboratory.

Table 4 is a summary of quality control objectives for the project relative to the types of sampling proposed. The quality objectives are consistent with North Carolina requirements for chemical data quality.

6.5 TREATED SOIL REMOVAL AND BIOCELL RECONDITIONING

Following confirmation testing, and completion of treatment to the specified standards, the soil will be pushed with a light bulldozer to proportioned stockpiles within the contained biocell or placed outside the biocell in a designated location. The stockpiles will be constructed close to one or all of the gravel load-out ramps for subsequent loading. The soil will be directly loaded onto transport vehicles using a front-end loader or excavator. The trucks will be covered or tarped for transportation to the designated on-site base location. Although the treated material is nonhazardous, each truck will be inspected by operations personnel prior to leaving the site to ensure that vehicles are properly loaded and tarped. The sand drainage layer will be inspected following removal of the treated soil

Table 3 – Sampling Summary

Sample Type	*Matrix*	*Sampling Frequency*	*Approx. No. of Samples*	*Sampling Method*	*Sampling Equipment*	*TAT*[1]	*QC Level*	*Sample Containers*	*Preservatives*	*Required Analysis*	*Analytical Method*[2]	*Holding Time*[3]
Initial characterization of incoming soils	Soil	Once every 650 cubic yard batch	3 comp. per biocell batch + 1 dup (5%)	1 comp. of 1 grab ea. from 2 quadrants (total of 6 quadrants)	SS spoons, SS bowls	48 hours	NFESC Level E	(1) 4 oz. gl jar (TPH/GRO)	Cool, 4°C	TPH/GRO	5030/8015	14 days
								(1) 8 oz gl jar (TPH/DRO and O&G)	Cool, 4°C	TPH/DRO	3550/8015	Extract within 7 days, analyze 40 days
										Oil & Grease	9071	28 days
Initial characterization Trip Blanks	Water	One per cooler	One per cooler	Prepared by lab	Not applicable	48 hours	NFESC Level E	(1) 40 ml gl vial (TPH/GRO)	Cool, 4°C	TPH/GRO	5030/8015	14 days
Initial characterization Field Blank	Water	One per source of decon water	1	Prepared by sampling team	Not applicable	48 hours	NFESC Level E	(2) 40 ml gl vial (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days
								(1) 1L gl amber (TPH/DRO)	Cool 4°C	TPH/DRO	3550/8015	Extract within 7 days, analyze 40 days
								(1) 1L gl amber (O&G)	Cool 4°C, H_2SO_4pH <2	Oil & Grease	9071	28 days
Initial characterization equipment rinsate blanks	Water	One per source of decon water	1	Prepared by sampling team	Not applicable	48 hours	NFESC Level E	(2) 40 ml gl vial (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days
								(1) 1L gl amber (TPH/DRO)	Cool 4°C	TPH/DRO	3550/8015	Extract within 7 days, analyze 40 days
								(1) 1L gl amber (O&G)	Cool 4°C, H_2SO_4pH <2	Oil & Grease	9071	28 days
Nutrient Monitoring	Soil	1-2times initially, then once monthly	3 comp per sampling event + 1 dup[4] every 20 samples	1 comp of 1 grab ea from 2 quadrants (total of 6 quadrants)	SS spoons, SS bowls	48 hours	EPA Level 3	(2) 16 oz gl jar	Cool 4°C	TOC Ammonium-nitrogen Phosphate-phosphorous pH Moisture content Bacterial population density	9060 ASA/SSSA 33-3,33-4 ASA/SSSA 24-5.1,24-5.3 ASA/SSSA 12-2.6 ASA/SSSA 21-22 SM EWW 921F B	
Confirmation	Soil	Once every 650 cubic yard batch	3 comp per biocell batch + 1 dup[4] (10%)	1 comp of 1 grab ea from 2 quadrants (total of 6 quadrants)	SS spoons, SS bowls	10 days	NFESC Level C	(1) 4 oz gl jar (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days
								(1) 8 oz gl jar (TPH/DRO & O&G)	Cook 4°C	TPH/DRO	3550/8015	Extract within 7 days, analyze 40 days
										Oil & Grease	9071	28 days
Confirmation trip blanks	Water	One per cooler	One per cooler	Prepared by lab	Not applicable	10 days	NFESC Level C	(1) 40 ml gl vial (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days

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Sample Type	*Matrix*	*Sampling Frequency*	*Approx. No. of Samples*	*Sampling Method*	*Sampling Equipment*	*TAT*[1]	*QC Level*	*Sample Containers*	*Preservatives*	*Required Analysis*	*Analytical Method*[2]	*Holding Time*[3]
Confirmation Field Blank	Water	One per source of decon water	1	Prepared by sampling team	Not applicable	10 days	NFESC Level C	(2) 40 ml gl vial (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days
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								(1) 1L gl amber (O&G)	Cool 4°C, H2SO4pH <2	Oil & Grease	9071	28 days
Confirmation equipment rinsate blanks	Water	One per source of decon water	1	Prepared by sampling team	Not applicable	10 days	NFESC Level C	(2) 40 ml gl vial (TPH/GRO)	Cool 4°C	TPH/GRO	5030/8015	14 days
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Notes:
1) Calendar days
2) USEPA SW-846 methods unless otherwise specified
3) Begins from the date of collection in the field
4) Field duplicates shall be used by the laboratory for preparation of the matrix spikes and matrix spike duplicates

Table 4 – Project Quality Control Objectives										
	Project Action Limits		*Minimum PQLs*		*Accuracy Limits*		*Precision Limits*		*Completeness Limits*	
Analytical Method/Parameter	*Water (mg/L)*	*Soil (mg/kg)*	*Water (mg/L)*	*Soil (mg/kg)*	*Water (%)*	*Soil (%)*	*Water (%)*	*Soil (%)*	*Water (%)*	*Soil (%)*
TPH/GRO (5030/8015)	not specified	10	0.1	1	75-125	7-130	<35	<50	95	90
TPH/DRO (3550/8015)	not specified	40	1	5	75-125	7-130	<35	<50	95	90
OiL & Grease (9071)	not specified	250	5	10	75-125	70-130	<35	<50	95	90

and prior to arrival of the next batch. Replacement sand will be provided and spread proportionally if necessary following a visual survey of the biocell.

6.6 INCOMING MATERIAL ACCEPTANCE TESTING

Petroleum soils identified for treatment at this facility from MCB Camp Lejeune include: (1) contaminated soils where the source of contamination was virgin petroleum products from regulated USTs and which are not hazardous wastes under the North Carolina Administrative Code; (2) contaminated soils where the source of the contamination is neither virgin petroleum products from a regulated UST, nor a listed hazardous waste, nor a characteristic hazardous waste in accordance with the TCLP test (40 CFR 261.24).

Soils which are characteristically hazardous for RCRA metals (Arsenic, Barium, Cadmium, Lead, Mercury, Selenium, Silver, or Chromium) or volatile and semi-volatile organics cannot be managed at this facility. Therefore, prior to acceptance and treatment of TPH contaminated soils from MCB Camp Lejeune, incoming loads to the facility will need to be certified as nonhazardous based upon appropriate testing results in accordance with the requirements of 15A NCAC 2H.0200. These certifications will be the responsibility of the generator of each incoming load.

6.7 RESIDUALS MANAGEMENT

During the course of installation and operations, small amounts of contaminated debris including personnel protective equipment and nonhazardous rinse water will be generated. The nonhazardous debris will be containerized and stored on-site until transportation and disposal can be arranged. Nonhazardous liquids will be processed through the base wastewater treatment facilities.

Fig. 9

North Carolina Department of Environment, Health, and Natural Resources
Environmental Management Commission

DEM USE ONLY
PERMIT NO: SR

Permit Application For The Land Application or Containment and Treatment of Soils Containing Petroleum Fuel Products

Note: Processing of this application will not begin until three (3) copies of this application form and three (3) copies of all of the following information and documents, and the $400.00 non-refundable permit application processing fee (Make checks/M.O. Payable to: N.C. Dept. EHNR), have been submitted. If any of the required items have been excluded from the package, please explain.

SUBMIT COMPLETED APPLICATION TO: Wilmington REGIONAL OFFICE.
ATTN. REGIONAL SUPERVISOR
(For Appropriate Regional Office, See Map on Reverse of Pink Copy)

Applicant (Name of corporation, company, individual or other): MCB Camp Lejeune

Applicant Mailing Address: Commanding General (ATTN: AC/S EMD/IRD)
PSC Box 20004, Marine Corps Base, Camp Lejeune, NC 28542-0004
Zip Code

Robert Warren (910) 451-5003
Contract Person Telephone No.

Section A: GENERAL INFORMATION

1. LOCATION of source of contaminated soil: MCB Camp Lejeune, Camp Geiger
Jacksonville, North Carolina
County:

2. PRODUCT RELEASED: Indicate Specific Type (see below): Class II products, unknown
Class I Products: Motor gasoline, Aviation Gasoline, Gasohol, Some Military Jet Fuels (JP-4, Jet-A).
Class II Products: All other Jet Fuels, Kerosene, Diesel Fuel, Fuel Oils (Nos. 1-6), Motor Oils (new or used).

3. SOURCE(S) OF PETROLEUM RELEASED (Check all that apply)
- ☐ Underground Storage Tank (Indicate Tank Facility I.D. # (if known):) or
- ☐ Aboveground Storage Tank
- ☐ Spill From Tanker Truck or Other Carrier
- ☒ Other (specify) Unknown

4. If source(s) of petroleum released includes Underground Storage Tank, provide tank owner's name, mailing address and telephone number.
☐ Check here, if same as applicant
Name: Not applicable
Address:
Telephone Number:

5. Provide the name, mailing address and telephone number of the owner of the property on which the petroleum release occurred.
☐ Check here, if same as applicant
Name: Robert Warren, Commanding General (ATTN: AC/S EMD/IRD)
Address: PSC Box 20004, Marine Corps Base, Camp Lejeune, NC 28542-0004
Telephone Number: (910) 451-5003

Physical Address of Where The Contaminated Soil is Proposed to be Land Applied, Treated or Utilized:
MCB Camp Lejeune - Camp Geiger between Second and Third Streets and 'D' and 'E' Streets

6. Volume of product released (if known): unknown gallons.

7. Volume of contaminated soil (estimate): 376 cubic yards.

8. Date soil was excavated: varies

Section B: DESIGN INFORMATION (Check Only One)

1- ☐ Land Application - (Minimum Rate: One Time Application)
2- ☐ Land Application - (Conventional Rate: One Time Application)
3- ☒ Containment and Treatment or Treatment/Utilization at a Production Facility
4- ☐ Land Application (Dedicated Site)

Signature of Applicant

GW-70 2/3/93
3/10/93

Appendix A

Environmental Protection Plan

Environmental Protection Plan

MCB Camp Lejeune, North Carolina

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-93-D-3032
Delivery Order 0115

Prepared by

OHM Remediation Services Corp.
Norcross, Georgia

James A. Dunn, P.E.
Project Manager

March 1997

OHM Project No. 18943

1.0 ENVIRONMENTAL PROTECTION PLAN

This Environmental Protection Plan (EPP) has been prepared in accordance with standard OHM policies and procedures. The EPP provides specific information relating to the scope of work under Delivery Order No. 0115 construction of a biocell at Camp Geiger. The plan will provide site-specific information for:

- Land resources management
- Water resources management
- Air and noise pollution control
- Non-compliance/corrective action
- Post-evacuation cleanup

The control of environmental pollution will consider air, water and land impacts, as well as noise and solid waste management.

The land resources within the property of MCB Camp Lejeune, but outside the limits of permanent work, will be preserved in their condition or restored to a condition after completion of construction that does not detract from the appearance of the area. As much as is practical, construction activities will be limited to areas defined by the plans and specifications.

HISTORICAL AND ARCHAEOLOGICAL FINDS

Although the presence of historical artifacts is not anticipated, if a historical artifact is encountered during field operations, OHM will stop work and notify the NTR. The NTR will be responsible for contracting federal, state, and local authorities to determine if the site may contain other important historical artifacts, and whether this site qualifies for possible placement on the National Registrar of Historical Places. Field operations will not resume until the NTR issues a written authorization to proceed.

TEMPORARY CONSTRUCTION ROADS

The construction of all temporary construction roads in and around the project site will be performed in a manner as to minimize the impact to the natural environment. Water will be used for dust control, as necessary.

PROTECTION OF TREES AND SHRUBS

Prudent steps will be taken to protect trees and shrubs outside of the excavation zone as necessary. Those trees and shrubs within the excavation zone will be removed by the Forestry Division except for tree roots located in the excavation zone. All trees and shrubs removed as a result of the construction activities will be cut into manageable pieces and moved from the project site so as not to interfere with operations. Precautions will be taken to minimize the construction activities' impact on existing vegetation and will include but not be limited to:

- Utilization of existing or temporary construction roads only
- Closely supervised equipment operators with an emphasis placed on preservation of vegetation in non-work areas
- Proper guidance of heavy equipment and truck operators by site personnel to minimize damage to adjacent vegetation not directly affected by construction activities
- Utilization of equipment appropriately designed and sized for precise excavation

RESTORATION

Upon completion of the field construction activities, disturbed areas will be seeded. Prior to seeding and fertilization, lime will be applied as a soil amendment for pH adjustment at a rate of approximately 40 pounds per acre.

Any trees or other landscape features damaged by equipment will be restored if practical by trimming of damaged limbs and application of tree dressing. Damaged trees which cannot be restored will be felled, limbed and left on-site. Soil will be placed and compacted around any root systems exposed during excavation activities.

WATER RESOURCES PROTECTION

Brinson Creek is located near the site and could possibly be impacted by construction activities if proper sediment and erosion protection measures are not taken. To protect against damage, stormwater surface run-off leaving the site will be controlled by temporary erosion/sediment control techniques such as berms, silt fencing and grading. The area of bare soil exposed at any one time by construction activities will be held at a minimum.

Erosion Sediment Control

Prior to disturbance of native vegetation and soils, temporary erosion/sediment control will be established on the down gradient side of the excavation. Control techniques to be utilized will involve silt fencing.

Silt fencing will be installed with the fabric a minimum of 6 inches below grade and extending 36 inches above grade and fastened to posts no more than 6 feet apart. The posts will be installed with a minimum of 24 inches below grade and extend a minimum of 36 inches above grade. Fabric will be attached to the upslope side of the posts using 1-inch staples or tie wires. Silt fences will be inspected after every rain and daily during extended rain fall. Accumulated sediment will be removed before the depth reaches 12 inches.

Spill Control

Measures will be taken to prevent chemicals, fuels, oils, greases, bituminous materials and contaminated materials from entering streams, rivers or lakes. Absorbants will be available to solidify any leaks outside containment and any soil contaminated with fuel spills will be immediately removed and placed into appropriate containers and sampled to determine proper disposition.

DUST AND AIR POLLUTION CONTROL

Air and Noise Monitoring

Personnel and ambient air monitoring will be conducted as necessary in order to determine airborne dust and contaminant levels. Ambient air monitoring will be conducted at working locations and on occasion at the perimeter of the project site. This ensures that respiratory protection is adequate to protect personnel against the contaminants that are encountered as well as ensuring that harmful levels of airborne contaminants are not leaving the site.

OHM will only perform operations of heavy equipment during daylight hours to minimize the impact of off-site noise pollution. Noise exposure to off-site residents or personnel is expected to be minimal. Hearing protection for on-site workers will still be implemented if necessary as specified in the SHSP.

Particulate Emission Controls

Specific measures to be taken to minimize particle emissions for major activities during site construction include the following:

Site Grading

- Apply water to work and traffic areas as necessary to minimize dust emissions
- Halt dust-generating work when on-site wind conditions exceed 35 miles per hour

Movement of Equipment

- Water traffic areas as required to minimize dust emissions
- Designate equipment traffic patterns to minimize travel distance and vehicular dust emissions
- Limit vehicle speed to minimize dust emissions

No burning will be performed on-site. In the event of an expected fire on-site, work will stop immediately and the MCB Camp Lejeune fire department will be notified.

POST-EXCAVATION CLEANUP

All excavation equipment will be decontaminated in a lined pad prior to demobilizing from the site. Decontamination will consist of scraping and/or pressure-washing to remove visible soil and debris from tires and undercarriage of vehicles and heavy equipment.

Appendix B

Site Safety Plan

OHM SITE SAFETY PLAN
AMENDMENT TO 16032

PROJECT NAME: Camp Lejeune **PROJECT NUMBER:** 18943
LOCATION: Onslow County, NC **DATE:** March 12,1997

I. SCOPE OF WORK

This plan will consist of building a biocell and site mobilization. The following tasks will be performed:

Task 1 Mobilization and site preparation
Task 2 Excavate, trenching and pipe installation for biocell
Task 3 Place liner
Task 4 Place sand
Task 5 Installation of power, control and associated electrical equipment
Task 6 Equipment installation and plumbing
Task 7 Clean equipment
Task 8 Demobilization

II. ORGANIZATION AND AUTHORITIES

The Project Supervisor is responsible for the safe implementation of field activities and is ultimately responsible for site safety.
The Regional Health and Safety Manager is responsible for providing guidance to the Site Safety Officer (SSO) and Project Supervisor on the implementation of the site safety plan. The SSO is responsible for implementing the site safety plan on-site and enforces the plan by performing routine site inspections. The SSO has the authority to immediately shut down site operations where unsafe conditions or practices are observed and takes the lead during site emergencies. Site personnel are responsible for following the requirements of this plan and the directions of the SSO. OHM subcontractors may either develop and implement their own site safety plan or comply with the OHM site safety plan. The following personnel are designated to perform these job functions.

Project Manager: Jim Dunn (770) 734-8072
Site Supervisor: Randy Smith on site
Site Safety Officer: Randy Smith
Regional Health and Safety Director: Mark Wilson, CIH (770) 734-8086
Regional Manager: John Martin (770) 729-3900

III. HAZARD EVALUATION

CHEMICAL HAZARDS

The biocell is going to be placed in a noncontaminated area.

PHYSICAL HAZARDS (Heat/Cold Stress, Noise, Fire, and Explosion)

Manual lifting/back strain, water hazard

TASK SPECIFIC RISK ASSESSMENT

Task 1 – Site preparation and mobilization

Principle Steps Set-up work zones and support facilities, decontamination trailer, and office; construct decontamination facilities and process equipment staging pads	
Potential Hazards Involved	**Hazard Control Measures**
1) Manual lifting and material handling hazards	1)The rated lifting capacity cannot be exceeded 1)All operators must be trained 1)Do not carry personnel or lift anyone except in an approved safety platform 1)Employees will make certain the load can be safely lifted 1)No loads over 60 pounds will be lifted 1)Proper lifting techniques will be utilized 1)Follow OHM SOP for Personnel Lifting Safety (No. 2-3) 1)Follow procedures on MSDS when handling/pouring concrete
2) Electrical hazards	2) Electrical work will only be performed by approved electricians 2)No electrical work should be done on an energized circuit/circuit must be tested 2)Follow OHM SOP for Lockout/tagout (No. 6-4) 2)Hand tools must be grounded or double insulated 2)GFI must be used 2)Follow OHM SOP for Electrical Safety (No. 2-5)
3) Slips, trips, and falls	3)Tools and debris must be picked up 3)Spills will be cleaned up immediately 3)Personnel shall not walk or climb on equipment not designed as walking surfaces 3)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
4) Heavy construction equipment traffic and use	4)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 4)Do not carry personnel or lift anyone except in an approved safety platform 4)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 4)Heavy equipment shall have fully functioning safety devices 4)Follow OHM SOP for Equipment Inspection (No. 2-7)
5) Overhead electrical utility hazards	5)Maintain 15-foot buffer between heavy equipment and overhead electrical utilities
6) Portable power tool hazard	6)All hand tools and power tools shall be in good repair 6)When working, overhead tools will be secured when not in use 6)Tools cannot be thrown or dropped from heights 6)Follow OHM SOP for Equipment and Hand Tools (No. 7-7)
7) Underground utility hazards	7)Locate all buried utilities and pipelines prior to initiating excavation/grading operations.

Task 2 – Excavation, Trenching and Piping Installation

Principle Steps Excavate trenches; lay and connect pipe runs	
Potential Hazards Involved	**Hazard Control Measures**
1) Heavy equipment operating hazards	1) Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 1) Do not carry personnel or lift anyone except in an approved safety platform 1) Personnel shall be cognizant of the boom swing area and stay clear 1) Heavy equipment shall have fully functioning safety devices
2) Excavation and cave-in hazards	2) All underground installations will be located and marked 2)All materials must be kept 2 feet from the excavation's edge 2)Daily inspections of the excavations will be conducted by a competent person and soil type determined 2)The OHM excavation permit will be used 2)Excavations for piping trenches and others requiring personnel entry will not be greater than 4 feet deep 2)Excavations with potential hazardous atmosphere must be tested O_2/LEL /toxic 2)Follow OHM SOP (No. 6-5)
3) Buried and overhead electrical utility hazards	3)Locate all buried utilities prior to excavation operations 3)Maintain 15-foot buffer between heavy equipment and overhead electrical utilities
4) Overhead hazard to ground personnel	4)Do not suspend or travel with load over ground personnel
5) Vehicle safety hazard	5)All vehicles must be operated in a safe and legal manner 5)Seat belts must be worn while driving 5)Personnel shall drive at posted speed limits or at safe speeds 5)Follow OHM SOP for Vehicle Safety (No. 2-1)
6) Confined space entry	6)The OHM Confined Space Permit will be completed before entry 6)The atmosphere will be monitored for oxygen, combustible gases, and toxins. 6)All personnel will be trained for confined space entry 6)The confined space will be isolated, locked out, and tagged-out if there are mechanical or electrical hazards 6)Follow OHM SOP for Confined Space Entry (No. 6-1)
7) Slips, trips and falls	7)Tools and debris must be picked up 7)Spills will be cleaned up immediately 7)Personnel shall not walk or climb on equipment not designed as walking surfaces 7)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
8) Manual lifting and material handling hazards	8)Do not carry personnel or lift anyone except in an approved safety platform 8)Employees will make certain the load can be safely lifted 8)No loads over 60 pounds will be lifted 8)Proper lifting techniques will be utilized 8)Follow OHM SOP for Lifting Safety (No. 2-3)

Task 3 – Place liner

Principle Steps Place liner in biocell	
Potential Hazards Involved	**Hazard Control Measures**
1) Manual lifting and material handling hazards	1)The rated lifting capacity cannot be exceeded 1)Forklifts must have open guards 1)All operators must be trained 1)Do not carry personnel or lift anyone except in an approved safety platform 1)Follow OHM SOP forFork Lifts (No. 7-4) 1)Employees will make certain the load can be safely lifted 1)No loads over 60 pounds will be lifted 1)Proper lifting techniques will be utilized 1)Follow OHM SOP for Personnel Lifting Safety (No. 2-3) 1)Follow procedures on MSDS when handling/pouring concrete
2) Slips, trips, and falls	2)Tools and debris must be picked up 2)Spills will be cleaned up immediately 2)Personnel shall not walk or climb on equipment not designed as walking surfaces 2)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
3) Heavy construction equipment traffic and use	3)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 3)Do not carry personnel or lift anyone except in an approved safety platform 3)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 3)Heavy equipment shall have fully functioning safety devices 3)Follow OHM SOP for Equipment Inspection (No. 2-7)
4) Overhead electrical utility hazards	4)Maintain 15-foot buffer between heavy equipment and overhead electrical utilities
5) Portable power tool hazard	5)All hand tools and power tools shall be in good repair 5)When working, overhead tools will be secured when not in use 5)Tools cannot be thrown or dropped from heights 5)Follow OHM SOP for Equipment and Hand Tools (No. 7-7)

Task 4 - Place sand

Principle Steps Place sand over liner	
Potential Hazards Involved	**Hazard Control Measures**
1) Heavy equipment operating hazards	1)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 1)Do not carry personnel or lift anyone except in an approved safety platform 1)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 1)Heavy equipment shall have fully functioning safety devices 1)Follow OHM SOP for Equipment Inspection (No. 2-7)
2) Overhead hazard to ground personnel	2)Do not suspend or travel with load over ground personnel
3) Vehicular safety hazard	3)All vehicles must be operated in a safe and legal manner 3)Seat belts must be worn while driving 3)Personnel shall drive at posted speed limits or at safe speeds 3)Follow OHM SOP for Vehicle Safety (No. 2-1)
4) Noise	4)Follow SOP for Hearing Conservation Program (No. 3-3) 4)Personnel will wear hearing protection above 85 dBa 4)Personnel will be included in a hearing conservation program

Task 5 - Installation of power, control, and associated electrical equipment

Principle Steps

Install power and control (P&C) equipment; install electrical panels; install and interconnect equipment and P&C wiring

Potential Hazards Involved		Hazard Control Measures
1)	Heavy equipment operating hazards	1)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 4)Do not carry personnel or lift anyone except in an approved safety platform 4)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 4)Heavy equipment shall have fully functioning safety devices 4)Follow OHM SOP for Equipment Inspection (No. 2-7)
2)	Electrical hazards	2)Electrical work will only be performed by approved electricians 2)No electrical work should be done on an energized circuit/circuit must be tested 2)Follow OHM SOP for Lockout/tagout (No. 6-4) 2)Hand tools must be grounded or double insulated 2)GFI must be used 2)Follow OHM SOP for Electrical Safety (No. 2-5)
3)	Portable power tool hazards	3)All hand tools and power tools shall be in good repair 3)When working, overhead tools will be secured when not in use 3)Tools cannot be thrown or dropped from heights 3)Follow OHM SOP for Equipment and Hand Tools (No. 7-7)

Task 6 - Equipment Installation and Plumbing

Principle Steps Installation of process tanks and plumbing equipment	
Potential Hazards Involved	**Hazard Control Measures**
1) Manual lifting and material handling hazards	1)The rated lifting capacity cannot be exceeded 1)Forklifts must have open guards 1)All operators must be trained 1)Do not carry personnel or lift anyone except in an approved safety platform 1)Follow OHM SOP forFork Lifts (No. 7-4) 1)Employees will make certain the load can be safely lifted 1)No loads over 60 pounds will be lifted 1)Proper lifting techniques will be utilized 1)Follow OHM SOP for Personnel Lifting Safety (No. 2-3) 1)Follow procedures on MSDS when handling/pouring concrete
2) Electrical hazards	2)Electrical work will only be performed by approved electricians 2)No electrical work should be done on an energized circuit/circuit must be tested 2)Follow OHM SOP for Lockout/tagout (No. 6-4) 2)Hand tools must be grounded or double insulated 2)GFI must be used 2)Follow OHM SOP for Electrical Safety (No. 2-5)
3) Slips, trips, and falls	3)Tools and debris must be picked up 3)Spills will be cleaned up immediately 3)Personnel shall not walk or climb on equipment not designed as walking surfaces 3)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
4) Heavy construction equipment traffic and use	4)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 4)Do not carry personnel or lift anyone except in an approved safety platform 4)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 4)Heavy equipment shall have fully functioning safety devices 4)Follow OHM SOP for Equipment Inspection (No. 2-7)
5) Overhead electrical utility hazards	5)Maintain 15-foot buffer between heavy equipment and overhead electrical utilities
6) Portable power tool hazard	6)All hand tools and power tools shall be in good repair 6)When working, overhead tools will be secured when not in use 6)Tools cannot be thrown or dropped from heights 6)Follow OHM SOP for Equipment and Hand Tools (No. 7-7)
7) Crane operation and hoisting hazards	7)Prepare a crane lift plan prior to crane operations 7)Inspect all rigging equipment prior to each use 7)Operators must be qualified 7)Load limits on crane, hoist, hooks, slings, wire rope cannot be exceeded 7)Tagline will be used 7)Follow OHM SOP Crane and Hoisting, and Rigging (No. 7-2 & 7-3)

Task 7 - Clean equipment

Principle Steps Clean equipment	
Potential Hazards Involved	**Hazard Control Measures**
1) Slips, trips, and falls	1)Tools and debris must be picked up 1)Spills will be cleaned up immediately 1)Personnel shall not walk or climb on equipment not designed as walking surfaces 1)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
2) Pressure washing hazard	2)Wear appropriate PPE 2)Only trained personnel will operate high pressure washer 2)The equipment cannot be altered 2)Follow OHM SOP for Pressure Washing (No. 7-1)
3) Manual lifting and material handling hazards	3)Do not carry personnel or lift anyone except in an approved safety platform 3)Employees will make certain the load can be safely lifted 3)No loads over 60 pounds will be lifted 3)Proper lifting techniques will be utilized 3)Follow OHM SOP for Lifting Safety (No. 2-3)
4) Spill/splash hazard	4)Wear splash protection 4)Cleanup spills immediately 4)Follow this SHSP Section 3.1 and 5.2
5) Noise	5)Follow SOP for Hearing Conservation Program (No. 3-3) 5)Personnel will wear hearing protection above 85 dBa 5)Personnel will be included in a hearing conservation program

Task 8 – Demobilization

Principle Steps Take down work zones fencing, decontamination trailer, and office; remove decontamination facilities	
Potential Hazards Involved	**Hazard Control Measures**
1) Manual lifting and material handling hazards	1)The rated lifting capacity cannot be exceeded 1)Forklifts must have open guards 1)All operators must be trained 1)Do not carry personnel or lift anyone except in an approved safety platform 1)Follow OHM SOP for Fork Lifts (No. 7-4) 1)Employees will make certain the load can be safely lifted 1)No loads over 60 pounds will be lifted 1)Proper lifting techniques will be utilized 1)Follow OHM SOP for Personnel Lifting Safety (No. 2-3) 1)Follow procedures on MSDS when handling/pouring concrete
2) Electrical hazards	2)Electrical work will only be performed by approved electricians 2)No electrical work should be done on an energized circuit/circuit must be tested 2)Follow OHM SOP for Lockout/tagout (No. 6-4) 2)Hand tools must be grounded or double insulated 2)GFI must be used 2)Follow OHM SOP for Electrical Safety (No. 2-5)
3) Slips, trips, and falls	3)Tools and debris must be picked up 3)Spills will be cleaned up immediately 3)Personnel shall not walk or climb on equipment not designed as walking surfaces 3)Follow OHM SOP for Slips, Trips and Falls (No. 2-4 & 2-9)
4) Heavy construction equipment traffic and use	4)Personnel approaching heavy equipment will make eye contact and signal the operator to cease activity 4)Do not carry personnel or lift anyone except in an approved safety platform 4)Personnel shall be cognizant of the boom swing area and stay clear. Do not suspend or travel with load over ground personnel. 4)Heavy equipment shall have fully functioning safety devices 4)Follow OHM SOP for Equipment Inspection (No. 2-7)
5) Overhead electrical utility hazards	5)Maintain 15-foot buffer between heavy equipment and overhead electrical utilities
6) Portable power tool hazard	6)All hand tools and power tools shall be in good repair 6)When working, overhead tools will be secured when not in use 6)Tools cannot be thrown or dropped from heights 6)Follow OHM SOP for Equipment and Hand Tools (No. 7-7)

HAZARD COMMUNICATION

The purpose of hazard communication (Employee Right-to-Know) is to ensure that the hazards of all chemicals located at this field project site are transmitted (communicated) according to 29 CFR 1926.59 to all OHM personnel and OHM subcontractors. Hazard communication will include the following:

Container Labeling
OHM personnel will ensure that all drums and containers are labeled according to contents. These drums and

containers will include those from manufacturers and those produced on site by operations. All incoming and outgoing labels shall be checked for identity, hazard warning, and name and address of responsible party.

+MSDSs

There will be an MSDS located on site for each hazardous chemical known to be or used on site. All MSDSs will be located in Appendix A of the site safety plan. The site safety plan can be found in the project office trailer.

Employee Information and Training

Training employees on chemical hazards is accomplished through on ongoing corporate training program. Additionally, chemical hazards are communicated to employees through daily safety meetings held at OHM field projects and by an initial site orientation program.

At a minimum, OHM and related subcontractor employees will be instructed on the following:

Chemicals and their hazards in the work area

How to prevent exposure to these hazardous chemicals

What the company has done to prevent workers' exposure to these chemicals

Procedures to follow if they are exposed to these chemicals.

How to read and interpret labels and MSDSs for hazardous substances found on OHM sites

Emergency spill procedures

Proper storage and labeling

Before any new hazardous chemical is introduced on site, each OHM and related subcontractor employee will be given information in the same manner as during the safety class. The site supervisor will be responsible for seeing that the MSDS on the new chemical is available for review by on site personnel. The information pertinent to the chemical hazards will be communicated to project personnel.

Morning safety meetings will be held and the hazardous materials used on site will be discussed. Attendance is mandatory for all on site employees.

Refer to Attachment of the site safety plan to find listed MSDSs for chemicals anticipated to be brought to the site by OHM.

IV. SITE CONTROL

WORK ZONES

Site operations will be segregated in two work zones: a Construction Zone (CZ); and a Support Zone (SZ) where site support facilities are located. The boundary of the CZ/SZ will be marked with warning signs or barrier tape and access control points will be designated to restrict access to authorized personnel. A site map depicting two work zones will be developed during site mobilization and posted.

SITE COMMUNICATIONS

On-site communications will be established between site work zones and will consist of verbal communications, line of sight observations, or two-way radios. Off-site communications will be established in the support zone to summon off-site emergency services and will consist of either on-site cellular telephones or identifying the location of the nearest telephone to the site.

SAFE OPERATING PROCEDURES

OHM Health and Safety procedures apply to OHM's hazardous waste and emergency response operations. These procedures are contained in OHM's Health and Safety Procedures Manual that is reviewed with and provided to site supervisors during OSHA Supervisors Training. Questions on the applications of these procedures to site operations should be directed to the Regional Health and Safety Manager. Project-specific procedures are attached to this plan.

V. PERSONAL PROTECTIVE EQUIPMENT

The following Levels of Protection are designated for each task performed in site work zones, based on the hazards posed by each task. Modifications of these Levels of Protection are provided for those tasks with specific personal protective equipment requirements. **An upgrade/downgrade in the designated Level of Protection may only be instituted for those tasks' where more than one level of protection is specified (i.e., Mod D/C) and only after air monitoring results justify the upgrade/downgrade, based on the action levels listed in this plan. For those tasks where more than one level of protection are specified (i.e., Mod D/C) the first level of protection (Mod D) is the initial level of protection required for the task, with the second level (Level C)being either the downgrade or upgrade level of protection.**

NO CHANGES TO THE DESIGNATED LEVEL OF PROTECTION BELOW SHALL BE MADE FOR THOSE TASKS WHERE ONLY ONE LEVEL OF PROTECTION IS SPECIFIED WITHOUT AN AMENDMENT TO THIS PLAN AND THE APPROVAL OF THE REGIONAL HEALTH AND SAFETY MANAGER/DIRECTOR.

Task 1,2,3,4,5,6,7,9
Level of Protection: Level D

Task 8 Clean equipment
Level of Protection: Pressuring washing Level D with rain gear and Face shield Dry brushing Level D

LEVEL D
Boots: Steel Toe/Shank Boots
Head/Face Protection: Hard Hat
Eye Protection: Safety Glasses

VI. AIR MONITORING

Air monitoring will not be conducted on this site.

VII. EMERGENCY RESPONSE PLAN

PRE-EMERGENCY PLANNING

Before starting site operations, the SSO will implement emergency procedures that include: identifying the location and route to emergency medical services; establishing site communications; designating emergency warning signal and evacuation routes; inventorying emergency equipment; and communicating emergency procedures to personnel.

PERSONNEL ROLES, LINES OF AUTHORITY AND COMMUNICATION

The SSO takes the lead during site emergencies until off-site emergency responders arrive on-site. In cases of major emergencies, OHM personnel will evacuate the site, contact local emergency responders, and rely on them to handle the emergency. Minor emergencies that are controllable on-site with emergency equipment located at the site will be addressed by OHM personnel with the approval of the SSO.

EMERGENCY RECOGNITION AND PREVENTION

The SSO will conduct an initial site safety briefing to review the requirements of the site safety plan with site personnel. This briefing will include discussions on the recognition, prevention and control of emergencies anticipated on-site. Daily safety meetings will be held to emphasize emergency prevention and control measures.

SAFE DISTANCE AND PLACES OF REFUGE

The on-site assembly point will be located in the SZ where site personnel are accounted for and emergency services are contacted. The SSO will evaluate the emergency situation based on the hazards posed to site personnel remaining at the on-site assembly point, then determine the need and location of further off-site evacuation and assembly points.

SITE SECURITY AND CONTROL

Access to the site will be controlled by the SSO until local emergency responders arrive. The SSO will then relinquish site security/control to the authorized emergency response organization.

EVACUATION ROUTES AND PROCEDURES

The emergency evacuation signal will be one long blast with an air horn. Evacuation routes will be designated that direct evacuation from the EZ in an upwind direction. In cases of uncontrollable emergencies such as fire, explosion, or toxic vapor release, a site evacuation shall be implemented as follows:

- Sound the emergency warning signal.
- Stop work activities and evacuate the EZ in an upwind direction.
- Assemble in the SZ and account for personnel. Dispatch a response team equipped with appropriate PPE (minimum Level B protection) and rescue unaccounted personnel.
- Contact off-site emergency response services.

EMERGENCY MEDICAL TREATMENT AND FIRST AID

In the absence of reasonably accessible medical services, an SSO trained in first aid by the American Red Cross or the equivalent will be available on-site to render first aid. An industrial first aid kit available on-site, with its contents approved by OHM's consulting physician. The contents of the first aid kit will be checked by the SSO weekly, with expendable items replaced when used.

EMERGENCY ACTIONS

If actual or suspected serious injury occurs on-site implement the following emergency actions:

- Remove the exposed/injured person(s) from immediate danger.
- Render first aid if necessary. Decontaminate injured after critical first-aid has been administered.

- Obtain paramedic services or ambulance transport to local hospital. This procedure shall be followed even if there is no visible injury.

- Other personnel in the work area shall be evacuated and assembled at the SZ until the SSO determines that it is safe to resume work.

RESPONSE FOLLOW-UP

The SSO must complete an incident investigation form for site emergencies within 24 hours of the incident and submit/fax it to their Division Manager. Incidents involving potential Lost Time Accident (LTA) injuries, overexposure incidents, or emergencies causing site evacuations must be reported within 24 hours after incident occurrence to:

Angelo Liberatore
Regional Health and Safety Manager
Phone: 770/453-7671 (work)
770/476-0112 (home)
Fax: 770/729-3905

The SSO will identify the cause(s) of the incident and take action to prevent reoccurrence. The SSO will also evaluate the effectiveness of the site's emergency response procedures and institute corrective actions when warranted.

EMERGENCY EQUIPMENT ON-SITE

The following emergency equipment are located on-site:

- Fire Extinguishers @ OHM Vehicle
- Industrial First Aid Kit @ OHM Vehicle
- Portable Eye wash/Shower @ OHM Vehicle

EMERGENCY CONTACTS

The following emergency contacts will be identified during project mobilization and conspicuously posted in the SZ.

	Name	Phone Number
Hospital:	Onslow County Hospital	(919) 577-2345
Fire Dept.:	911	
Police Dept.:	911	

Location and Route to Hospital: _____

VIII. SITE SAFETY PLAN CERTIFICATIONS

This Site Safety Plan has been approved by [signature] 3/2/97

Appendix C

Quality Control Plan

Quality Control Plan
Construction of Biocell
Camp Geiger, MCB Camp Lejeune
Jacksonville, North Carolina

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-93-D-3032
Delivery Order 0115

Prepared by

OHM Remediation Services Corp.
Norcross, Georgia

John P. Franz, P.E.
Program Manager

James A. Dunn, P.E.
Project Manager

Jimmie L. Whedbee
Program QC Manager

March 1997

OHM Project No. 18943

OHM Remediation Services Corporation

Delivery Order No. _____

Project Location _____

Quality Control Plan Review

By signing this document, I am stating that I have read and understand the site Quality Control Plan for this Delivery Order/Project. Any questions or comments should be addressed to either the Program or site QC Manager.

Name (Print)	*Signature*	*Title*	*Company*	*Date*
		QC MANAGER		
		PROJECT MANAGER		
		PROJECT SUPERINTENDENT		
		PROJECT ENGINEER		
		PROJECT GENERAL FOREMAN		
		PROJECT FOREMAN		
		SITE SAFETY OFFICER		

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1.0 STATEMENT OF QC PROGRAM

OHM Remediation Services Corporation (OHM), a subsidiary of OHM Corporation, will provide and maintain an effective Contractor Quality Control (CQC) Program. This program will be performed in conjunction with the Program Quality Control Plan (OHM, December 14, 1995) as applicable and in accordance with the requirements of Contract No. N62470-93-D-3032, Atlantic Division, Naval Facilities Engineering Command, dated August 1993. OHM will perform the inspection and test required to ensure that materials, workmanship, and construction conform to drawings, specifications, and contract requirements. OHM will perform each test or inspection specified, unless the required inspection or test is designated to be performed by the Government.

Note to Employees

Quality Control should not be considered a person or an organization of personnel, but a concept to perform in such a manner that the end product of our efforts meet established criterion, the customer's needs. The Quality Control individual or group cannot inspect quality into the final product, but only inspect and document the results of our efforts. The only person that can build quality into the product are the individuals performing the task of producing the end product.

It should be noted by all employees that the documentation requirements of OHM procedures, plans, and the delivery order specifications are considered equally as important as the end product itself. When it is stated that the documentation will be approved prior to the start of work, this is exactly what is intended. To eliminate problems in this area requires careful planing and execution by everyone.

We would do well to remember that our livelihood depends on how well we satisfy our customer. To accomplish this requires teamwork and attention to detail by all employees and contractors.

2.0 QC ORGANIZATION AND RESPONSIBILITIES

2.1 Organization

The QC organization is depicted in the Organizational Chart (Exhibit 2.1). Other positions are reflected to show organizational interface and lines of communication. Depending upon the scope, size and complexity of the project, the Project Superintendent may also fulfill the duties of the Project QC Manager when approved by the Navy.

2.2 QC Managers

The Program QC Manager's resume is included in the Program QC Plan and the QC Manager's resume (delivery order specific) is included herein as Exhibit 2.2.

2.3 Duties, Responsibilities and Authorities

1. The **Program QC Manager** shall report to the Program Manager and shall be responsible for developing, maintaining, and enforcing the quality control program.

2. The **QC Manager** shall report to the Program QC Manager and shall be responsible for the management and implementation of the Program QC Plan and the delivery order specific QC Plan for both on-and off-site activities. Specific duties include: attend the Coordination and Mutual Understanding Meeting; conducting the scheduled QC meetings; perform the three phases of control; perform submittal reviews; perform submittal approval except for submittals designated for Contracting Officer approval; ensure tests are performed; and prepare QC certifications and QC documentation as required by this Plan. Except for managing and implementing the QC program, the QC Manager shall perform no other duties without the authorization of the Contracting Officer. The QC Manager shall be responsible for delivering the following documentation to the Contracting Officer:

    - Combined Contractor Production Report/Contractor Quality Control Report, original and one copy, by 10:00 AM the next working day after each day that work is performed.

    - Testing Plan and Log, three copies, at the end of each month.

    - Monthly Summary Report of Field Tests, original and two copies attached to the Contractor Quality Control Report at the end of each month. (See paragraph entitled "Test Results" in Section 4.0)

- QC meeting minutes, three copies within two calendar days of the meeting.

- Rework items list, three copies at the end of each month.

- Completion Certification attesting that "the work has been completed, inspected, tested, and is in compliance with the contract."

3. The QC Manager is expected to attend the daily site safety meetings and abide by all site rules and regulations.

2.4 Appointment Letters

The appointment letter for the site QC Manager is included as Exhibit 2.4. The appointment letter for the Program QC Manager can be found in the Program QC Plan.

3.1 Reviewing, Approving, and Managing Submittals

A. Contractor's Responsibility

The following responsibilities are those of the contractor and not the QC organization. They are included only for the purpose of providing an understanding of the contractor's responsibility. While the QC organization is expected to assist the contractor in fulfillment of their responsibilities, no part of these responsibilities shall be assumed by the QC organization without the expressed written permission of the Contracting Officer.

1. Coordinate preparation and processing of submittals with performance of work so that work will not be delayed by submittal processing.

2. Except as specified otherwise, allow a review period, beginning with receipt by the approving authority, that includes at least 15 working days for submittals for QC Manager approval and 20 working days for submittals requiring Contracting Officer approval. The period of review for submittals with Contracting Officer approval begins when the Government receives the submittal from the QC organization. The period of review for each resubmittal is the same as for the initial submittal.

3. Determine and verify field measurements, materials, field construction criteria; review each submittal; check and coordinate each submittal with requirements of the work and contract documents.

4. Transmit submittals to the QC organization in orderly sequence, in accordance with the submittal register, and to prevent delays in the work, delays to the Government, or delays to separate contractors.

5. Correct and resubmit submittals as directed by the approving authority. Direct specific attention, in writing or on resubmitted submittals, to revisions not requested by the approving authority on previous submissions.

6. Furnish additional copies of submittals when requested by the Contracting Officer, to a maximum limit of 20 copies.

7. Complete work that must be accomplished as a basis of a submittal in time to allow the submittal to occur as scheduled.

8. Ensure no work has begun until submittals for that work have been returned as "approved" or "approved as noted" except to the extent that a portion of the work must be accomplished as a basis of the submittal.

- **Format of Submittals**

Transmittal Form. Transmit each submittal, except sample installations and sample panels, to the office of the approving authority utilizing transmittal forms standard for the project. The transmittal form shall identify the Contractor, indicate the date of the submittal, and include information prescribed by the transmittal form and required in the paragraph entitled "Identifying Submittals". Transmittal forms for submittals of sample panels and sample installations shall record any actions and locations of the samples.

Identifying Submittals. Except sample panel and sample installation, submittals shall be identified with the following information permanently adhered to or noted on each separate component of each submittal and noted on the transmittal form. Mark each copy identically, with the following:

1. Project title and location.

2. Construction contract number and delivery order number.

3. The section and paragraph number of the section for which the submittal is required.

4. The Submittal Description (SD) number (see Exhibit 3.1) of each component of the submittal.

5. If a resubmittal, add an alphabetic suffix to the submittal description, for example, SD-10A, to indicate the resubmission.

6. The name, address, and telephone number of the subcontractor, supplier, manufacturer, and any other second tier contractor associated with the submittal.

7. Product identification and location in project.

- **Format of Product Data**

1. Present product data submittals for each section as a complete, bound volume. Include a table of contents listing page and catalog item numbers for product data.

2. Indicate, by prominent notation, each product that is being submitted, indicate the specification section number, and paragraph number to which it pertains.

3. Supplement product data with material prepared for the project to satisfy submittal requirements for which product data does not exist. Identify this material as developed specifically for the project.

- **Format of Shop Drawings**

1. Shop drawings shall be not less than 8 1/2 by 11 inches nor more than 30 by 42 inches.

2. Present 8 1/2 by 11 inches sized shop drawings as a part of the bound volume for the submittals required by the section. Present larger drawings in the sets.

3. Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to the information required in the paragraph entitled "Identifying Submittals."

4. Dimension drawings, except diagrams and schematic drawings; prepare drawings demonstrating interface with other trades to scale. Identify materials and products for work shown.

- **Format of Samples**

1. Furnish samples in the sizes below, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:

   - Sample of equipment or device: Full size.

   - Sample of materials less than 2 by 3 inches: Built-up to 8 1/2 by 11 inches.

   - Sample of materials exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.

- Sample of linear devices or materials, such as conduit and handrails: 10-inch length or length to be supplied, if less than 10 inches.

- Sample of non-solid naturals, (e.g., sand, paint, etc.): One pint, unless specified otherwise in technical sections.

- Sample panel: 4 feet by 4 feet.

- Sample Installation: 100 square feet.

2. Samples showing range of variation: Where unavoidable variations must be expected, submit sets of samples of not less than three units showing the extremes and middle of the range.

3. Reusable samples: Incorporate returned samples into the work only if so specified or indicated. Incorporated samples shall be in an undamaged condition at the time of use.

4. Recording of sample installation: Note and preserve the notation of the area constituting the sample installation but remove the notation at the final cleanup of the project.

5. When a color, texture, or pattern is specified in naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

- **Format of Administrative Submittals**

1. When the submittal includes a document which is to be used in the project or become a part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document, but to a separate sheet accompanying the document.

2. Operation and Maintenance Manual Data: Submit in accordance with the section entitled "Operation and Maintenance Data" of the individual delivery order.

- **Number of Copies of Product Data**

1. Submit six (6) copies of submittals of product data requiring review and approval only by the QC organization and seven (7) copies of product data requiring review and approval by the Contracting Officer.

- **Number of Copies of Shop Drawings**

    1. For shop drawings presented on sheets larger than 8 1/2 by 14 inches, submit seven (7) prints of each shop drawing prepared for this project.

    2. For shop drawings presented on sheets 8 1/2 by 14 inches or less, conform to the quality requirements for the product data.

- **Number of Samples**

    1. Submit two (2) samples, or two (2) sets of samples showing range of variation of each required item. One (1) approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.

    2. Submit one (1) sample panel. Include components listed in the technical section or as directed.

    3. Submit one (1) sample installation, where directed.

    4. Submit one (1) sample of non-solid materials.

- **Number of Copies of Administrative Submittals**

    1. Unless otherwise specified, submit administrative submittals which are 8 1/2 by 14 inches or smaller in size in the quantity required for product data.

    2. Unless otherwise specified, submit administrative submittals larger than 8 1/2 by 14 inches in size in the quantities required for shop drawings.

B. QC Organization Responsibilities

The Quality Control (QC) organization shall be responsible for reviewing and certifying that submittals are in compliance with contract requirements. The approving authority on submittals is the QC Manager unless submission to the Contracting Officer is specified for the specific submittal. The specific QC responsibilities for submittals are as follows:

1. Note the date on which the submittal was received from the contractor on each submittal for which the Site QC Manager is the approving authority.

2. Determine and verify field measurements, materials, field construction criteria; review each submittal; and check and coordinate each submittal with requirements of the work and contract documents.

3. Review submittals for conformance with project design concepts and compliance with the contract documents.

4. Act on submittals, determining the appropriate action based on the review of the submittal.

   - When the QC Manager is the approving authority, take the appropriate action on the submittal from the paragraph of "Possible Actions."

   - When the Contracting Officer is the approving authority or when a variation has been proposed, forward the submittal to the Contracting Officer with the certifying statement or return the submittal marked "Not Reviewed" or "Revise and Resubmit" as appropriate.

5. Ensure that the material is clearly legible.

6. Stamp each sheet of each submittal with the appropriate stamp, except that data submitted in bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only. When agreed to by the Contracting Officer, a single cover sheet containing the required certification wording (see Exhibit 3.1a and 3.1b) may be utilized instead of the above. The stamp or cover sheet shall contain the following wording:

   - When the approval authority is the Contracting Officer, the QC organization will certify submittals forwarded to the Contracting Officer with the following certifying statement:

     I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated into Contract Number N62470-93-D-3032, is in compliance with the Contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval. Government approval of proposed variation, if any, is recommended.

Certified by Submittal Reviewer _____, Date _____

Certified by QC Manager _____, Date _____

- When approving authority is the QC Manager, the QC Manager will use the following approval statement when returning submittals to the Contractor as "Approved" or "Approved as Noted":

  I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated into Contract Number N62470-93-D-3032, is in compliance with the Contract drawings and specification, can be installed in the allocated spaces, and is ____ approved for use, ____ approved for use subject to Government approval of proposed variation.

  Certified by Submittal Reviewer _____, Date _____

  Approved by QC Manager _____, Date _____

7. Sign the certifying statement or approval statement. The signatures shall be in original ink. Stamped signatures are not acceptable.

8. Update the submittal register as submittal actions occur and maintain the submittal register at the project site until final acceptance by the Contracting Officer.

9. Retain a copy of approved submittals at the project site, including the contractor's copy of approved samples.

10. When the approving authority is the QC Manager, forward two copies of each approved submittal, except "Samples", where only one set is required, to the Contracting Officer.

- **Actions Possible**

Submittals returned to the contractor shall contain one of the following notations:

1. **"Not Reviewed"** shall indicate the submittal has been previously reviewed and approved, is not required as a submittal, does not have evidence of being reviewed and approved by the Contractor, or is not complete. A submittal marked "Not Reviewed" shall be returned with explanation of the reason it is not reviewed. Returned submittals deemed to lack review by the Contractor or to be incomplete shall be resubmitted with appropriate action, coordination, or change.

2. Submittals marked **"Approved"** or **"Approved as Submitted"** authorize the Contractor to proceed with the work covered.

3. Submittals marked **"Approved as Noted"** authorize the Contractor to proceed with the work as noted provided the Contractor takes no exception to the notations.

4. Submittals marked **"Revise and Resubmit"** or **"Disapproved"** indicates the submittal is incomplete or does not comply with the design concept or the requirements of the Contract documents and shall be resubmitted with appropriate changes.

3.2 Personnel Authorized to Review and Certify Submittals

In addition to the QC Manager, the personnel listed in Exhibit 3.2 are authorized to review and certify submittals as indicated. Any additional personnel required to review and certify submittals will be submitted in writing to the Contracting Officer for approval.

3.3 Submittal Register

The submittal register is shown in Exhibit 3.3. The submittal register shall be maintained as follows:

1. Column (a): List each specification section in which a submittal is required.

2. Column (b): List each submittal description (SD No. and type, e.g., SD-04, Drawings) required in each specification section. Follow each submittal description with the list of material of products to be addressed in each submittal description.

3. Column (c): List one principle paragraph in the specification section where a material or product is specified. This listing is only to facilitate submittal reviews. Do not consider entries in column (c) as limiting project requirements; do not consider that a blank must be filled in by the Contractor or the Government.

4. Column (d): Indicates approving authority for each submittal. A "G" indicates approval by the Contracting Officer; a blank indicates approval by the site QC Manager.

5. Column (e): Indicates for submittals to be approved by Contracting Officer, specific reviewers other than the QC organization. This column may or may not be filled out on the copy supplied by the Government.

Columns (f) through (o) will be completed by the QC organization as follows:

6. Column (f): As submittals are processed, list a consecutive number assigned by the Contractor for each group of submittals. Place this same number in the appropriate block on the "Submittal Transmittal Form". For a resubmission, repeat transmittal control number of the original submittal with a suffix; e.g., No. "100B" is second resubmission of material originally transmitted under No. "100".

7. Column (g): List dates scheduled for approving authority to receive submittals. These dates are the scheduled beginnings of submittal review period. The Contractor proposes these dates and the Contracting Officer approves them to establish the approved submittal register.

8. Columns (h) and (i): Use to record Contractor's review when forwarding submittals to the QC organization.

9. Column (j): Enter date QC organization receives submittal from contractor.

10. Columns (k) and (l): If approving authority is Contracting Officer, enter date QC organization forwards certified submittal to Contracting Officer.

11. Columns (m) and (n): If approving authority is Contracting Officer, enter the Government action and date of action as shown on returned submittal. If approving authority is QC Manager, enter QC action and date of action.

12. Column (o): Enter date QC organization returns submittal to Contractor, regardless of who is approving authority. If QC Manager is approving authority, it is also the date the information is forwarded to the Government.

4.0 ACCREDITED LABORATORIES/TESTING LABORATORIES

4.1 Testing Laboratory Requirements

Testing services will be provided by an independent accredited testing laboratory qualified to perform sampling and tests. When the proposed testing laboratory is not accredited by an acceptable accreditation program, as described by the paragraph entitled "Accredited Laboratories," submit to the Contracting Officer for approval, certified statements signed by an official of the testing laboratory attesting that the proposed laboratory meets or conforms to the following requirements:

1. Sampling and testing shall be under the technical direction of a registered professional engineer (PE) with at least five years of experience in sampling and testing.

2. Laboratories engaged in testing of concrete and concrete aggregates shall meet the requirements of ASTM C 1077, 1990.

3. Laboratories engaged in testing of bituminous paving materials shall meet the requirements of ASTM D 3666, 1990 (Rev. A).

4. Laboratories engaged in testing of soil and rock, as used in engineering design and construction, shall meet the requirements of ASTM D 3740, 1988.

5. Laboratories engaged in nondestructive testing (NDT)/nondestructive examination (NDE) shall meet the requirements of ASTM E 543, 1989 (Rev. A).

6. Laboratories performing work in connection with specific sampling and chemical analysis of contaminated media according to the delivery order specification shall be handled as defined in the Sampling and Analysis Plan (SAP).

4.2 Accredited Laboratories

Acceptable accreditation programs are the National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP), the American Association of State Highway and Transportation Officials (AASHTO) program, and the American Association for Laboratory Accreditation (AALA) program. Furnish to the Contracting Officer, a copy of the Certificate of Accreditation, Scope of Accreditation and latest directory of the accrediting organization for

accredited laboratories. The scope of the laboratory's accreditation shall include the test methods required by the contract.

4.3 Inspection of Testing Laboratories

Prior to approval of non-accredited laboratories, the proposed testing laboratory facilities and records may be subject to inspection by the Contracting Officer. Records subject to inspection include equipment inventory, equipment calibration dates and procedures, library of test procedures, audit and inspection reports by agencies conducting laboratory evaluations and certifications, testing and management personnel qualifications, test report forms, and the internal QC procedures.

4.4 Test Results

Test reports shall cite applicable contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results shall be signed by a testing laboratory representative authorizes to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager. The QC Manager shall furnish a summary report of field tests by attaching a copy of the report to the last daily Contractor Quality Control Report of each month.

5.1 Testing Plan and Log

As tests are performed, the QC Manager shall record on the "Testing Plan and Log" (Exhibit 5.1) the date the test was conducted, the date the test results were forwarded to the Contracting Officer, any remarks and acknowledgment that an accredited or Contracting Officer approved testing laboratory was used. Attach a copy of the updated testing plan and log to the last daily Contractor Quality Control Report of each month.

In development of the Testing Plan and Log, consideration shall be given to the use of multiple Testing Plans and Logs subdivided by definable features of the specification and/or of different materials within a definable feature section of the specification. When materials are tested on a specific frequency, accumulated material totals shall be recorded in the remarks section or on an attachment to each specific Testing Plan and Log to provide assurance that the test are conducted at the required intervals.

5.2 Testing

Except as stated otherwise in the specification sections, perform sampling and testing required under the contract.

6.1 Rework Documentation Requirements

The QC Manager shall maintain a list of work that does not comply with the contract, identifying what items need to be reworked, the date the item was originally discovered, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the Rework Items List (Exhibit 6.1) to the last daily Contractor Quality Control Report of each month. The Contractor shall also be responsible for including on this list, items needing rework including those identified by the Contracting Officer.

7.1 Coordination and Mutual Understanding Meeting

After submission of the QC Plan and prior to start of construction, meet with the Contracting Officer to discuss the QC program required for this contract. The purpose of this meeting is to develop a mutual understanding of the QC details, including forms to be used; administration of on-site and off-site work, and coordination of the Contractor's management, production and the QC Manager's duties with the Contracting Officer. A sample agenda is included as Exhibit 7.1. As a minimum, the Contractor's personnel required to attend shall include the Project Manager, Project Superintendent and QC Manager. Minutes of the meeting shall be prepared by the QC Manager and signed by both the Contractor and the Contracting Officer.

7.2 QC Meetings

After the start of construction, the QC Manager shall conduct QC meetings once every two weeks or as scheduled by the Contracting Officer or delivery order. The meetings will be held at the work site, or where specified, with the project superintendent and the foreman responsible for the upcoming work in attendance. The QC Manager shall take steps as may be necessary to prevent the QC Meeting from becoming a production meeting. Often it is convenient to hold a production meeting following the QC meeting, however the minutes of these meetings shall be maintained separate. The QC Manager shall notify the Contracting Officer at least 48 hours in advance of each meeting. The QC Manager shall prepare the minutes of the meeting and provide a copy to the Contracting Officer within two working days after the meeting. As a minimum, the following shall be accomplished at each meeting:

1. Review the minutes of the previous meeting.

2. Review the schedule and the status of work.

   - Work or testing accomplished since last meeting.
   - Rework items identified since last meeting.
   - Rework items completed since last meeting.

3. Review the status of submittals.

- Submittals reviewed and approved since last meeting.

- Submittals required in the near future.

4. Review the work to be accomplished in the next two weeks and documentation required. Schedule the three phases of control and testing:

   - Establish completion dates for rework items.

   - Identify Preparatory Phases required.

   - Identify Initial Phases required.

   - Identify Follow-up Phases required.

   - Identify Testing required.

   - Identify status of off-site work or testing.

   - Identify documentation required.

5. Resolve QC and production problems.

6. Address items that may require revising the QC plan or changes in procedures.

   In addition to the normal project distribution which includes the Contracting Officer, a copy shall be forwarded to the C.O.T.R., LANTDIV, the Program QC Manager, and the OHM Program Manager.

8.0 THREE PHASES OF CONTROL

The QC Manager shall perform the three phases of control to ensure that work complies with contract requirements. The three phases of control shall adequately cover both on-site and off-site work and shall include the Inspection Plan activities (see Exhibit 8.0) of each definable feature of work as listed in Exhibit 9.1.

8.1 Preparatory Phase

Notify the Contracting Officer at least two working days in advance of each preparatory phase. Conduct the preparatory phase meeting with the superintendent and the foreman responsible for the definable feature of work. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report (Exhibit 8.1). Perform the following prior to beginning work on each definable feature of work:

- Review each paragraph of the applicable specification sections.
- Review the contract drawings.
- Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.
- Review the testing plan and ensure that provisions have been made to provide the required QC testing.
- Examine the work area to ensure that the required preliminary work had been completed.
- Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data.
- Review the safety plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted.
- Discuss construction methods.

8.2 Initial Phase

Notify the Contracting Officer at least two working days in advance of each initial phase meeting. When crews are ready to start work on a definable feature of work, conduct the initial phase meeting with the personnel responsible for that definable feature of work. Observe the initial segment of the definable feature of work to ensure that the work complies with contract requirements. Document the results of the initial phase in the daily Contractor Quality Control Report. Repeat the initial phase for changes in personnel assigned responsibility for the work, or when acceptable levels of specified quality are not being met. Perform the following for each definable feature of work:

- Establish the quality of workmanship required.
- Resolve conflicts.
- Review the Safety Plan and the appropriate activity hazard analysis to ensure that applicable safety requirements are met.
- Ensure that testing is performed.

8.3 Follow-up Phase

Perform the following for ongoing work daily, or more frequently as necessary, until the completion of each definable feature of work and document in the daily Contractor Quality Control Report:

- Ensure the work is in compliance with contract requirements.
- Maintain the quality of workmanship required.
- Ensure that testing is performed.
- Ensure that rework items are being corrected.

8.4 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

8.5 Receipt Inspection

The QC organization shall conduct Receipt Inspection of materials and equipment procured in accordance with the delivery order specification. In addition to the submittal documentation, which will be reviewed and approved as required under Section 3.0, Submittals, the following attributes will be inspected for each order/shipment as applicable:

- Material is same as specified by the Delivery Order Specification
- Quantity as specified by the procurement document
- Dimensions as required by the procurement document
- Shipping Damage
- Physical Damage
- Identification and Marking
- Protective Covers and Seals
- Cleanliness
- Workmanship

Materials and equipment found to be unacceptable at receipt inspection shall be rejected and "RED Tagged" (see Exhibit 8.5) until correction or replacement can be made. This material/equipment shall not be used until the corrective action results in satisfactory reinspection.

The results of the receipt inspection, by attribute, will be included in the Contractor Quality Control Report (Exhibit 8.1) for the date of inspection.

8.6 Documentation

Reports are required for each day that work is performed and for every seven consecutive calendar days of no work and on the last day of no work periods. Account for each calendar day throughout the life of the contract. The reporting of work shall be identified by terminology consistent with the construction schedule. Contractor Quality Control Reports are to be prepared, signed and dated by the QC Manager and shall contain the following information:

- Identify the control phase and the definable feature of work.

- Results of the preparatory phase meetings held, including the location of the definable feature of work and a list of personnel present at the meeting. Indicate in the report that for this definable feature of work, the drawings and specifications have been reviewed, submittals have been approved, materials comply with approved submittals, materials are stored properly, preliminary work was done correctly, the testing

plan has been reviewed, and work methods and schedules have been discussed.

- Results of the initial phase meetings held, including the location of the definable features of work and a list of personnel present at the meeting. Indicate in the report that for this definable feature of work, the preliminary work was done correctly, samples have been prepared and approved, the workmanship is satisfactory, test results are acceptable, work is in compliance with the contract, and the required testing has been performed and include a list of who performed the tests.

- Results of the follow-up phase inspections held, including the location of the definable features of work. Indicate in the report that for this definable feature of work that the work complies with the contract as approved and that required testing has been performed and include a list of who performed the tests.

- Results of the three phases of control for off-site work, if applicable, include actions taken.

- List the rework items identified, but not corrected by close of business.

- As rework items are corrected, provide a revised rework items list along with the corrective action taken.

- Include in the remarks section of the report pertinent information including directions received, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, QC meetings held, acknowledgment that as-built drawings have been updated, corrective direction given by the QC Manager and corrective action taken by the contractor.

- When the QC Manager believes that an attribute list type inspection is more appropriate for the inspection of specific definable features of work, he/she may use any type of form desired for this purpose. However, this or any other form utilized shall become an attachment to the daily Contractor Quality Control Report and shall not preclude any other requirements of the contract or this plan.

9.0 DEFINABLE FEATURES OF WORK

9.1 Definable Features of Work

Exhibit 9.1 contains a list of definable features of work for this delivery order. A definable feature of work is a task that is separate and distinct from other tasks and requires separate control requirements. As a minimum, each division of the specification is considered a definable feature of work. However, at times there may be more than one definable feature of work in each division of the specification or a definable feature of work may include several specification sections. The QC Manager shall discuss the list with the Contracting Officer for possible expansion of the list.

10.0 EXHIBITS

The following forms are acceptable for providing the information required by this QC Plan and the contract, except as otherwise directed by the Contracting Officer. While use of these specific forms are not required by the contract, any other format used shall contain the same information and be approved by the Program QC Manager. Exhibit 10.1 includes additional forms used by the contractor. These forms and their use are not addressed in this QC Plan.

NOTE: Exhibit numbers refer to the paragraph from which the Exhibit was first addressed.

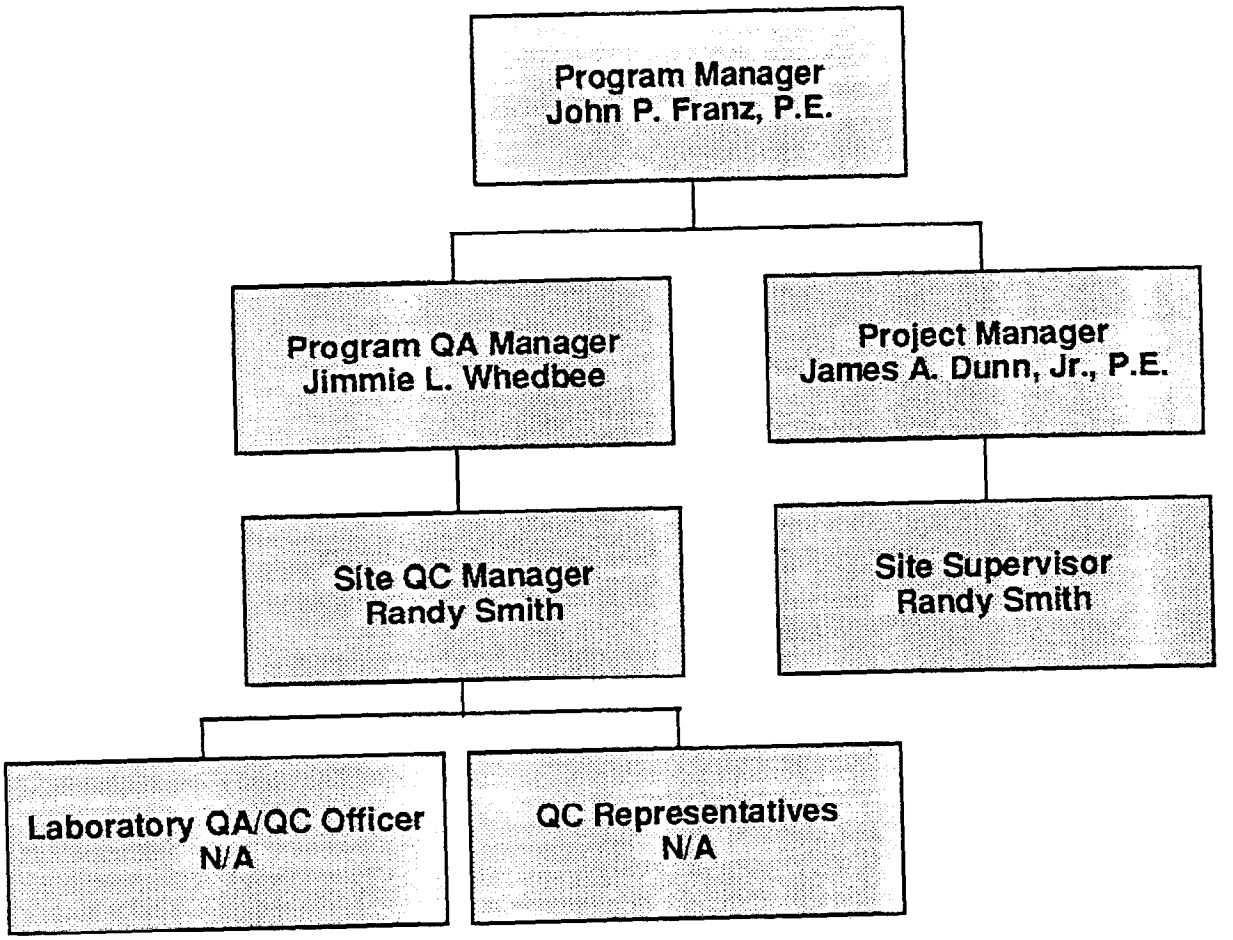
10.1 Index of Exhibits

- Exhibit 2.1 Organizational Chart
- Exhibit 2.2 Project QC Manager's Resume
- Exhibit 2.4 Project QC Manager Appointment Letter
- Exhibit 3.1 Submittal Descriptions (SD)
- Exhibit 3.2 List of Personnel Authorized to Review and Certify Submittals
- Exhibit 3.3 Submittal Register
- Exhibit 5.1 Testing Plan and Log
- Exhibit 6.1 Rework Items List
- Exhibit 7.1 Sample agenda for the Coordination and Mutual Understanding Meeting
- Exhibit 8.0 Inspection Plan
- Exhibit 8.1 Contractor Quality Control Report
- Exhibit 8.5 Reject Tag (RED Tagged)
- Exhibit 9.1 Definable Features of Work
- Exhibit 10.1 Contractor Forms

Exhibit 2.1

OHM Remediation Services Corp.
Delivery Order No. 0115

QC Organizational Chart



OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

OHM Remediation
Services Corp.
A Subsidiary of OHM Corporation

Exhibit 2.4

March 12, 1997

Randy Smith
OHM Remediation Services Corp.
Lot 203 Holcomb Blvd.
Jacksonville, NC 28542

Re: Site QC Manager
Camp Geiger Biocell Construction
Contract N62470-93-D-3032
Delivery Order 0115

Dear Randy:

This letter will serve as the Site Quality Control Manager on the referenced project and will also clarify your duties and authority in this position. In this position, you will be authorized to use available resources to satisfy all applicable requirements of the Program and Delivery Order Quality Control Plans.

This authorization specifically give you the authority to direct removal and replacement or correction of nonconforming materials or work and stop work authority when continuation would be unsafe to personnel, harmful to the environment, or result in a significant degradation of quality.

You will be expected to work closely with the Project Manager, Site Supervisor and other project personnel, but you will not be directly responsible to anyone but myself for resolution of quality issues when working in the capacity of Quality Control Manager.

If you have any questions in this matter, please call me at (617) 589-2306.

Sincerely,

Jimmie L. Whedbee
Program QC Manager
LANTDIV RAC Program

SUBMITTAL DESCRIPTIONS

SD-01, Data

Submittals that provide calculations, descriptions, descriptions, or other documentation regarding the work.

SD-02, Manufacturer's Catalog Data

Data composed of catalog cuts, brochures, circulars, specifications and product data, printed information in sufficient detail and scope to verify compliance with requirements of the contract documents. A type of product data.

SD-03, Manufacturer's Standard Color Charts

Preprinted illustrations displaying choices of color and finish for a material or product. A type of product data.

SD-04, Drawings

Submittals that graphically show relationship of various components of the work, schematic diagrams of systems detail of fabrications, layout of particular elements, connections, and other relational aspects of the work. A type so shop drawing.

SD-05, Design Data

Design calculations, mix design, analyses, or other data written in nature and pertaining to a part of the work. A type of shop drawings.

SD-06, Instructions

Preprinted material describing installation of a product, system, or material, including special notices and Material Safety Data Sheets, if any, concerning impedances, hazards, and safety precautions. A type of product data.

SD-07, Schedules

A tabular list of data or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work. A type of shop drawing

SD-08, Statements

A document, required of the Contractor, or through the Contractor by way of a supplier, installer, manufacturer, or other lower tier contractor, the purpose of which is to further the quality or orderly progression of a portion of the work by documenting procedures, acceptability of method or personnel, qualifications, or other verification of quality. A type of shop drawing.

SD-09, Reports

Reports of inspection and laboratory test, including analysis and interpretation of test results. Each report shall be properly identified. Test method used and compliance with recognized test standards shall be described.

SD-10, Test Reports

A report signed by an authorized official of a testing laboratory that a material, product, or system identical to the material, product or system to be provided has been tested in accordance with requirements specified by naming the test method and material. The test report must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. Testing must have been within three years of the date of Contract award. A type of product data.

SD-11, Factory Test Reports

A written report that includes the findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for this project before it is shipped to the job site. The report must be signed by an authorized official of a testing laboratory and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. A type of shop drawing.

SD-12, Field Test Reports

A written report that includes the findings of a test made at the job site, in the vicinity of the job site, or on a sample taken from the job site, on a portion of the work, during or after installation. The report must be signed by an authorized official of a testing laboratory or agency and must state the test was performed in accordance with the test requirements; state the test results; and indicate whether the material, product, or system has passed or failed the test. A type of shop drawing.

SD-13, Certificates

Statements signed by responsible officials of a manufacturer of a product, system, or material attesting that the product, system, or material meet specified requirements. The statements must be dated after the award of this contract, name the project, and list the specific requirements that it is intended to address. A type of shop drawing.

SD-14, Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work. A type of sample.

SD-15, Color Selection Samples

Samples of the available choice of colors, textures, and finishes of a product or material, presented over substrates identical in texture to that proposed for the work. A type of sample.

SD-16, Sample Panels

An assembly constructed at the product site in a location acceptable to the Contracting Officer and using materials and methods to be employed in the work; completely finished; maintained during construction; and removed at the conclusion of the work or when authorized by the Contracting Officer. A type of sample.

SD-17, Sample Installations

A portion of an assembly or material constructed where directed and, if approved, retained as a part of the work. A type of sample.

SD-18, Records

Documentation to ensure compliance with an administrative requirement or to establish and administrative mechanism. A type of administrative and close-out submittal,

SD-19, Operation and Maintenance Manuals

Data intended to be incorporated in an operations and maintenance manual. A type of administrative and close-out submittal.

Exhibit 3.2

List of Personnel Authorized to Review and Certify Submittals

Specification Section:	Submittal Type:	Authorized Personnel:
01010	Equipment	James A. Dunn, Jr., PM Wayne Smith Randy Smith
01010	All Others	LANTDIV RPM

Table 4.1 – Submittal Register

Spec. No.	SD No. and Type of Submittal Material or Product	Spec. Para. No.	Approval by CO	Gov. or A/E Reviewer	Trans. Control No.	Planned Sub. Date	Action Code	Date of Action	Date Forwarded to Appro. Auth./Date Received from Contr.	Date Forwarded to Other Reviewer	Date Received from Other Reviewer	Action Code	Date of Action	Mailed to Contr./Recd. from Appro. Auth.	Remarks
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
01010	Work Plan	1.2.1.1	G			3/14/97									
01010	As-built Records	1.3.1.1				CR									
01010	Environmental Condition Report	1.3.1.2				WP									
01010	Network Analysis Diagram	1.3.1.3				WP									
01010	Status Reports	1.3.1.3				Monthly									
01010	QC Meeting Minutes	1.3.1.4				As held									
01010	Test Results Summary Report	1.3.1.5				CR									
01010	Contractor Production Report	1.3.1.6				Daily									
01010	QC Report	1.3.1.7				Daily									
01010	Rework Items List	1.3.1.8				CR									
01010	Permits	1.3.1.9				Held 2/24/97									
01010	Contractor's Closeout Report	1.3.1.10													
01010	Pumps					3/21/97									
01010	Electrical					3/21/97									
01010	Tank					3/21/97									
01010	O&M Manual					CR									
01010	Health and Safety Plan	1.2.1.1				WP									
01560	Class I ODS Prohibition	1.4													
01560	Safety Program	1.6													

CR - Closeout Report
WP - Work Plan

Exhibit 5.1

TESTING PLAN AND LOG

CONTRACT NUMBER			PROJECT TITLE AND LOCATION							CONTRACTOR	

SPECIFICATION SECTION AND PARAGRAPH NUMBER	ITEM OF WORK	TEST REQUIRED	ACCREDITED/ APPROVED LAB		SAMPLED BY	TESTED BY	LOCATION OF TEST		DATE COMPLETED	DATE FORWARDED TO CONTR. OFF.	REMARKS
			YES	NO			ON SITE	OFF SITE			

REWORK ITEMS LIST

Exhibit 6.1

Contract No. and Title: ______________________________

Contractor: ______________________________

NUMBER	DATE IDENTIFIED	DESCRIPTION	CONTRACT REQUIREMENT (Spec. Section and Par. No., Drawing No. and Detail No., etc.)	ACTION TAKEN BY QC MANAGER	RESOLUTION	DATE COMPLETED

SAMPLE DOCUMENT

COORDINATION AND MUTUAL UNDERSTANDING MEETING AGENDA

FOR

DELIVERY ORDER No. _____

_____ AT THE

U.S. NAVAL STATION,

_____

____ __, 1996

The purpose of this meeting is to develop a mutual understanding of the QC details, including forms to be used; administration of on-site and off-site work, and coordination of the Contractor's management, production and the QC Manager's duties with the Contracting Officer.

The QC program consists of a QC Organization, QC Manager, a QC Plan for this Delivery Order, this Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review, submittal approval except for submittals designated for Contracting Officer approval, testing, and QC certifications and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with requirements of this contract.

QC Manager duties (contract para. 6.6.1)

- Attend this meeting
- Conduct the QC Meetings
- Perform the three phases of control
- Perform submittal review
- Perform submittal approval
- Ensure testing is performed
- Prepare QC certifications and documentation
- Perform other activities when approved by the Contracting Officer

Submittal Reviewers Duties and Qualifications (contract para. 6.7)

- Provide submittal reviewers qualified in the disciplines being reviewed other than the QC Manager, to review and certify that the submittals meet the requirements of the contract.

QC Plan (contract para. 6.8)

- (as specified therein)

SAMPLE DOCUMENT

Coordination and Mutual Understanding Meeting (contract para. 6.9)

- (see purpose above)

QC meetings (contract para. 6.10)

- The QC Manager shall conduct QC meetings once every two weeks or as otherwise directed by the Contracting Officer.
- Meeting minutes to be prepared by the QC Manager in accordance with the contract outline and a copy provided to the Contracting Officer within two working days of the meeting.
- A copy will be distributed to the Program QC Manager.

Three phases of control (contract para. 6.11)

- Preparatory Phase Meeting
- Initial Phase Meeting
- Follow-Up Phase Inspection

Submittal review and approval (contract para. 6.12 and Part 7.0, "Submittals")

- Review
- Approval
- Certification
- Submittal Register

Testing (contract para. 6.13)

- Testing Laboratory Requirements
- Accredited Laboratories
- Inspection and Testing Laboratories
- Capability Checks
- Test Results

QC certifications (contract para. 6.14)

- Contractor Quality Control Report Certification
- Invoice Certification
- Completion certification

Documentation (contract para. 6.15)

SAMPLE DOCUMENT

- Contractor Production Report
- Contractor Quality Control Report
- Testing Plan and Log
- Rework Items List
- As-Built Records
- Report Forms

1. Contractor Production Report
2. Contractor Quality Control Report
3. Testing Plan and Log
4. Rework Items List

INSPECTION SCHEDULE
(Project Description)
(Project Location)
Delivery Order No._____

Exhibit 8.0

Spec. Section	Activity*	Prepratory Report No.	Initial Report No.	Follow-up Report Nos.**

IP

* Also include scheduled date if a CPM nettwork is invoked. **Include first and final inspections only.

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE

PHASE	(BLANK NOT APPLICABLE)	YES	NO	IDENTIFY SPECIFICATION SECTION, DEFINABLE FEATURE OF WORK, LOCATION AND LIST PERSONNEL PRESENT
PREPARATORY	PLANS AND SPECS HAVE BEEN REVIEWED	☐	☐	
	THE SUBMITTALS HAVE BEEN APPROVED.	☐	☐	
	MATERIALS COMPLY WITH APPROVED SUBMITTALS	☐	☐	
	MATERIALS STORED PROPERLY.	☐	☐	
	PRELIMINARY WORK WAS DONE CORRECTLY.	☐	☐	
	TESTING PLAN HAS BEEN REVIEWED.	☐	☐	
	WORK METHOD AND SCHEDULE DISCUSSED.	☐	☐	
	JOB SAFETY / HAZARD ANALYSIS ADDRESSED	☐	☐	

Exhibit 8.1
Page 1 of 3

INITIAL				
	PRELIMINARY WORK WAS DONE CORRECTLY	☐	☐	TESTING PERFORMED & WHO PERFORMED TEST
	SAMPLE HAS BEEN PREPARED/APPROVED	☐	☐	
	WORKMANSHIP IS SATISFACTORY	☐	☐	
	TEST RESULTS ARE ACCEPTABLE.	☐	☐	
	WORK IS IN COMPLIANCE WITH THE CONTRACT.	☐	☐	
	WORK COMPIES WITH SAFETY REQUIREMENTS	☐	☐	
FOLLOW-UP	WORK COMPLIES WITH CONTRACT AS APPROVED INITIAL PHASE	☐	☐	TESTING PERFORMED & WHO PERFORMED TEST
	WORK COMPIES WITH SAFETY REQUIREMENTS	☐	☐	

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)	REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

REMARKS

On behalf of the contractor, I certify that this report is completed and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

AUTHORIZED QC MANAGER AT SITE DATE

GOVERNMENT QUALITY ASSURANCE REPORT

DATE

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

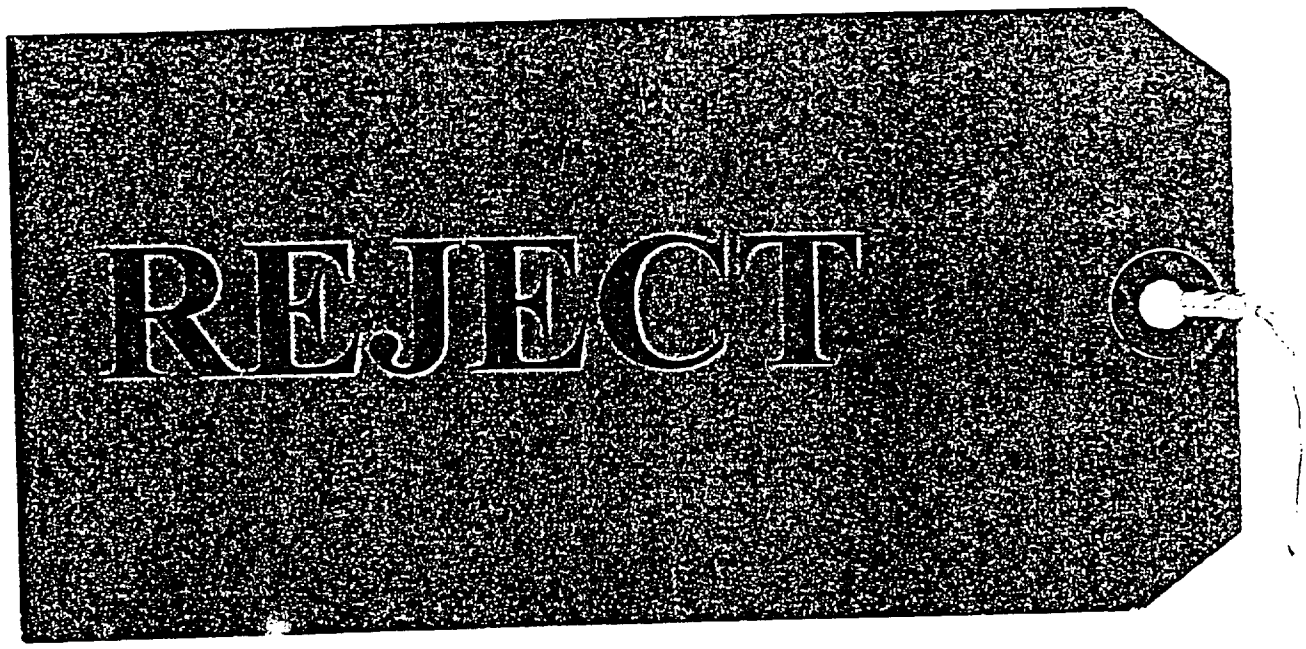
GOVERNMENT QUALITY ASSURANCE MANAGER DATE

CONTRACTOR QUALITY CONTROL REPORT CONTINUATION SHEET (ATTACH ADDITIONAL SHEETS IF NECESSARY)				DATE
PHASE	(BLANK NOT APPLICABLE)	YES	NO	IDENTIFY SPECIFICATION SECTION, DEFINABLE FEATURE OF WORK, LOCATION AND LIST PERSONNEL PRESENT
PREPARATORY	PLANS AND SPECS HAVE BEEN REVIEWED	☐	☐	
	THE SUBMITTALS HAVE BEEN APPROVED.	☐	☐	
	MATERIALS COMPLY WITH APPROVED SUBMITTALS	☐	☐	
	MATERIALS STORED PROPERLY.	☐	☐	
	PRELIMINARY WORK WAS DONE CORRECTLY.	☐	☐	
	TESTING PLAN HAS BEEN REVIEWED.	☐	☐	
	WORK METHOD AND SCHEDULE DISCUSSED.	☐	☐	
	JOB SAFETY / HAZARD ANALYSIS ADDRESSED	☐	☐	

Exhibit 8.1
Page 2 of 3

INITIAL				TESTING PERFORMED & WHO PERFORMED TEST
	PRELIMINARY WORK WAS DONE CORRECTLY	☐	☐	
	SAMPLE HAS BEEN PREPARED/APPROVED	☐	☐	
	WORKMANSHIP IS SATISFACTORY	☐	☐	
	TEST RESULTS ARE ACCEPTABLE.	☐	☐	
	WORK IS IN COMPLIANCE WITH THE CONTRACT.	☐	☐	
	WORK COMPLIES WITH SAFETY REQUIREMENTS	☐	☐	

CONTRACTOR QUALITY CONTROL REPORT CONTINUATION SHEET (ATTACH ADDITIONAL SHEETS IF NECESSARY)				DATE
PHASE	(BLANK NOT APPLICABLE)	YES	NO	IDENTIFY SPECIFICATION SECTION, DEFINABLE FEATURE OF WORK, LOCATION AND LIST PERSONNEL PRESENT
FOLLOW-UP	WORK COMPLIES WITH CONTRACT AS APPROVED INITIAL PHASE	☐	☐	
	WORK COMPLIES WITH SAFETY REQUIREMENTS	☐	☐	


REJECT

Specification Section:	Definable of Feature of Work:
01010	Work Plan Submission Subgrade Preparation Liner Installation Cell Completion Contractor's Closeout Report Submission

CONTRACTOR PRODUCTION REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

		DATE
CONTRACT NO.	TITLE AND LOCATION	REPORT NO.
NTRACTOR		SUPERINTENDENT
AM WEATHER	PM WEATHER	MAX TEMP °F MIN TEMP °F

WORK PERFORMED TODAY

WORK LOCATION AND DESCRIPTION	EMPLOYER	NUMBER	TRACE	HRS

Exhibit 10.1a

JOB SAFETY	WAS A JOB SAFETY MEETING HELD THIS DATE? ☐ YES ☐ NO (If YES, attach copy of the meeting minutes) WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? ☐ YES ☐ NO (If YES, attach copy of completed OSHA report)	TOTAL WORK HOURS ON JOB SITE THIS DATE
	WAS TRENCHING/SCAFFOLD/HV ELECTRICAL/HIGH WORK DONE? ☐ YES ☐ NO (If YES, attachment statement or checklist showing inspection performed)	CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT
	WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? ☐ YES ☐ NO (If YES, attach description of incident and proposed action)	TOTAL WORK HOURS FROM START OF CONSTRUCTION

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED

☐ SAFETY REQUIREMENTS HAVE BEEN MET

EQUIPMENT MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB

CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY INCLUDE NUMBER OF HOURS USED TODAY

REMARKS

CONTRACTOR/SUPERINTENDENT _____ DATE _____

OHM Remediation
Services Corp.

Routing: Contr. Adm. ____
Proj. Mgr ____
Site Supv. ____
Proj. Acct.
CSE
QC
Job File

Project Name: _____
Delivery Order: _____
Contract Purchase Order N62470-93-D-3032
OHM Project Order _____

OVERTIME AUTHORIZATION (OTA)

Date of Request: _____ WBS Code: _____ OTA No: _____

Reason for request
- [ ] Emergency
- [ ] Equipment Maintenance
- [ ] Keep critical activities on schedule
- [ ] Accelerate schedule
- [ ] Other

Explanation: _____

Exhibit 10.1b

Initiated by:
- [ ] Navy
- [ ] OHM
- [ ] Other

Estimated period of overtime work _____ Start Date: _____ End Date: _____

ROM Cost Estimate _____

Requested By: _____ Date: _____
OHM Project Manager

APPROVALS

[ ] Approved [ ] Modified [ ] Rejected

Modification (if any)

_____

_____

_____

RPM: _____ Date: _____

ROICC/NTR: _____ Date: _____

Exhibit 10.1d

OHM Remediation Services Corp.

Routing: Contr. Adm.
Site Supv.
Proj. Acct.
CSE
QC
Job File

Project Name: _____ _____
Delivery Order: _____ _____
Contract Purchase Order N62470-93-D-3032 _____
OHM Project Order _____

VARIANCE REQUEST (VR)

Date of Request: _____ Suspense Date: _____ VR No: _____

PROPOSED VARIANCE Dwg Ref.: _____ Spec Sec: _____
Site Location _____

DESCRIPTION:

Note: Approval of this variance will not result in an increase in cost or in time of performance to this contract.

Initiated By [ ] Navy
[ ] OHM
[ ] Regulatory Agency
[ ] Other

On-Site Engineer: _____ Date: _____
OHM Project Engineer _____ Date: _____
Site Quality Control Manager: _____ Date: _____
OHM Project Manager: _____ Date: _____

APPROVALS [ ] Approved [ ] Modified (see below) [ ] Rejected

Note: This is a clarification and does not create additional work that could be considered as a change to the cost of the project.

RPM: _____ Date: _____
ROICC/NTR: _____ Date: _____

OHM Remediation
Services Corp.

Routing: Contr. Adm.
Site Supv.
Proj. Acct.
CSE
QC
Job File

Project Name: _____
Delivery Order: _____
Contract Purchase Order N62470-93-D-3032
OHM Project Order _____

REQUEST FOR INFORMATION (RFI)

Date of Request: _____ Suspense Date: _____ VR No: _____

SITUATION/CONDITION REQUIRING CLARIFICATION
Dwg Ref: _____ Spec Sec: _____
Site Location _____

DESCRIPTION:

Exhibit 10.1c

DATE RECEIVED BY:
Certifying Engineer: _____ Tech. Rep: _____ ROICC: _____
RESPONSE:

Note: This is a clarification and does not create additional work that could be considered as a change to the contract drawings and /or specification.

RPM: _____ Date: _____

ROICC/NTR: _____ Date: _____