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FINAL QUALITY CONTROL PLAN SITE 8 NCBC GULFPORT MS
10/1/2004
ENVIRONMENTAL CHEMICAL CORPORATION



FINAL QUALITY CONTROL PLAN

Site 8 – Herbicide Orange Storage Area and Off-Base Area of Contamination

**Naval Construction Battalion Center
Gulfport, Mississippi**

October 2004

Prepared for:

Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, SC 29406

Prepared under:

Contract Number N62467-02-D-0468
Contract Task Order 002

**FINAL
QUALITY CONTROL PLAN**

FOR

**SITE 8 – HERBICIDE ORANGE STORAGE AREA
AND
OFF-BASE AREA OF CONTAMINATION**

**Naval Construction Battalion Center
Gulfport, Mississippi**

Submitted to:

**Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, SC 29406**

Submitted by:

**Environmental Chemical Corporation
1240 Bayshore Highway
Burlingame, CA 94010**

**Contract Number N62467-02-D-0468
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LIST OF ACRONYMS AND ABBREVIATIONS

AOC	(Off-base) Area of Contamination
bgs	below ground surface
BMP	Best Management Practices
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CQA	Certified Quality Auditor
DFW	definable feature of work
DQCR	Daily Quality Control Report
ECC	Environmental Chemical Corporation
EPA	United States Environmental Protection Agency
EPD	Environmental Protection Division
ESCP	Erosion and Sediment Control Plan
FFS	Focused Feasibility Study
HO	Herbicide Orange
HRSA	Hazardous Site Response Act
LLDPE	linear low density polyethylene
LTM	long-term monitoring
LUCs	land-use controls
MCRD	Marine Corps Recruit Depot Parris Island
MDEQ	Mississippi Department of Environmental Quality
MSWCC	Mississippi Soil and Water Conservation Commission
µg/kg	microgram per kilogram
NAVFAC	Naval Facilities Engineering Command
Navy	United States Navy Southern Division
NCBC	Naval Construction Battalion Center
NCR	Nonconformance Report
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PDMCESS	Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater
Permit	NPDES Permit for Storm Water Discharges from Construction Activities
PM	Project Manager
PRM	Program Manager
QA	quality assurance
QC	quality control
QCM	Quality Control Manager
QCP	Quality Control Plan
QIP	Quality Improvement Process
RCRA	Resource Conservation and Recovery Act
ROICC	Resident Officer in Charge of Construction
SHSP	Site Health and Safety Plan
SOP	Standard Operating Procedure
SOUTHDIV	Southern Division

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

SOW	Scope of Work
SS	Site Supervisor
SSHO	Site Safety and Health Officer
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
TtNUS	Tetra Tech NUS, Incorporated
USAF	United States Air Force
USDA	United States Department of Agriculture
WP	Work Plan

1.0 INTRODUCTION

Environmental Chemical Corporation (ECC) prepared this Quality Control Plan (QCP) in accordance with project requirements for the soil and sediment remediation at the Site 8 Herbicide Storage Area (Site 8) and the Off-base Area of Contamination (AOC) at the Naval Construction Battalion Center (NCBC) in Gulfport, Mississippi. ECC will perform these activities under Contract No. N62467-02-D-0468, with the Southern Division (SOUTHDIR), Naval Facilities Engineering Command (NAVFAC).

This QCP was developed to ensure that operational activities performed during this contract are performed in accordance with the statement of work (SOW), the 100% Remedial Design, and Site Work Plan (WP). This plan addresses the quality control (QC) practices and procedures to be utilized by ECC during the course of the project. The remediation activities addressed by this project include:

- Excavate dioxin-contaminated soil and sediment from on-base drainage channels contiguous to Site 8 and from the off-base AOC located north of the base;
- Transport dioxin-contaminated soil and sediment to the processing area at Site 8;
- Transport ash located at Site 8 to the processing area;
- Consolidate, blend, and stabilize contaminated soil, sediment, and ash within a designated portion of Site 8;
- Perform confirmation geotechnical testing of the stabilized material;
- Perform confirmation analytical sampling of the stabilized material;
- Construct a 12-inch thick, roller-compacted concrete cap over the stabilized material;
- Perform verification sampling in the excavated areas;
- Restore the on-base drainage channels and off-base AOC affected by excavation activities;
- Restore designated wetland areas;
- Implement land-use controls; and
- Perform long-term monitoring.

1.1 Objective

This QCP establishes procedures that will ensure all work performed meets the project specifications and conforms to the requirements of the contract and applicable regulations. Specifically, this QCP:

- Identifies project QC organization, defines authorities, responsibilities, and qualifications;
- Defines project communication, documentation, and record keeping procedures; and
- Establishes QC procedures for the definable features of work, to ensure that all work meets applicable specifications, including supervision, inspections, and tests.

1.2 Quality Control Plan Organization

This plan is organized into the following sections:

1. Introduction
2. Appointment Letter
3. QC Organizational Chart
4. Names and Qualifications of QC Personnel
5. Duties, Responsibilities, and Authorities of QC Personnel
6. Outside Organizations
7. Submittals
8. Inspection System
9. Testing
10. Rework Procedures
11. Documentation
12. Certifications
13. Project Schedule

2.0 APPOINTMENT LETTER

The appointment letter for the QC Manager (QCM) is included in Appendix A.

3.0 QUALITY CONTROL ORGANIZATIONAL CHART

The ECC project organization established for the site activities is shown on Figure 3-1. Key project personnel include the Project Manager (PM), Site Superintendent (SS), Quality Control Manager (QCM), and Project Engineer.

The QCM will supervise the quality control program on this project and use subcontractors and additional ECC team personnel as needed. Subcontractors, such as the geomembrane installer, will perform QC tests on their work with additional ECC team personnel on site to witness and document tests.

As a regulatory-required measure of construction quality assurance, construction quality control will be overseen by the Project Engineer, Mr. Ganesh Subramaniam. Mr. Subramaniam is a licensed Professional Engineer. The Project Engineer will make periodic visits to the site to observe construction activities, review all submittals, and supervise additional field quality assurance (QA) personnel. Additional field QA personnel will observe _____ and _____ document QC activities on the installation of the rolled-concrete cap, as directed by the United States Environmental Protection Agency (EPA) guidance.

The Project Engineer will be responsible for certifying to SOUTHDIV and regulatory agencies that the site has been constructed in accordance with the drawings and specifications. The certification statement will be accompanied by a final Certification Report that contains the appropriate documentation, including daily observation reports, sampling locations, test results, drawings of record or sketches, photographs, and other relevant data.

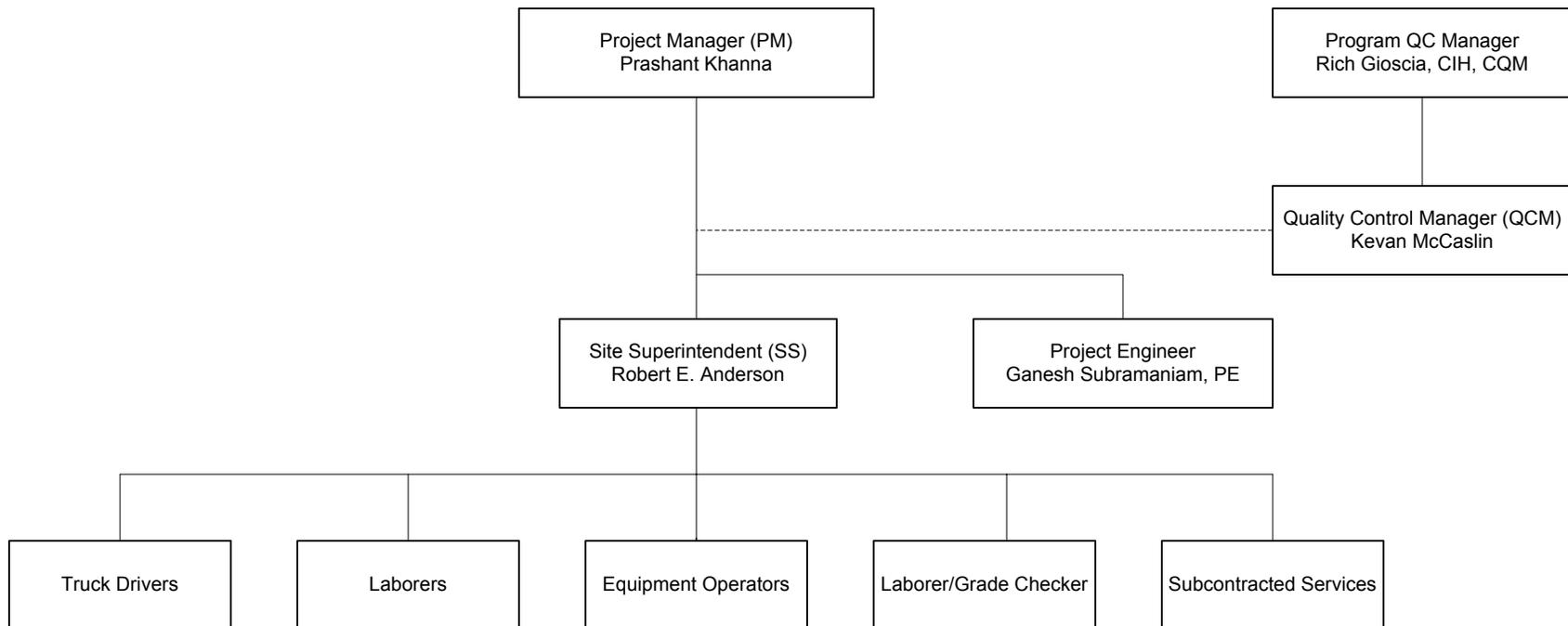


Figure 3-1
ECC and Subcontractor Project Organization Chart

4.0 NAMES AND QUALIFICATIONS OF QUALITY CONTROL PERSONNEL

This section identifies ECC project personnel, subcontractor, and off-site partners.

4.1 Names of Quality Control Personnel

4.1.1 Program Manager

Mr. Raghu Arora will be the Program Manager (PRM) for this project. Program Manager duties and responsibilities include the following:

- Overall contract conformance to Navy and NCBC requirements and specifications, including technical, cost, and schedule;
- Overall responsibility for the success and proper execution of the project;
- Review of all required submittals;
- Designation of the Project Manager (PM) and Quality Control Manager (QCM), Site Health and Safety Specialist (SHSS); and
- Allocation of sufficient resources to ensure successful completion of the project.

4.1.2 Project Manager

The responsibilities of the PM, Mr. Prashant Khanna, are as follows:

- Overall management of project technical, quality, cost, and schedule performance;
- Supervision of the SS and coordination with the QCM;
- Review of all work in progress and submittals;
- Resolution of project quality issues;
- Development of project plans, reports and associated documentation; and
- Scheduling of activities and adhering to or adjusting the project schedule.

4.1.3 Quality Control Manager

The QCM, Mr. Kevan McCaslin, reports to Mr. Rich Gioscia, the Program QC Manager and ECC's Corporate QC Manager. Mr. Gioscia is a Certified Quality Manager (CQM). The QCM's responsibilities include:

- Ensuring that all materials, workmanship, inspection, sampling, and testing are in compliance with contract documents, including drawings and specifications;
- Ensuring compliance with the Work Plan (WP), QCP, and Site Health and Safety Plan (SHSP);
- QC of project plans and project data;
- Ensuring that deviations from Standard Operating Procedures (SOPs) or the scope, if necessary, are properly approved and documented;
- Ensuring subcontractors perform their assigned and contracted tasks in a quality manner;
- Providing QC oversight to subcontractor data collection and reporting efforts; and
- Project documentation including Daily Quality Control Reports (DQCRs), inspection reports, photographs, etc.

4.1.4 Site Superintendent

The Site Superintendent, Mr. Robert E. Anderson, reports directly to the PM. The primary responsibilities of the SS are:

- Coordination with the QCM and the SHSS to ensure quality and safety of all field activities;
- Supervision and coordination of all project field activities;
- Oversee spill prevention and any necessary cleanup action;
- Communication with the Resident Officer in Charge of Construction (ROICC) and authorized site visitors; and
- Preparation of Daily Reports and other documentation associated with field activities.

4.1.5 Project Engineer

Mr. Ganesh Subramaniam will be the Project Engineer during the remedial activities. The Project Engineer will make periodic visits to the site to observe construction activities, review all submittals, and supervise additional field QA personnel.

4.1.6 Subcontractors

Chemical analyses of the stabilized material will be performed by Columbia Analytical Services, Inc (CAS). The address for CAS is:

10655 Richmond Ave., Suite 130A
Houston, Texas 77042
Phone: 713-266-1599
Fax: 713-266-0130

Geotechnical testing of soil materials and the concrete cap will be performed by a certified testing laboratory to be determined later.

4.2 Qualifications of Quality Control Personnel

Project staff members will be qualified to perform their assigned duties. This will be accomplished by:

- Establishing and enforcing the minimum qualification requirements for key positions;
- Verifying initial and continued proficiency; and
- Implementing a formal training program.

4.2.1 Personnel Training

Minimum qualification requirements for key positions on this project have been established by reviewing contractual and other project-related requirements. The qualifications of the proposed personnel have been verified with respect to these requirements. Project personnel will not be assigned to a position or job for which they do not meet the minimum qualifications. In the event that additional assignments are made, the qualifications of the assigned personnel will be evaluated and documented as prescribed herein.

Senior technical staff members will provide on-the-job training for newly assigned technical personnel. The training will address topics related to their job requirements and techniques, and will emphasize problem prevention. The senior staff members will monitor the work performed by newly assigned personnel. The frequency of the monitoring will depend on the demonstrated proficiency of an individual to perform his or her assigned duties.

Minimum training for the PM is an undergraduate degree in engineering or physical sciences, or graduation from a construction management program. The PM will possess a minimum of 6 years of construction management experience, of which 3 years is associated with remedial action projects.

Minimum training for the QCM includes:

- A minimum of four years environmental engineering experience, or six years construction experience in related work;
- Two years experience in QC for environmental restoration projects;
- Working knowledge of applicable federal, state, and local laws, regulations, and guidance;
- Training in environmental field sampling; and
- Completion of the USACE Quality Control Management Course.

4.2.2 Safety and Health Training

Job safety training and worker health monitoring requirements have been established in accordance with the ECC policies and procedures, as specified in the Site Health and Safety Plan. At a minimum, all site workers and QC staff members who may encounter hazardous materials must complete the Occupational Safety and Health Administration (OSHA) Hazardous Material Site Worker Training (40-hr initial training and 8-hr annual refresher) prior to mobilizing to the field. The SS and QCM must have also completed the OSHA Hazardous Material Site Worker Training and 8-Hour Supervisor Training.

5.0 DUTIES, RESPONSIBILITIES AND AUTHORITIES OF QUALITY CONTROL PERSONNEL

This section describes the responsibilities of ECC project personnel and subcontractors.

5.1 Duties of Project Manager

The QC responsibilities of the PM, Prashant Khanna, are as follows:

- Overall management of project technical, quality, cost, and schedule performance;
- Supervision of the SS and coordination with the QCM;
- Review of all work in progress and submittals;
- Resolution of project quality issues;
- Development of project plans, reports and associated documentation; and
- Scheduling of activities and adhering to or adjusting the project schedule.

5.2 Duties of Quality Control Manager

The QCM, Kevan McCaslin, reports to the Program QC Manager, Mr. Rich Gioscia, CQM, ECC's Corporate QC Manager. The QCM's responsibilities include:

- Ensuring that all materials, workmanship, inspection, sampling, and testing are in compliance with contract documents, including drawings and specifications;
- Ensuring compliance with the WP, QCP, and SHSP;
- QC of project plans;
- QC of project data;
- Ensuring that deviations from SOPs or the SOW, if necessary, are properly approved and documented;
- Ensuring subcontractors perform their assigned and contracted tasks in a quality manner;
- Providing QC oversight to subcontractor data collection and reporting efforts; and
- Project documentation including DQCRs, inspection reports, photographs, etc.

5.3 Duties of Site Superintendent

The Site Superintendent, Robert E. Anderson, reports directly to the PM. The primary responsibilities of the Site Superintendent are:

- Coordination with the QCM and the SSHO to ensure quality and safety of all field activities;
- Supervision and coordination of all project field activities;
- Communication with the ROICC and authorized site visitors; and
- Preparation of Daily Reports and other documentation associated with field activities.

5.4 Duties of Project Engineer

Construction QC will receive oversight from the Project Engineer, Mr. Ganesh Subramaniam. The Project Engineer will make periodic visits to the site to observe construction activities, review all submittals, and supervise additional field QA personnel. Additional Field QA personnel will observe and document QC activities on the installation of the rolled-concrete cap, as directed by the EPA guidance document “Construction Quality Control and Quality Assurance for Waste Containment Facilities”.

The Project Engineer will be responsible for certifying that the site has been constructed in accordance with the contract drawings and specifications and overall project objectives. The certification statement will be accompanied by a final Certification Report that contains the appropriate documentation, including daily observation reports, sampling locations, test results, drawings of record or sketches, and other relevant data.

5.5 Duties of Subcontractors

Subcontractors will be selected by ECC to perform specified tasks under this project, including topographic surveying, geotechnical testing, chemical analyses, and concrete cap installation. All subcontractors will report to the PM or his designee, and furnish all personnel, equipment, and materials required for their delegated tasks.

Although ECC expects subcontractors to ensure the quality of their own work, the site supervision, inspection, and approval of all subcontracted work will be the responsibility of ECC. All subcontractors will agree to adhere to the procedures identified in the project plans and to follow all QC (and safety) protocols designated in the project plans.

6.0 OUTSIDE ORGANIZATIONS

Outside organizations will be utilized to perform selected actions of quality control. Since this project is of a design/build nature, the design engineering firm, Tetra Tech NUS, Incorporated (TtNUS), is an integral part of the project team.

6.1 Testing and Monitoring Laboratories

Field and laboratory testing of soil materials and the concrete cap will be required during this project.

Geotechnical testing of soil materials and the concrete cap will be performed by a certified testing laboratory to be determined later.

Chemical analyses of the stabilized material will be performed by Columbia Analytical Services, Inc (CAS). The address for CAS is:

10655 Richmond Ave., Suite 130A
Houston, Texas 77042
Phone: 713-266-1599
Fax: 713-266-0130

6.2 Architectural and Consulting Engineering Firms

Design and construction oversight will be accomplished through a team effort between ECC and TtNUS. TtNUS will provide support for report preparation, peer review, regulatory compliance, engineering design, construction quality assurance and quality control, and permitting plans.

7.0 SUBMITTALS

The PM will be responsible for overall management and control of on-site project submittals. The QCM will ensure that these submittals, as well as the materials and work they represent, conform to applicable contract specifications. The QCM will ensure that a project file is established and maintained, and that all project documents are retained and controlled. Project submittal procedures will be implemented as described in the following subsections.

7.1 Submittal Review Procedures

Prior to submittal to SOUTHDIV, project submittals will be reviewed and approved first by the QCM and then by the Project Engineer. All submittals prepared by ECC or their subcontractors will be reviewed for completeness and compliance with the specifications of the contract. Non-conforming submittals will be returned to the originator for corrective action and re-submittal to the QCM and then to the Project Engineer.

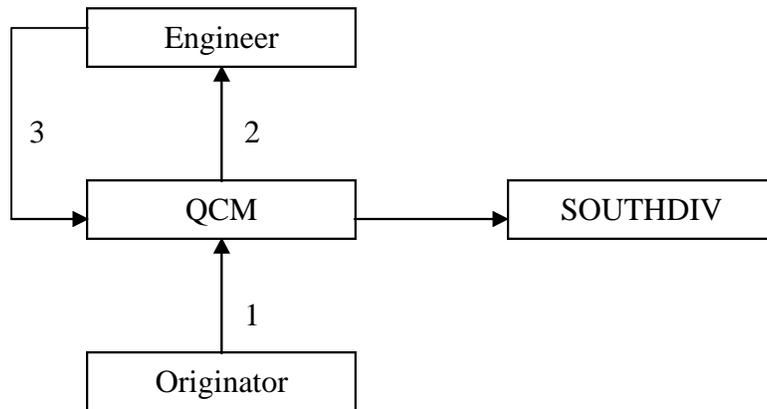
7.2 Submittal Flow Chart

A flow chart for project submittals is presented in Figure 7-1. The PM will be responsible for overall management and control of on-site project submittals. Originators, including the SS and potential subcontractors and vendors, will provide submittals to the QCM. The QCM will ensure that these submittals, as well as the materials and work they represent, conform to applicable contract specifications. After approving the submittal, the QCM will send the submittal to the Project Engineer. When approved, the Project Engineer will return the submittal to the QCM for submittal to the ROICC.

Submittals to SOUTHDIV will be accompanied with a highlighted copy of the submittal register form. This form is intended to be used for submitting both “Navy approval” and “information only” submittals. Care will be exercised to ensure the proper listing of the contract specification paragraph pertinent to the data submitted for each item.

The QCM will ensure that a project file is established and maintained, and that all project documents are retained and controlled.

The QCM will monitor a project submittal schedule that reflects the status of project submittals. Submittal activities will be incorporated into the remedial action schedule so that the submittal progress can be tracked in conjunction with the overall progress.



**Figure 7-1
Submittal Flow Chart**

7.3 Authorized Reviewers

The QCM, the PM, and the Project Engineer are authorized reviewers of submittals.

7.4 Submittal Register

Submittals will be listed and tracked using the Submittal Register. Submittals include deliverables, whether generated on-site or off-site by ECC personnel and their subcontractors. The Submittal Register will be updated monthly during the course of the project. The QCM will review the list and ensure its completeness and may expand general category listings to show individual entries for each item. The Submittal Register will be used as the scheduling document and to control submittals throughout the project.

A submittal register which includes submittals during the design phase is included in Appendix B.

7.5 Submittal Transmittal Form

Submittals to SOUTHDIV will be accompanied with a highlighted copy of the Submittal Register and a Submittal Transmittal Form 4025. A copy of the Submittal Transmittal Form 4025 is included in Appendix B.

8.0 INSPECTION SYSTEM

This section identifies the definable features of work (DFWs) for the project and describes the three phases of control for product quality.

8.1 Definable Features of Work

The field work for the soil and sediment remediation at Site 8 and the off-base AOC involves the following DFWs:

- Perform bench scale treatability study;
- Mobilize and site setup;
- Establish temporary soil erosion and sediment control;
- Perform site clearing;
- Perform monitoring well abandonment;
- Perform contaminated sediment excavation;
- Perform solidification / stabilization of contaminated sediments;
- Construct final cap system;
- Restore site; and
- Demobilize.

8.2 Three Phases of Control Procedures

The QCM will ensure that the three-phase control process is implemented for each definable feature of work. Each control phase is important for obtaining a quality product. However, the preparatory and initial inspections will be particularly invaluable in preventing problems. Production work will not be performed on a DFW until a successful preparatory and initial phase inspection has been completed.

8.2.1 Preparatory Phase Inspection

A Preparatory Phase Inspection will be performed prior to beginning each DFW. The purpose of this inspection will be to review applicable specifications and verify the necessary resources, conditions, and controls are in place and compliant before the start of work activities.

The QCM will verify with the Navy that all pre-construction submittals have been received and approved, and that lessons learned during previous projects have been incorporated, as appropriate, into the project procedures to prevent recurrence. The QCM will meet with the PM, and the staff responsible for a DFW. The QCM will use the Preparatory Phase Inspection Checklist provided in Appendix B, or equivalent, to document the inspection. The checklist will be relevant to the associated DFW and site specific conditions.

Work plans and operating procedures will be reviewed by the QCM to ensure they describe pre-qualifying requirements or conditions, equipment and materials, appropriate sequence, methodology, and QC requirements. The QCM will verify the following:

- All plans have been prepared, reviewed, and approved, and available to field personnel;
- All associated materials have been submitted and approved, have been properly stored, and are available on site;
- Appropriate field equipment is available, functional, and properly calibrated;
- Responsibilities have been assigned and communicated;
- The job hazards in the SHSP has been communicated and the necessary safety measures are in place and ready for use;
- Field personnel have the necessary knowledge, expertise, and information to perform their duties; and
- Arrangements for support services have been made and the prerequisite site work has been completed.

Discrepancies between existing conditions and approved plans and/or procedures will be resolved and corrective actions taken for unsatisfactory and nonconforming conditions identified during a Preparatory Phase Inspection. This will be verified by the QCM, prior to granting approval for work to begin. Preparatory Phase Inspection results will be documented on the Preparatory Inspection Checklist and summarized in a Daily QC Report (DQCR). A copy of a DQCR form is included in Appendix B.

8.2.2 Initial Phase Inspection

An Initial Phase Inspection will be performed the first time a DFW is performed. The purpose of the inspection is to:

- Check the preliminary work for compliance with procedures and contract specifications, as identified in the Preparatory Phase;
- Verify inspection and testing;
- Establish the acceptable level of workmanship;
- Ensure safety compliance; and
- Check for omissions, deficiencies; and resolve differences of interpretation.

The QCM ensures that discrepancies between site practices and the drawings and specifications are identified and resolved before granting approval to proceed. The Initial Phase Inspection results will be documented on the Initial Inspection Checklist and summarized in the DQCR.

8.2.3 Follow-up Phase Inspections

Follow-up Phase Inspections will be performed routinely during each DFW. The purpose of these inspections is to ensure continued compliance and quality workmanship and materials. The QCM will monitor the practices and operations and verify continued compliance with the contract specifications and approved project plans. A Stop Work Order will be issued by the QCM if a work stoppage is required to correct a deficient procedure or practice.

The QCM will also verify that a daily safety and health inspection is performed and documented as prescribed in the SHSP. The QCM will oversee and observe the same activities as under the initial inspection. Discrepancies between site practices and the approved plans and/or procedures will be resolved and corrective actions for unsatisfactory and nonconforming conditions or practices verified by the QCM prior to granting approval to continue work. Follow-up Phase Inspection results will be documented in the QC logbook and summarized in the DQCR. A Follow-up Inspection will be conducted whenever materials arrive on site.

At the discretion of the ROICC or QCM, additional inspections may be required on the same DFW, with the approval of the Navy. Such instances may be:

- Unsatisfactory work, as determined by ECC or the Navy;
- Change in key personnel, or resumption of work after a substantial (2 weeks or more) period of inactivity ; and
- Changes to the project SOW and/or specifications.

8.2.4 Completion Inspections

Completion Inspections will be performed at the conclusion of a work feature or group of features to verify that project requirements are satisfied. A “punch list” of deficient items will be prepared with due dates and space to document corrections made by the field team. All major deficiencies will be recorded on a Nonconformance Report (NCR). The Corrective Action Request will be used to list all major deficiencies that need to be corrected before the Pre-Final Inspection.

8.3 Inspection Schedule

In addition to the three phase inspections which will be performed for each DFW described above, additional inspections will be performed for certain activities during the construction. The QC inspection program is based on the USEPA guidance document “Construction Quality Control and Quality Assurance for Waste Containment Facilities”. Table 8-1, Inspection Plan, provides a summary of the inspection requirements for this project and includes the types of activities requiring QC inspection, the person responsible for each inspection, the inspection type, and the inspection frequencies.

**Table 8-1
 Inspection Plan**

Activity	Responsible Person	Inspection	Frequency
General Inspections			
Equipment Delivery	Site Superintendent	Equipment Inspection	Prior to acceptance on-site
Equipment Decontamination	Site Superintendent	Equipment Inspection	Before moving to next area or leaving site
Daily Equipment Inspection	Equipment Operator	Equipment Inspection	Before using the equipment for the day
Stormwater and Erosion Control Inspection	QCM	Entire Site Inspection	Weekly and within 24 hours of major storm event
Rolled-Concrete Cap Installation			
Cement and Additives Delivery	QCM	Cement Delivery Inspection	Once per delivery
Concrete Mix	QCM		Once per day
Concrete Placement	QCM	Stabilized Material Stockpile Surface Inspection	Once per shift and immediately after major storm event
	QCM	Concrete Pour Inspection	Once per lift
Rolled-Concrete Cap Inspection			
Concrete Surface	QCM	Surface Appearance and Integrity Inspections	Once per day for one week after final pour

9.0 TESTING

QC tests will be performed to ensure that the work is conducted in accordance to the project work plan. The QC testing program is based on the USEPA guidance document “Construction Quality Control and Quality Assurance for Waste Containment Facilities”.

9.1 Testing Procedures

Testing to be conducted during this project includes field and laboratory geotechnical testing and laboratory analyses.

Field geotechnical testing will be performed by qualified personnel from the geotechnical testing subcontractor. A nuclear density gauge will be utilized for on-site density testing of compacted material. An oven and scale will be set up at the office trailer for the purpose of nuclear gauge moisture content calibration.

Calibration records for the nuclear density gauges, and any other field test equipment will be maintained on site. Applicable ASTM standards will be followed. Certified test reports will be created for all tests.

Laboratory geotechnical testing will be conducted by sending samples from borrow sources and on-site grab samples to the geotechnical laboratory for analyses.

9.2 Testing Plan and Log

Tests required for each activity are listed in Table 9-1. The QCM is responsible for QC of all tests. Other parties will assist in test performance as noted in the table.

**Table 9-1
 Testing Plan and Log**

Activity	Test Method	Number or Frequency of Tests
Material Blend Testing		
Sieve Analysis	ASTM C136, ASTM D1140	7 locations
Liquid Limits	ASTM D4318	7 locations
Plasticity Index	ASTM D4318	7 locations
Moisture Density	ASTM D1557, ASTM D558	7 locations
Unconfined Compressive Strength (50 psi)	ASTM D1633	7 locations
Unconfined Compressive Strength (500 psi)	ASTM D1633	7 locations
Field Dry Density	ASTM D2922	79 locations
Field Moisture Content	ASTM D3017	79 locations
Field Dry Density	ASTM D1556	5 locations
Field Moisture Content	ASTM D2216	5 locations
California Bearing Test	ASTM D2216	10 locations
Rolled-Concrete Cap Testing (Test Section)		
Field Wet Density	ASTM C1040	32
Moisture-Density Curve		10
Compressive Strength	ASTM C39	12
Flexural Strength	ASTM C78	12
Rolled-Concrete Cap Testing (Full-Scale Operations)		
Sieve Analysis	ASTM C136, ASTM C117	72
Aggregate Quality		4
Moisture Content for Aggregates	ASTM C566	4
Moisture-Density	ASTM D1557	11
Field Density	ASTM C1040	73
Field Moisture Content	ASTM D3017	73
Pavement Thickness	ASTM C174, ASTM C174M	27
Flexural Strength	ASTM C78	240
Compressive Strength	ASTM C1176	100
Borrow Source Assessment of Select Fill		
Sieve Analysis	ASTM C136	1 per borrow source
Liquid Limit	ASTM D 4318	1 per borrow source
Plastic Limit	ASTM D 4318	1 per borrow source

The QCM will describe the item or condition in the DQCR, complete a NCR, and file the report in the QC file. The NCR will provide documentation on the status of the deficiency and include the documented history of the deficiency as corrective action proceeds. The QCM will update the status of the deficiency when there is a change in status.

Before daily work activities begin, the QCM will note any deficiencies that require follow up verification for that day. A new or changed status will be entered into the file at the end of each day. The DQCR will include a report on each NCR/deficiency that was corrected and closed out for that day. Each NCR will be tracked on the Nonconformance Report Tracking Log.

10.4 Notification

The ROICC will be informed of the identification and progress towards the resolution of non-conforming items/conditions. This will be accomplished by attaching all NCRs to the DQCR and by documenting the non-conforming items/conditions in QC Meetings.

11.0 DOCUMENTATION

ECC will prepare and maintain the site work reports as described in this Section and deliver them to the Navy Technical Representative.

11.1 Documentation Procedures

An on-site project file will be established in accordance with ECC Program QC policies and the contract. The project file will include a record copy of the following:

1. Contract task order documentation,
2. Project Plans,
3. Navy review comments and comment resolutions,
4. Navy notice to proceed,
5. Technical specifications, including addenda and modifications,
6. Contract change orders and other contract modifications,
7. Manufacturer's certificates,
8. Safety and health compliance forms,
9. Training certifications,
10. Daily production sheets,
11. DQCRs, and
12. Incident/Accident Reports.

ECC will maintain the following three distinct forms of files for project documentation:

- Hard copy;
- Electronic copy; and
- Electronic backup discs.

A complete set of project files will be maintained in the site office trailer.

11.2 Reports

This section briefly describes the types of QC meeting and daily reports, and the manner of reporting QC test results.

11.2.1 Quality Control Meeting Minutes

QC meeting minutes will be forwarded to the ROICC within 7 days of the meeting.

11.2.2 Contractor Production Report

ECC will produce a DQCR that will include a Contractor Production Report. Each DQCR will be prepared, signed, and dated by the QCM. A DQCR will include the following information:

- Date of report, report number, name of contractor, contract number, title and location of contract and task order, and superintendent present;
- Daily weather report, morning and afternoon, including maximum and minimum temperatures, and wind direction and speed;
- Work progress;
- An overview of QC activities performed each day, including those performed on subcontractor and supplier activities;
- Verbal instructions given by the government and associated actions by ECC;
- Field changes and variance;
- Safety inspections and/or deficiencies, lost time accidents, hazardous materials or waste released into the environment;
- Personnel, materials, equipment on the work site;
- Workforce job hours and cumulative hours;
- Conflicts or errors in the specifications;
- Corrective actions taken;
- Problems and/or delays encountered;
- A record of visitors to the work site; and
- Contract information.

The DQCR will present an accurate and complete description of QC activities. It will document both conforming and deficient conditions, and will be precise, factual, legible, and objective. Copies of the supporting documentation, such as checklists and surveillance reports, will be attached.

A field QC log will be assigned to the QCM for documenting details of field activities during QC monitoring activities. The information in the QC log is intended to serve as a memory aide in the preparation of the DQCR and in addressing follow-up questions that may arise.

The QCM is responsible for the preparation and submission of the DQCR to the ROICC with a copy to the PM. The original and one copy of the DQCR with attachments will be submitted to the ROICC on the following day, no later than 10:00 AM, or at a time designated by the ROICC. All calendar days, including weekends and holidays, will be accounted for throughout this project.

DQCRs and QC logs used on this project are legally binding documents, subject to restrictions. Each DQCR will be assigned and tracked by a unique number comprised of the letters GP followed by the date expressed as YYMMDD (where GP = Gulfport, YY = year, MM = month, and DD = day). Copies of DQCRs with attachments and QC logs no longer in use will be maintained in the project QC file. Upon project closeout, all QC logs will be included in the project QC file.

11.2.3 Certified Test Report

Certified test reports will be prepared for the tests presented in Table 9-1. Certified test reports will be attached to each DQCR, as they are received. All certified test reports will be collated and included in the project closeout report.

11.2.4 Summary Report of Field Tests

A summary report of field tests will be prepared upon completion of each major activity. Field test summary reports will be submitted for the following activities:

- Soil/sediment excavating;
- Soil/sediment stabilization processing;
- Backfill and stabilized soil compaction testing using ASTM D 1557;
- Rolled concrete cap placement;
- Slope stabilization and erosion control; and
- Site and wetlands restoration and monitoring.

The summary report of field tests will include an introduction, summary of tests and results, and copies of all certified test results.

11.3 Rework Items List

The Rework Items list will be attached to the last DQCR of the month, and will identify:

- Items to be reworked;
- Date originally discovered; and
- Date resolved.

11.4 As-Built Drawings

As-built drawings will be maintained on site. Design drawings will be marked in red indicating all variances from the design.

12.0 CERTIFICATIONS

This section describes the certifications of DQCRs, invoices and the contractor's release form.

12.1 Contractor Quality Control Report Certification

Each Contractor QC Report will contain the following statement attested to by the QCM:

“I certify that the above report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment, and workmanship are in strict conformance with the plans and specifications except as may be noted above”.

A certificate will be furnished to the Navy's designated site representative with each payment request, signed by the QCM, attesting that descriptions are current and the work for which payment is requested is in compliance with contract requirements. Upon completion of work under a contract task order, the QCM, will furnish a certificate to ROICC attesting that “the work has been completed, inspected, and tested, and is in conformance with the contract.”

12.2 Invoice Certification

All invoices must be accompanied by certification. A Progress Payment Certification form is presented in Appendix B. A BANC form 4330-01 is included for inventory, and a SOUTHNAVFACENCOM P-150 form is included for certification of stored material and an inventory. The “invoice” amount, as obtained from a supplier and included in the payment request, will be used as the basis of payment for stored materials.

12.3 Completion Certification

The final invoice will be accompanied by Contractor's Release, form NAVFAC 4330/7 (6-72) and Contractor's Representation of Transportation of Supplies by Sea form, both of which are included in Appendix B.

10.0 REWORK PROCEDURES

The ECC Quality Improvement Process (QIP) evaluates the effectiveness of our QC Program and ensures continuous improvement in the quality of our work. The primary goal of our QIP and the QC program is to prevent non-conformances, and to facilitate continual process improvement. To the extent that the first of these goals is not achieved, the identified deficiencies or non-conformances will be corrected in a timely and cost-effective manner in order to prevent their recurrence. This QC Plan includes provisions for preventing quality issues and facilitating process improvements, as well as identifying, documenting, and tracking deficiencies until corrective actions have been verified.

10.1 Preventive Measures

While the entire QC program is directed toward problem prevention, certain elements of the program have greater potential to be pro-active. The primary tools for preventing problems on this project include:

- Employee and subcontractor qualification and training;
- Submittal management;
- Preparatory, initial and follow up inspections; and
- Equipment calibration and maintenance.

10.2 Continual Improvement

All project personnel are encouraged to provide recommendations for improving work processes and techniques. The intent is to identify activities that are compliant but may be performed in a more efficient or cost-effective manner. Typical quality improvement recommendations include identifying an existing practice that can be improved (e.g., a bottleneck in production) and/or recommending an alternative practice that provides a benefit without compromising the standards of quality.

Project personnel may bring their recommendations to the attention of project management or QC staff through verbal or written means. However, deviations from established protocols will not be implemented without prior written approval by the PM and concurrence of QCM. When a staff-initiated recommendation results in a tangible benefit to the project, the PM will give public acknowledgement.

10.3 Identifying Deficiencies

The QCM will be notified of all deficiencies identified during the course of the field activities to ensure that each deficiency is documented, reported, and tracked, and that corrective actions are implemented and verified.

The QCM will include the identified deficiencies in the DQCR noting the deficient item, date, time and location, the person who identified the deficiency, and the status of the item to which the deficiency applies.

13.0 PROJECT SCHEDULE

A copy of the project schedule is included in Appendix C.

APPENDIX A

LETTER OF APPOINTMENT

ENVIRONMENTAL CHEMICAL
C O R P O R A T I O N

November 2, 2004

Mr. Kevan McCaslin
Environmental Chemical Corporation
1240 Bayshore Highway
Burlingame, CA 94010

**RE: Appointment of Project Quality Control Manager; Contract No. N62467-02-D-0468,
CTO 002**

Dear Mr. McCaslin,

This letter is in reference to NAVFAC SOUTHDIV, Contract Number N62467-02-D-0468, CTO 002, titled "Site 8 – Herbicide Orange Storage Area and Off-Base Area of Contamination, Naval Construction Battalion Center, Gulfport, Mississippi."

You have been appointed as the Quality Control Manager (QCM) for this CTO. As the QCM, you will implement and fulfill all roles and responsibilities specified in the contract referenced above.

Responsibilities

As a part of your job, you are required to perform the following duties:

- 1) Inspect the work performed each day for compliance with approved plans and specifications;
- 2) Supervise and coordinate the inspections and tests performed by members of the Quality Control (QC) staff and record the results. Maintain a current testing plan and QC log at the job site;
- 3) Conduct QC meetings and disseminate QC meeting minutes;
- 4) Inspect and certify that all materials and equipment delivered to the job site comply with applicable specifications, drawings, and approved submittals;
- 5) File certified daily inspection reports on forms approved by SOUTHDIV;
- 6) Document all deviations, issue a Stop Work Order (if necessary), notify SOUTHDIV, and initiate corrective action;
- 7) Recommend the removal of any individual who consistently fails to perform quality work;
- 8) Report any subcontractor who consistently does not conform to contract plans and specifications. Recommend withholding of partial payments to any nonconforming subcontractors;
- 9) Consult the appropriate SOUTHDIV personnel, if there are any questions about the interpretation of plans and/or specifications;
- 10) Do not accept or approve any changes without written notification from the appropriate authority;
- 11) Maintain a copy of the government approved QC Plan at the job site. This copy shall be kept complete and current;

ENVIRONMENTAL CHEMICAL
C O R P O R A T I O N

- 12) Direct the removal and replacement of any defective work and maintain a current rework list at the job site; and
- 13) Review and/or supervise the review of all submittal data for compliance with contract requirements.

Authority

In order to allow you to perform your duties in the best interest of ECC and the client, you have the authority to stop work in case it is not of adequate quality and fails to meet required specifications. In addition, you may request, with the concurrence of the Project Manager, to remove and replace defective work.

Reporting Relationship

As the QCM, you have a direct reporting relationship to me for quality control and issue resolution. You also have an indirect reporting relationship to the Project Manager, Prashant Khanna, to facilitate project execution.

If you have any questions, or need additional information, please contact Mr. Prashant Khanna, the ECC Project Manager at (650) 347-1555 or myself at (303) 898-8859.

Sincerely,



Richard Gioscia, CIH, CSP, CQM, CHMM
Vice President, Environment, Safety and Quality

Distribution: Art Conrad, SOUTHDIV RPM
Jerry Davis, ROICC Project Manager Gulf Coast Area
Prashant Khanna, ECC Project Manager
ECC Project File

APPENDIX B
QUALITY CONTROL FORMS

Contractor Quality Control Report Continuation Sheet
(Attach additional sheets if necessary)

Page ____ of ____

Date: _____

Contractor: Environmental Chemical Corporation (ECC)

Report No. _____

Contract No. _____ CTO No. _____

Project No. _____

PREPARATORY PHASE INSPECTION

Y – Yes; N - No; N/A – Not Applicable	
Plans and Specs have been reviewed	
Submittals have been approved	
Materials comply with approved submittals	
Preliminary work was done correctly	
Testing Plan has been reviewed	
Work method and schedule discussed	

Identify Definable Feature of Work and Location, and List Personnel Present

Contractor's QC Manager

Date

Contractor Quality Control Report Continuation Sheet
(Attach additional sheets if necessary)

Page ____ of ____

Date: _____

Contractor: Environmental Chemical Corporation (ECC)

Report No. _____

Contract No. _____ CTO No. _____ Project No. _____

INITIAL PHASE INSPECTION

Y - Yes; N - No; N/A – Not Applicable	
Preliminary work was done correctly	
Sample was prepared and approved	
Workmanship is satisfactory	
Test results are acceptable	
Work is in compliance with the contract	

Identify Definable Feature of Work, Location, and Personnel Present

Testing Performed & Who Performed Test (including number of samples and tests taken)

Contractor's QC Manager

Date

Contractor Quality Control Report Continuation Sheet
(Attach additional sheets if necessary)

Page ____ of ____

Date: _____

Contractor: Environmental Chemical Corporation (ECC)

Report No. _____

Contract No. _____ CTO No. _____ Project No. _____

FOLLOW-UP PHASE INSPECTION

Y - Yes; N - No; N/A - Not Applicable	
Work is in compliance with the contract	

Identify Definable Feature of Work, Location, and Personnel Present

Testing Performed & who Performed Test (including number of samples and tests taken)

Contractor's QC Manager

Date

NON-CONFORMANCE REPORT

Contract No. _____ CTO No. _____

NCR Number:	Project Name and Number:	Date:	Page 1 of
<p>Nonconformance Description (include specific requirement violated):</p> <p style="text-align: center;">Identified by: _____ Date: _____</p>			
<p>Root Cause of Nonconforming Action:</p>			
<p>Corrective Action(s) to be Taken (include date when action(s) will be complete):</p> <p>To be Performed by: _____ Date: _____</p>			
<p>Action(s) to be Taken to Preclude Recurrence:</p> <p>To be Performed by: _____ Date: _____</p>			
<p>Acceptance by:</p> <p>Project Manager: _____ Date: _____</p> <p>CQC Manager: _____ Date: _____</p>			
Corrective Action(s) Completed by and Date:		Verification Completed by and Date:	

**DAILY QUALITY CONTROL REPORT
AND CONTRACTOR PRODUCTION REPORT**

2. Job Safety Actions/Safety Inspections Conducted

Was the Job Safety Meeting Held? Yes _____ No _____ (Attach. Minutes)
Were there lost time accidents? Yes _____ No _____ (Attach. OSHA Report)
Trenching/scaffold/high voltage Yes _____ No _____ (Attach. Statement)
Haz. Mat. released into environment? Yes _____ No _____ (Desc. of Incident)

3. UXO Actions Taken

4. List of Construction Equipment on Work Site and Hours Used

5. Instructions Received from the Contracting Officer on Deficiencies or Work Required

6. Quality Control Inspections Conducted

7. Submittal Action

8. Remarks

(Work Progress and Delays)
(Safety Hazards Encountered)
(Instructions Given and Corrective Actions Taken)

Date: _____

**DAILY QUALITY CONTROL REPORT
AND CONTRACTOR PRODUCTION REPORT**

9. Record of Visitors to the Work Site

10. Definable Feature of Work

11. Remarks: Rework:

12. Attachments:

13. Certifications: I certify that the above report is complete and correct and that I, or my authorized representative, have inspected the work performed this day by the Prime Contractor and each subcontractor, and have determined that all materials, equipment, and workmanship are in strict compliance with the plans and specifications except as may be noted above.

Project Quality Control Specialist

Date

CORRECTIVE ACTION REQUEST

Project _____

Contract No. _____ **CTO** _____

Adverse Trend: Yes ___ No ___	CAR Number:	Date:	
Organization/Project/Department:		Person Contacted:	
Discrepancy (include specific requirements violated):			
Originator:		Response Due Date:	
Corrective Action Taken/Proposed to Correct Discrepancy:			
Corrective Action Taken to Prevent Recurrence (the cause of the discrepancy must also be included here):			
Corrective Action Taken by (signature and date):		Date When Corrective Action Completed:	
Corrective Action Evaluated:		Verification of Implementation:	
Evaluated by:	Date:	Verified by:	Date:

REWORK ITEMS LIST

Project: _____

Contract No. _____

CTO No. _____

Item	Date Identified	Date Corrected
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
20.		
21.		
22.		
23.		
24.		

STOP WORK ORDER

Project Name: _____ Date: _____

S.W.O. No. _____ Page 1 of _____

Contract No. _____ CTO Number - _____

1. Written Notice Issued to: Name: _____
Title: _____
Org.: _____

2. P.O. # or Activity: _____

3. Location: _____

4. Issued by (name): _____
Issued by (title): _____

5. Verbal Notice Issued to:
Name: _____ Date: _____ Time: _____
Title: _____

6. Associated NCR No.: _____
7. Associated CAR No.: _____

8. Stop Work Order Condition Description:

9. Remedial Action Required:
By Whom: _____ By When: _____
Required Remedial Action Determined by:
Project Manager: _____ Date: _____

CQC MANAGER: _____ **DATE:** _____

10. Follow-up of Remedial Action Taken:
Verbal Notice to Resume Operations Given to:
Name: _____ Date: _____ Time: _____
Title: _____
Stop Work Order Cancellation Authorized by:
Program CQC Manager: _____ Date: _____

FIELD WORK VARIANCE

Project Name: _____ Variance No.: _____

Project No.: _____ Page 1 of _____

Contract No. _____ CTO No. _____ Date: _____

Variance (include justification and present requirements) Requested by: _____

Proposed Change

Technical Justification

Cost/Schedule Impact

Reason for Change ___ Addition ___ Deletion
Change Order Required ___ No ___ Yes Change Order No.

Applicable Document

cc:

Approved by: _____
Project Manager

Date:

Approved by: _____
CQC Manager

Date:

Approved by: _____
Contracting Officer

Date:

EQUIPMENT DAILY CHECK LIST

Equipment Name/Number: _____
 Engine Hrs./Mileage: _____
 Date: _____

BRAKES	COOLING WATER
AIR SYSTEM	OPERATING CONTROLS
TIRES/TRACKS	LIGHTS/REFLECTORS
HORN	WINDSHIELD WIPERS
SAFETY DEVICES	FIRE EXTINGUISHER
GLASS	BACKUP ALARM
MIRRORS	ENGINE OIL Add/check
DEFROSTER	EXHAUST SYSTEM
STEERING SYSTEM	FLUID LEVELS
WIRE ROPE	ELECTRICAL SYSTEM
APPEARANCE	BREATHING AIR BOTTLES

These items are to be checked each shift before operating this piece of equipment.
 Report ALL items requiring repair to supervisor prior to operation of equipment.

NOTES: _____ _____ _____ _____
OPERATOR: _____ (Print Name)

INVOICE CERTIFICATION
(FAR 52.232-5)

CONTRACTOR'S NAME : _____

ADDRESS: _____

CONTRACT NUMBER AND DESCRIPTION:

N62467- -C- _____

I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code; and
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and
- (4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Signature)

(Typed Name)

(Date)

INVOICE CERTIFICATE TO BE USED ON ALL CONTRACTS.

CERTIFICATION OF STORED MATERIAL

STATE OF _____

COUNTY OF _____

PERSONALLY appeared before me _____
(Contractor's Authorized Representative)

who being duly sworn, states under oath that the statements and representations made herein are for the purpose of inducing the Department of the Navy to advance certain contract funds sought by the undersigned; that all payrolls, social Security taxes, state and federal unemployment taxes, material invoices, sales, privileges and/or license taxes and other liabilities incurred in the performance of

(Name of Contract and Location)

_____, have been paid in full and that the stored materials listed in the attached payment request Number _____, are the property of

(Contractor's Name)

The undersigned hereby waives and releases and agrees to indemnify, defend, And hold harmless the Department of the Navy from any and all rights, claims And demands arising from or in any related, directly or indirectly, to the Furnishing of any labor, materials, supplies or other advances and/or any Claim of lien pertaining to said contract.

Sworn to and subscribed before me
This _____ day of _____, 20____

Seal
(NOTARY PUBLIC)

(COMPANY NAME OF CONTRACTOR)

My Commission Expires: _____ By: _____

Title: _____

Date: _____

CONTRACTOR'S RELEASE
NAVFAC 4330/7 (6-72)
5IN 0105.001.9100

CONTRACTOR'S RELEASE UNDER CONTRACT _____

KNOW ALL MEN BY THESE PRESENTS: In consideration of the premise and the sum of _____
_____ (\$ _____)

lawful money of the United States of America (hereinafter called the "Government") _____
_____ (\$ _____)

of which has already been paid and _____
_____ (\$ _____) of which is to be paid

by the Government under the above-mentioned contract, the undersigned Contractor does, and by the receipt of said sum shall, for itself, its successors and assigns, remise, release and forever discharge the Government, its officers, agents, and employees, of and from all liabilities, obligations and claims whatsoever in law and in equity under or arising out of said contract.

IN WITNESS WHEREOF, this release has been executed this _____ day of _____ 20_____.

WITNESSES: _____
(Contractor)

_____ BY: _____

_____ TITLE: _____

CERTIFICATE

I, _____, certify that I am the _____ secretary of the corporation named as Contractor in the foregoing release; that _____ who signed said release on behalf of the Contractor was then _____ of said corporation; that said release was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

(Corporate Seal)

**CONTRACTOR'S REPRESENTATION
OF
TRANSPORTATION OF SUPPLIES BY SEA**

In accordance with DFARS 252.247-7023 as prescribed by DFARS 247.573(b), the following certification shall be provided with the final invoice submitted under this contract:

No ocean transportation was used in the performance of this contract;

Ocean transportation was used and only U. S.-flag vessels were used for all ocean shipments under the contract;

Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

Ocean transportation was used and some or all of the shipments were made on non-U. S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

<u>TOTAL</u>	<u>ITEM DESCRIPTION</u>	<u>CONTRACT LINE ITEMS</u>	<u>QUANTITY</u>
--------------	-----------------------------	--------------------------------	-----------------

Signature/Date

Title

Company Name

NOTE: Failure to provide the above representation (when applicable) with the final invoice will result in the Government 's rejection and return of the invoice as an improper invoice for the purposes of the Prompt Payment clause of this contract.

APPENDIX C
PROJECT SCHEDULE

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	2004												2005												2006	
						APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	F			
NCBC0065	WORK PLAN/DESIGN REVIEW MEETING	1	10SEP04	10SEP04	72	I WORK PLAN/DESIGN REVIEW MEETING																									
NCBC0423	PRECONSTRUCTION MEETING	1	25OCT04	25OCT04	53	I PRECONSTRUCTION MEETING																									
DESIGN																															
BENCH-SCALE TREATABILITY STUDY																															
NCBC4110	Prepare & Issue Bench-Scale Treat Study WP	10	24JUN04	08JUL04	62	■ Prepare & Issue Bench-Scale Treat Study WP																									
NCBC4120	Navy Approves Bench-Scale Treat Study WP	10	09JUL04	22JUL04	62	■ Navy Approves Bench-Scale Treat Study WP																									
NCBC4160	Prepare & Issue Bench Scale Treat Study Report	45	23JUL04	24SEP04	62	■ Prepare & Issue Bench Scale Treat Study Report																									
NCBC4170	Navy Reviews & Approves Bench Scale Treat Rep.	10	27SEP04	08OCT04	62	■ Navy Reviews & Approves Bench Scale Treat Rep.																									
WORK PLANS																															
SOLIDIFICATION/STABILIZATION WORK PLANS																															
NCBC4130	Prepare & Issue Draft of S/SWP to NEFC	72	31MAY04	09SEP04	53	■ Prepare & Issue Draft of S/SWP to NEFC																									
NCBC4140	NEFC Reviews & Approves Draft S/SWP	15	10SEP04	30SEP04	53	■ NEFC Reviews & Approves Draft S/SWP																									
NCBC4150	Prepare & Issue Final S/SWP to NEFC	10	01OCT04	15OCT04	53	■ Prepare & Issue Final S/SWP to NEFC																									
NCBC4200	NEFC Reviews & Approves Final S/SWP	5	18OCT04	22OCT04	53	■ NEFC Reviews & Approves Final S/SWP																									
CONSTRUCTION WORK PLAN (CWP)																															
NCBC0050	Prepare & Issue Draft Work Plan	72	31MAY04	09SEP04	53	■ Prepare & Issue Draft Work Plan																									
NCBC0060	NEFC Comments on Draft Work Plan	20	10SEP04	07OCT04	53	■ NEFC Comments on Draft Work Plan																									
NCBC0070	Revise & Resubmit Final Work Plan	5	08OCT04	15OCT04	53	■ Revise & Resubmit Final Work Plan																									
NCBC0080	NEFC Reviews & Approves Final Work Plan	5	18OCT04	22OCT04	53	■ NEFC Reviews & Approves Final Work Plan																									
HEALTH & SAFETY PLAN (H&SP)																															
NCBC0090	Prepare & Issue Draft H&SP	72	31MAY04	09SEP04	53	■ Prepare & Issue Draft H&SP																									
NCBC0100	NEFC Comments on Draft H&SP	20	10SEP04	07OCT04	53	■ NEFC Comments on Draft H&SP																									
NCBC0110	Revise & Resubmit Final H&SP	5	08OCT04	15OCT04	53	■ Revise & Resubmit Final H&SP																									
NCBC0120	NEFC Reviews & Approves Final H&SP	5	18OCT04	22OCT04	53	■ NEFC Reviews & Approves Final H&SP																									

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	2004												2005												2006	
						APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	F			
BONDS																															
PERFORMANCE & PAYMENT BOND																															
NCBC1240	Procure & Submit Performance Bond	5	31MAY04	04JUN04	139	Procure & Submit Performance Bond																									
MOBILIZATION																															
RAINY SEASON SHUTDOWN																															
NCBC0475	Construction Shutdown in June for Rainy Season	30	01JUN04*	30JUN04	118	Construction Shutdown in June for Rainy Season																									
NCBC0486	Construction Shutdown in July for Rainy Season	31	01JUL04	31JUL04	118	Construction Shutdown in July for Rainy Season																									
NCBC0492	Construction Shutdown in August for Rainy Season	30	01AUG04	30AUG04	118	Construction Shutdown in August for Rainy Season																									
REMEDATION																															
OFF BASE REMEDIATION (OB)																															
QUALITY CONTROL MEETING																															
NCBC0595	HOLD QC MEETING ON OFF BASE SCOPE OF WORK	0	26OCT04		54	HOLD QC MEETING ON OFF BASE SCOPE OF WORK																									
MOBILIZATION																															
NCBC0565	Mobilize Equip, Personnel & Surveyor - Off Base	1	26OCT04	26OCT04	54	Mobilize Equip, Personnel & Surveyor - Off Base																									
NCBC0585	Tree Remover Sub Mobilizes to Off Base	2	26OCT04	27OCT04	56	Tree Remover Sub Mobilizes to Off Base																									
SITE PREPARATION																															
OTHER SITE PREPARATION																															
NCBC0600	Install Laydown Area - Off Base	2	27OCT04	28OCT04	55	Install Laydown Area - Off Base																									
NCBC0670	Install & Maintain Erosion & Sediment Control OB	3	27OCT04	29OCT04	54	Install & Maintain Erosion & Sediment Control OB																									
NCBC0573	Install 6-30" Dia. Corrugated Metal Culverts OB	7	16NOV04	24NOV04	56	Install 6-30" Dia. Corrugated Metal Culverts OB																									
NCBC0640	Install 3,090' Surface Water Diversion Trench OB	7	16NOV04	24NOV04	56	Install 3,090' Surface Water Diversion Trench OB																									
NCBC0762	Perform Pre-Excavation Survey OB	2	26NOV04	29NOV04	54	Perform Pre-Excavation Survey OB																									
ACCESS PREPARATION WORK																															
NCBC0561	Perform Survey for Access & Haul Roads OB	5	27OCT04	03NOV04	62	Perform Survey for Access & Haul Roads OB																									
NCBC2035	Construct Access Route 28 to Wetlands OB	4	27OCT04	01NOV04	70	Construct Access Route 28 to Wetlands OB																									
NCBC0570	Removal of Trees and Brush OB	15	01NOV04	22NOV04	54	Removal of Trees and Brush OB																									
NCBC0580	Install 3,090 by 20' Off Site Access Road OB	7	16NOV04	24NOV04	54	Install 3,090 by 20' Off Site Access Road OB																									

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float	2004												2005												2006	
						APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	F			
SITE "8A" SECTION 1 CAPPING 157,730 SF (S1)																															
NCBC0830	Compact Stabilized Soil in S1 on "8A"	16	20APR05	11MAY05	53																										
NCBC0840	Construct RCC Cap Over S1 Stabilized Soil "8A"	10	12MAY05	25MAY05	67																										
SITE "8A" SECTION 2 CAPPING 157,730 SF (S2)																															
NCBC0831	Compact Stabilized Soil in S2 of "8A"	16	12MAY05	03JUN05	55																										
NCBC0841	Construct RCC Cap Over S2 Stabilized Soil "8A"	10	06JUN05	17JUN05	61																										
SITE "8A" SECTION 3 CAPPING 157,730 SF (S3)																															
NCBC0832	Compact Stabilized Soil in S3 of "8A"	16	06JUN05	27JUN05	55																										
NCBC0842	Construct RCC Cap Over S3 Stabilized Soil "8A"	10	28JUN05	12JUL05	55																										
POST CONSTRUCTION																															
DEMOBILIZATION																															
DEMOBILIZATION																															
NCBC0847	Demobilize & Clearance of Site "8A"	1	13JUL05	13JUL05	55																										
REPORTS																															
NCBC0850	Prepare & Issue Final Reports	45	12MAY05	15JUL05	53																										
MODIFICATION 1																															
ADDITIONAL SAMPLING CANAL ROAD																															
NCBC0860	Start-Up and Training	40	09AUG04	04OCT04	227																										
NCBC0870	Field Sampling and Validation	10	05OCT04	19OCT04	227																										
NCBC0880	Analysis and Reporting	10	20OCT04	03NOV04	227																										