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# PLAN OF ACTION REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) FOR OPERABLE UNITS 3, 4, 5 AND 6 NAS CECIL FIELD FL

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ABB ENVIRONMENTAL

# PLAN OF ACTION

## Remedial Investigation/Feasibility Study (RI/FS)
## for Operable Units 3, 4, 5, and 6
## Naval Air Station Cecil Field
## Jacksonville, Florida

**Contract No. N62467-89-D-0317**
**Statement of Work No. 077 (Modification)**
**Contract Task Order No. 090**

**Submitted by:**

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## INTRODUCTION

ABB Environmental Services, Inc. (ABB-ES), is under contract to the Department of the Navy to provide environmental consulting and engineering related services to naval facilities throughout the southeastern United States. This Comprehensive Long-term Environmental Action, Navy (CLEAN) contract is a task order contract administered by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) located in Charleston, South Carolina. SOUTHNAVFACENGCOM is responsible for execution of the Navy's Installation Restoration (IR) program throughout the southeastern United States. The IR program is intended to mitigate potential threats to human health and the environment resulting from past disposal practices of hazardous wastes. Naval Air Station Cecil Field (NASCF) has been identified as a National Priorities List (NPL) site under the Superfund Amendments and Reauthorization Act (SARA) of 1986, and Remedial Investigations (RIs) and Feasibility Studies (FSs) have begun at several potential sources of contamination (PSC) comprising Operable Units (OUs) 1, 2, 3, 4, 5, 6, and 7. An OU is one or more PSCs at which RIs and remedial or removal action can proceed.

The purpose of this document, known as a Plan of Action (POA), is to present in detail the scope of services, the schedule, and budget programmed for execution of the Navy's modification to Statement of Work (SOW) No. 077, Contract No. N62467-89-D-0317. The modified SOW was issued to ABB-ES on August 24, 1993. This POA is the controlling document for task order execution; it documents the basis for final negotiations and is the document by which performance is measured.

## TASK IDENTIFICATION AND COST REPORTING

Tasks presented in the SOW (Appendix A) were reviewed, evaluated, and broken down in accordance with the WBS described above. The POA scope of services was then developed by identifying tasks corresponding to the WBS. All tasks requested in the SOW are incorporated in the POA tasks as described in the following lists comparing SOW and POA tasks.

| SOW Task | | | POA Task |
|---|---|---|---|
| Section | | Task | |
| 5.0 | RI/FS | | |
| | 5.4 | 1 | 21 |
| | 5.5 | 1 | 22 |
| | 5.6 | 1 | 23 |
| | 5.7 | 1 | 24 |
| 13.0 | Removal Actions | | |
| | 13.1 | 29 | 25 |
| | 13.2 | 30 | 26 |

## SCOPE OF SERVICES AND FEE ITEMIZATION

The purpose of this section is to clearly define the scope and assumptions made for this fee proposal should it be necessary to enact provisions delineated in Part VII, paragraph 22, of the subject contract in accordance with Federal Acquisition Regulations (FAR) 52.243-2.

Specific Parameters:
As outlined specifically in Tasks 1B, 21 through 26.

Period of Performance Parameters:
Costs presented are estimated to be incurred through August 1995 with substantial completion (>95 percent) by May 1995.

The estimated budgets for performance of the technical scope of services as stated below are contained in Appendix A. Direct labor has been escalated to its midpoint, June 1994. The text may also provide rationale for cost estimating and, when cross-referenced with Appendix A, will provide the basis for estimating the project budget. Task schedules are presented in Appendix B.

All tasks associated with field work have a level of effort (LOE) based on three field personnel. One of these is the Field Operations Leader (FOL). The FOL coordinates, directs, and manages field activity in accordance with the POA. LOE was scoped in this manner to better track costs associated with individual tasks.

Total duration of the project is estimated to be 18 months.

**TASK 1B, PROJECT MANAGEMENT**. Task 1B, Project Management, has been added to the POA for the modification of CTO 090 pursuant to Section 8.0, Project Management Support, of SOW No. 077 as modified on August 23, 1993. A thorough discussion of the specific elements involved in project management for CTO 090 are presented in the Scope of Services for CTO 090 (ABB-ES June, 1993) under Task 1, Project Management. This discussion is not reproduced here. LOE has been included for a TOM, an Installation Manager, a Technical Lead, and a Project Assistant. Their duties will be to administer the services required by the modification to SOW 077. Also included in this task are Community Relations, Technical Expert, Health and Safety, Quality Manager, and Project Controls Support. LOE has been estimated for the TOM, Installation Manager, Technical Lead, and Project Assistant assuming that: (1) they will be dedicated to CTO 090 as modified; (2) a notice to proceed date of January 17, 1994, is forthcoming; and (3) 2 months will be required for project closeout following the finalization of the Technical Memorandum for OU 3 (see schedule in Appendix C and Subtask 23.1).

**TASK 21, PREPARATION OF REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) WORKPLAN FOR OPERABLE UNITS 3, 4, 5, AND 6**. An RI/FS will be completed at OUs 3, 4, 5, and 6 pursuant to Section 5 of SOW No. 077. The RI/FS workplan will consist of the following documents.

RI/FS Workplan. The RI/FS workplan will outline an investigative program and approach that includes the following elements. LOE and costs for completion of the confirmation investigation are not included in this POA.

**Initial Investigation**. An initial investigative program will be developed for OUs 3, 4, 5, and 6. This investigation will follow the field program outlined in the Field Screening Workplan for OUs 3, 4, 5, and 6.

**Technical Memoranda**. Technical Memoranda will be prepared for each OU following the completion of the initial investigation for that OU. These memoranda will include an evaluation of the data gathered during the initial investigation and will finalize the rationale and sampling locations for the confirmational program to be completed in support of the RI/FS for OUs 3, 4, 5, and 6.

**Confirmation Investigation**. A confirmation investigation will be developed for OUs 3, 4, 5, and 6 and presented in the RI/FS workplan. This proposed confirmation investigation will be used as a planning tool and include numbers of samples, sampling locations (both areal and vertical), and an analytical program. The actual numbers and locations of sampling stations to be included in the confirmation investigation will be finalized and agreed upon in the Technical Memoranda.

Sampling and Analysis Plan (SAP). The SAP will consist of a Quality Assurance Project Plan (QAPP) and a Field Sampling Plan (FSP).

Health and Safety Plan (HASP). The HASP will address the health and safety of the onsite workers as well as the surrounding community during the completion of activities planned for the initial investigation and the confirmation investigation.

Document Preparation. A draft RI/FS workplan (including SAP and HASP) will be submitted to the Navy, the regulatory agencies, and the Technical Review Committee (TRC). A letter of response to comments from the Navy, the regulatory agencies, and the TRC on the draft RI/FS workplan (including SAP and HASP) will be prepared and distributed. Following resolution of issues raised by the comments to the draft RI/FS workplan, a final RI/FS workplan (including SAP and HASP) will be prepared. The final RI/FS workplan will incorporate the issues raised and resolved during the comment period and the response to comments.

LOE for this task has been estimated by Camp, Dresser and McKee, Inc. (CDM) and are presented as a subcontractor cost. Other direct costs (ODCs) that will be incurred by ABB-ES have been estimated under Subtask 21.1.

**Subtask 21.1, Project Oversight** ABB-ES will provide continuous oversight of all project activities. The oversight will include document review. ABB-ES will be responsible for submission of all documents to the Navy. LOE for technical and project oversight has been estimated assuming a 1 hour conference call for the Technical Lead and project hydrogeologist.

**Subtask 21.2, Site Visit and Meetings** In order to provide appropriate oversight of the RI/FS workplan preparation, several meetings will be required as follows.

(1) Initial data collection meeting in Tallahassee. LOE has been estimated assuming four people for 2 days.

(2) Site visit to NAS Cecil Field in Jacksonville, Florida. LOE has been estimated assuming two people for 1 day.

(3) Conceptual model review meeting in Tallahassee. LOE has been estimated assuming four people for 2 days.

(4) Comment response meeting in Tallahassee. LOE has been estimated assuming four people for 1 day.

**TASK 22, IMPLEMENTATION OF INITIAL INVESTIGATION PROGRAM FOR OUs 3, 4, 5, AND 6**. An initial investigation field program will be completed at OUs 3, 4, 5, and 6 pursuant to Section 5 of SOW No. 077. This task includes all surface and subsurface soil sampling, soil boring, monitoring well installation, groundwater sampling, surface water and sediment sampling, and other associated activities required to complete the RI/FS. All activities will be executed as set forth in the RI/FS Workplan for OUs 3, 4, 5, and 6. However, for cost estimating purposes, the scope defined in Field Screening Workplan for OUs 3, 4, 5, and 6 was used.

**Subtask 22.1, Initial investigation for OU 3** OU 3 consists of Sites 7 and 8. Both sites were used as fire training areas. The initial investigative field program follows the Field Screening Workplan and LOE for each task are listed in Table 3 of Appendix C. The initial investigative field program for OU 3 has been divided into the following subtasks:

- Subtask 22.1.1, Subsurface Soil Sampling;
- Subtask 22.1.2, Groundwater Sampling;
- Subtask 22.1.3, Surface Runoff and Sediment Sampling;
- Subtask 22.1.4, Surface Soil Screening; and
- Subtask 22.1.5, Analyses and Data Management.

**Subtask 22.1.1, Subsurface Soil Sampling** A total of 12 soil borings will be completed at OU 3 to support the characterizations of the nature and extent of contamination. Four subsurface samples will be collected from each of four boring locations at Site 7 for a total of 16 samples. Four subsurface soil samples will be collected from each of eight boring locations at Site 8 for a total of 32 samples. The FOL will collect four additional samples to clarify and support field observations. Twenty-four QA/QC samples will be collected (six duplicates, five matrix spikes, five matrix spike duplicates, five equipment rinsates, and three source blanks). Additionally, two samples from each site will be collected from the vadose zone for geotechnical analysis.

LOE for this subtask has been estimated assuming two soil boring locations and associated samples will be collected per day using a three man field crew (one of which is the FOL). This will include mobilization, demobilization, decontamination, and preparation of the samples for shipment.

**Subtask 22.1.2, Groundwater Sampling** Up to 80 borings locations will be installed at OU 3 using the Aquaprobe/hollow stem auger (HSA) method. An estimated 30 boring locations will be installed at Site 7 and 50 boring locations will be installed at Site 8. Approximately five groundwater samples will be collected at each location (one every 20 feet to a maximum depth of 100 feet below land surface [bls]). An onsite laboratory will use modified USEPA 8010, 8020, and TPH methods to determine the contaminant concentration in each sample. Ten percent (approximately 40 samples) of the groundwater samples will be sent to an off site laboratory for complete target compound list (TCL) and target analyte list (TAL) analyses. A total of 14 QA/QC samples will be collected (12 equipment rinsates and 2 source banks).

A total of eight shallow piezometers will be installed at OU 3 (three piezometers at Site 7 and five piezometers at Site 8). Seven borings will be installed for lithologic control (three will be installed at Site 7 and four at Site 8). The lithologic borings will be continuously split-spoon sampled to a depth of approximately 100 feet bls. Detailed lithologic logs of all aquaprobe borings and lithologic borings will be completed and entered into an electronic database in preparation for lithologic description (logs) in the RI/FS report and for transmittal to the U.S. Geological Survey (USGS).

LOE for this subtask has been estimated assuming 2 days will be needed to complete one aquaprobe boring to a depth of 100 feet using a three man team. This will include mobilization, demobilization, decontamination, management of purge water and cuttings, and preparation of the samples for shipment.

**Subtask 22.1.3, Surface Runoff and Sediment Sampling** A total of 13 surface runoff, material carried away from the site by stormwater runoff, and sediment samples will be collected at OU 3. Seven samples will be collected from Site 7 and four samples will be collected from Site 8. Two additional samples will be collected by the FOL as needed to define, clarify, or support field operations. Ten QA/QC samples will be collected (two duplicates, two matrix spikes, two matrix spike duplicates, two equipment rinsates, and two source blanks).

LOE for this task has been estimated assuming a three person field crew will collect five surface soil and sediment samples per day (including mobilization, demobilization, packing and shipping, decontamination, and sample preparation).

**Subtask 22.1.4, Surface Soil Screening** A total of 140 surface screening soil samples will be collected from OU 3; 70 samples from each of the two sites. These samples will be sent to an onsite laboratory for modified USEPA methods 8010 and 8020 and total petroleum hydrocarbons (TPH) analyses. An estimated six split samples (two split samples per 10 day shift) will be sent to an off-site laboratory for TAL and TCL analysis. A total of 12 QA/QC samples will be collected (8 equipment rinsate and 4 source blank samples).

LOE for this task has been estimated assuming a three person field crew and the collection of five surface soil samples per day (including mobilization, demobilization, transport to the onsite laboratory, packing and shipping to an off site laboratory, decontamination, and sample preparation).

**Subtask 22.1.5, Analyses and Data Management** Appendix C tables 1 and 2 defines the samples to be collected from OU 3 and the associated offsite analysis. The remaining surface soil screening samples from Site 7 and all surface soil samples collected from Site 8 will be submitted for TPH analysis and for analysis by modified USEPA Methods 8010 and 8020 to be performed by an onsite laboratory. Sample-specific analytical requirements are presented in the Field Screening Workplan for OUs 3, 4, 5, and 6.

Samples collected for level "D" DQO will be validated, in accordance with 1991 USEPA functional guidelines, by a subcontractor. LOE for data management is estimated at 1.5 hours per sample. This includes contract oversight, quality control checking of approximately 5 per cent of the validated data, imputing the data into the Electronic Data Screening (EDS) computer program, and preparing the data for final distribution.

Toxicity Characteristic Leaching Procedure (TCLP) samples will also be collected during the field program. These samples will support an evaluation of offsite disposal options, to be completed during the FS, for materials encountered. A total of 10 TCLP samples are planned for the confirmatory field

program. TCLP samples will be collected at the discretion of the FOL and distributed among the four OUs.

**Subtask 22.2, Initial investigation for OU 4** OU 4, Site 10, is a 6.5-acre rubble disposal area. The initial investigative field program is designed to determine if contamination is a problem at this site. The initial investigative field program for OU 4 has been divided into the following subtasks:

- Subtask 22.2.1, Subsurface Soil Sampling;
- Subtask 22.2.2, Monitoring Well Installation;
- Subtask 22.2.3, Groundwater Sampling;
- Subtask 22.2.4, Surface Soil and Sediment Sampling; and
- Subtask 22.2.5, Analyses and Data Management.

**Subtask 22.2.1, Subsurface Soil Sampling** A total of 12 subsurface soils samples will be collected during monitoring well installation at OU 4 to support characterizations of the nature and extent of contamination. Ten QA/QC samples will be collected (two duplicates, one matrix spike, one matrix spike duplicate, and six equipment rinsates). Additionally, two vadose zone samples will be collected for geotechnical analysis.

LOE for this subtask has been estimated assuming 8 hours per boring for input of boring log data, sample collection, equipment cleaning, and preparation of samples for shipment.

**Subtask 22.2.2, Monitoring Well Installation** A total of 12 shallow groundwater monitoring wells will be installed. The wells will be constructed of 2-inch inner diameter polyvinyl chloride (PVC) and screened from 5 to 15 feet bls. One soil sample will be collected from the screened interval of each of the monitoring wells for geotechnical analysis. Each of the newly installed monitoring wells will be fully developed following installation. Detailed lithologic logs of all monitoring well borings will be completed and entered into an electronic database in preparation for inclusion of lithologic logs in the RI/FS report and for transmittal to the USGS.

Slug tests will be performed on six wells. Slug test data will be downloaded into the appropriate software program for manipulation and development of documentation for incorporation in the RI/FS report.

LOE for this task has been estimated assuming a three-person crew and that two shallow monitoring wells can be installed in 1 day (with mobilization, demobilization, 4 hours of well development, and decontamination included).

**Subtask 22.2.3, Groundwater Sampling** Groundwater samples will be collected from each of the 12 newly installed monitoring wells. Eight QA/QC samples will be collected (two duplicates, one matrix spike, one matrix spike duplicate, and four equipment rinsates).

LOE for this subtask has been estimated assuming a three-person field crew and that two monitoring wells can be sampled per day (including mobilization, demobilization, decontamination, management of purge water, and preparation of the samples for shipment).

**Subtask 22.2.4, Surface Soil and Sediment Sampling** A total of 12 surface soil samples will be collected from Site 10. Two additional samples may be collected by the FOL as needed to define, clarify, or support field operations. Four additional surface soil or sediment samples will be collected

from the western perimeter of Site 10. Nine QA/QC samples will be collected (two duplicates, one matrix spike, one matrix spike duplicate, four equipment rinsates, and one source blank).

LOE for this task has been estimated assuming a three-person field crew and the collection of five surface soil samples per day (including mobilization, demobilization, decontamination, and sample preparation).

**Subtask 22.2.5, Analyses and Data Management** All soil samples collected from OU 4 will be submitted for full TCL (volatiles, semivolatiles, pesticides, and PCBs) and TAL metals analyses. Tables 1 and 2 of Appendix C list the samples to be collected at OU 4 and the associated analyses. Analysis of TCL and TAL parameters for sediment samples may require lower detection limits than TCL and TAL analysis for soil and groundwater. Cost for lower detection limits were not included in this POA. Sample-specific analytical requirements are presented in the Field Screening Workplan for OUs 3, 4, 5, and 6.

Data management includes validating level "D" DQO data, checking for consistency of data format, computer data management, and data manipulation as needed for reviewers. LOE for data management is estimated at 1.5 hours per sample. This includes contract oversight, quality checking of approximately 5 per cent of the validated data, inputing the data into the EDS computer program, and preparing the data for final distribution as needed by reviewers.

**Subtask 22.3, Initial investigation for OU 5** OU 5 consists of two ordnance disposal areas with a total of 14.5 acres. The initial investigative field program for OU 5, consisting of Sites 14 and 15, has been divided into the following subtasks:

- Subtask 22.3.1, Soil Sampling;
- Subtask 22.3.2, Monitoring Well Installation;
- Subtask 22.3.3, Groundwater Sampling;
- Subtask 22.3.4, Surface Water and Sediment Sampling;
- Subtask 22.3.5, Surface Soil Sampling; and
- Subtask 22.3.6, Analyses and Data Management.

**Subtask 22.3.1, Soil Sampling** A total of 12 subsurface soil samples, 7 at Site 14 and 5 at Site 15, will be completed at OU 5 to support characterizations of the nature and extent of contamination. These samples will be collected during the installation of monitoring wells. Thirteen QA/QC samples will be collected from both Site 14 and Site 15 (two duplicates, two matrix spikes, two matrix spike duplicates, six equipment rinsates, and one source blank). Additionally, two vadose zone samples (from above the water table) will be collected from each site for geotechnical analysis. One soil sample will be collected from each screen interval of each monitoring well for technical analysis.

LOE for this subtask has been estimated assuming 8 hours per boring for the input of boring log data, sample collection, equipment cleaning, and preparation of samples for shipment.

**Subtask 22.3.2, Monitoring Well Installation** A total of 12 shallow groundwater monitoring wells, 7 at Site 14 and 5 at Site 15, will be installed. The wells will be constructed of 2-inch inner diameter PVC and screened from 5 to 15 bls. Each of the newly installed monitoring wells will be fully developed following installation. Detailed lithologic logs of all monitoring well borings will be completed and entered into an electronic database in preparation for inclusion of lithologic logs in the RI/FS report and for transmittal to the USGS.

Slug tests will be performed on six wells. Slug test data will be downloaded into the appropriate software program for manipulation and development of documentation for incorporation into the RI/FS report.

LOE for this task has been estimated assuming a three-person crew and that two shallow monitoring wells can be installed in 1 day (with mobilization, demobilization, 4 hours of well development, and decontamination included).

**Subtask 22.3.3, Groundwater Sampling** Groundwater samples, seven from Site 14 and five from Site 15, will be collected from each of the 12 newly installed monitoring wells. Eleven QA/QC samples will be collected from both Site 14 and Site 15 (two duplicates, two matrix spikes, two matrix spike duplicates, four equipment rinsates, and one source blank).

LOE for this subtask has been estimated assuming a three-person field crew and that two monitoring wells can be sampled per day (including mobilization, demobilization, decontamination, management of purge water, and preparation of the samples for shipment).

**Subtask 22.3.4, Surface Water and Sediment Sampling** Five surface water and five sediment sample sets will be collected from the drainage ditches around the perimeter of Site 14. Nine QA/QC samples will be collected (two duplicates, two matrix spikes, two matrix spike duplicates, two equipment rinsates, and one source blank).

LOE for this task has been estimated assuming a three-person field crew and an average of 3 hours to collect a set of surface water and sediment samples and prepare them for shipment.

**Subtask 22.3.5, Surface Soil Sampling** Fifty-six surface soil samples are planed for OU 5. Twenty-three surface soil samples will be collected from Site 14 and 33 surface soil samples will be collected from Site 15. An additional six surface soil samples will be collected by the FOL as needed to define, clarify, or support field operations. Twenty-eight QA/QC samples will be collected (7 duplicates, 4 matrix spikes, 4 matrix spike duplicates, 11 equipment rinsates, and 2 source blanks).

LOE for this task has been estimated assuming a three-person field crew and the collection of five surface soil samples per day (including mobilization, demobilization, decontamination, and sample preparation).

**Subtask 22.3.6, Analyses and Data Management** All of the surface soil samples collected from Site 14 will be analyzed for full TCL, TAL metals, and USEPA Method 8330 analytes. Twenty-three of the samples collected from Site 15 will be analyzed for TCL semivolatile organic aromatics (SVOAs), TAL metals, and USEPA Method 8330 following Naval Energy and Environmental Support Activity (NEESA) Level C DQOs. Ten samples will be analyzed for full TCL parameters, TAL metals, and USEPA Method 8330 following NEESA Level D DQOs. All subsurface soil samples collected from Site 14 will be analyzed for full TCL parameters and TAL metals and explosive compounds (USEPA Method 8330). Analysis of TCL and TAL parameters for surface water and sediment samples may require lower detection limits than TCL and TAL analysis for soil and groundwater. Sample-specific analytical requirements are presented in the Field Screening Workplan for OUs 3, 4, 5, and 6 and summarized in Tables 1 and 2 of Appendix C.

Data management includes validating level "D" DQO data, checking for consistency of data format, computer data management, and data manipulation as needed for reviewers. LOE for data management is estimated at 1.5 hours per sample. This includes contract oversight, quality checking of approximately

5 per cent of the validated data, inputing the data into the EDS computer program, and preparing the data for final distribution as needed by reviewers.

Subtask 22.4, Initial investigation for OU 6 OU 6, Site 11, is a pesticide disposal area. Table 3 of Appendix C is a summary of the LOE for initial investigation as defined in the Field Screening Workplan for OUs 3, 4, 5, and 6. The initial investigative field program for OU 6 has been divided into the following subtasks:

- Subtask 22.4.1, Surface Soil Sampling;
- Subtask 22.4.2, Monitoring Well Installation;
- Subtask 22.4.3, Groundwater Sampling;
- Subtask 22.4.4, Analyses and Data Management.

**Subtask 22.4.1, Surface Soil Sampling** A total of 16 soil samples will be collected from OU 6. A composite of four samples will be collected at each of 12 grid (50 by 50 foot grid) locations. Four uncomposited surface soil samples will also be collected. A total of seven QA/QC samples will be collected (two duplicates, one matrix spike, one matrix spike duplicate, two equipment rinsates, and one source blank). Two vadose zone samples will be collected for geotechnical analysis.

LOE for this subtask assumes four composite sets can be completed each day by a three-person field crew.

**Subtask 22.4.2, Monitoring Well Installation** Because of the dangers associated with some of the pesticides believed to be present at this site, all drilling will be performed in level "B" personal protective equipment. This will increase the time and cost required to install these wells. A total of eight shallow monitoring wells will be installed. The wells will be constructed of 2 inch inner diameter PVC and screened across the water table (about 5 to 15 feet bls). Each newly installed monitoring well will be fully developed following installation. Detailed lithologic logs of all soil borings will be completed for the RI/FS report and for transmittal to the USGS.

Slug tests will be performed on four wells. Slug test data will be downloaded into the appropriate software program for manipulation and development of documentation for incorporation in the RI/FS report.

LOE for this subtask assumes one monitoring well can be installed each day with a four-man field crew working in level "B" equipment.

**Subtask 22.4.3, Groundwater Sampling** Groundwater samples will be collected from each of the eight newly installed monitoring wells. Seven QA/QC samples will be collected (one duplicate, one matrix spike, one matrix spike duplicate, and four equipment rinsates).

LOE for this subtask has been estimated assuming a three-person field crew and that two monitoring wells can be sampled per day (including mobilization, demobilization, decontamination, management of purge water, and preparation of the samples for shipment).

**Subtask 22.4.4, Analyses and Data Management** All groundwater and subsurface soil samples collected from OU 5 will be analyzed for full TCL parameters, TAL metals, and USEPA Methods 8140, 8150, and 8010. The composite soil samples will be analyzed for USEPA Methods 8250 (or 8270), 8150, and 8140 and 1,2-dibromo-3-chloropropane (Nemagon™). Sample-specific analytical requirements

are presented in the Field Screening Workplan for OUs 3, 4, 5, and 6 and Tables 1 and 2 of Appendix C are summaries.

Data management includes validating level "D" DQO data, checking for consistency of data format, computer data management, and data manipulation as needed for reviewers. LOE for data management is estimated at 1.5 hours per sample. This includes contract oversight, quality checking of approximately 5 per cent of the validated data, inputing the data into the EDS computer program, and preparing the data for final distribution as needed by reviewers.

**TASK 23, TECHNICAL MEMORANDA**. A technical memorandum will be prepared for each operable unit. The technical memoranda will finalize the rationale and sampling locations for the confirmational program to be completed in support of the RI/FS for OUs 3, 4, 5, and 6 pursuant to the SOW 077 modification.

**Subtask 23.1, Technical Memorandum for OU 3** The finalization of the confirmational sampling program, via technical memorandum, has been divided into the following subtasks:

- Subtask 23.1.1, Interpretation of Data;
- Subtask 23.1.2, Proposed Confirmational Sampling Program;
- Subtask 23.1.3, Response to Comments; and
- Subtask 23.1.4, Final Document Preparation.

**Subtask 23.1.1, Interpretation of Data** The data collected during the field screening program for OU 3 will be evaluated. A brief background of the sampling program will be provided and the results will be summarized. Appropriate graphics will be developed to visually depict site information on which the sampling locations for each site are based.

**Subtask 23.1.2, Proposed Confirmational Sampling Program** Based on the analysis of data completed under Subtask 23.1.1, a confirmational sampling program will be proposed. The type of samples, locations, and QA/QC procedures will be addressed.

**Subtask 23.1.3, Response to Comments** Comments received from the Navy and regulatory agencies will be addressed and incorporated into the final document. The LOE assumes that:

- revisions are limited to editorial or stylistic changes or clarification of scope, analysis, evaluation, recommendations, or policy (e.g., major rewrite is not anticipated);
- no meetings will be required with the Navy; and
- receipt of additional comments after start of the subtask will require an evaluation of resources (LOE) and schedule compliance and will be the basis for cost growth and schedule exclusion.

**Subtask 23.1.4, Final Document Preparation** The final document will require incorporation of comments and any additional changes based on technical review. The document will be produced and distributed to recipients specified by the Navy.

**Subtask 23.2, Technical Memorandum for OU 4** The scope of this subtask will follow the same steps and have the same LOE as those outlined in subtask 23.1.1 through 23.1.4.

**Subtask 23.3, Technical Memorandum for OU 5** The scope of this subtask will follow the same steps and have the same LOE as those outlined in subtask 23.1.1 through 23.1.4.

**Subtask 23.4, Technical Memorandum for OU 6** The scope of this subtask will follow the same steps and have the same LOE as those outlined in subtask 23.1.1 through 23.1.4.

**TASK 24, COST BENEFIT ANALYSIS OF THE USE OF A FIELD LABORATORY VERSUS THE USE OF A FIELD GAS CHROMATOGRAPH (GC).** A cost benefit analysis will compare the cost of using an onsite laboratory as opposed to using a field GC. In addition, the option of sending screening samples to an offsite laboratory will be considered in the cost benefit analysis. The analysis will consider the costs associated with each option, accuracy of the data, detection limits, types of analysis needed, and the turnaround time offered by each option. The benefits of each option will be balanced against the costs to determine the preferred method of sample analysis. A report summarizing the rationale and methodology used will be prepared.

**TASK 25, INTERIM REMEDIAL ACTION, POTENTIAL SOURCE OF CONTAMINATION (PSC) 5.** The SOW 077 modification (Section 13.1, Task 29) indicates that an interim remedial action shall be performed at Site 5. Interim remedial action at Site 5 will consist of free product removal and/or soil removal. Task 25 provides a description of the Remedial Action Plan (RAP) and outlines the steps that must be followed for preparing such a plan. A RAP consists of five separate parts: (1) a Focused Feasibility Study (FFS), (2) a proposed plan (PP), (3) a responsiveness summary, (4) an Interim Record of Decision (IROD), and (5) plans, specifications, and cost estimates. Guidance for preparing the above documents has been provided by the USEPA. The estimated LOE for completing Tasks 25 and 26 are based on LOE data obtained during implementation of CTO-090.

The RAP requested in Task 29 of the SOW will conform to the outlines provided in the USEPA guidance documents. The following subtasks discuss the steps that will be followed.

**Subtask 25.1, Conduct a Focused Feasibility Study (FFS)** The FFS identifies and evaluates a limited number of potential remedial alternatives and develops estimated implementation costs for the alternatives. The rationale and basis for selecting a specific remedial action is established during the FFS process.

**Subtask 25.1.1, Site Characterization** This section of the FFS presents the site history and description, including the location of the site, the current physical condition of the site, and the previous uses of the site. In addition, previous investigations are summarized and the results are presented.

**Subtask 25.1.2, Identification of Remedial Action Objectives** This section of the FFS report requires that a determination be made as to the purpose and scope of any proposed remedial alternative (e.g., whether all contaminated soils should be excavated and removed as part of the remedial action). The scope of the remedial action will be determined, to a large extent, through the identification of the principal threats that must be addressed. Associated with the threats, identification of Applicable or Relevant and Appropriate Requirements (ARARs) may impact the types of remedial alternatives that will be considered. Both chemical-specific and location-specific ARARs will be identified as part of this task. USEPA guidance indicates that remedial actions should meet ARARs to the extent practicable.

Additionally, the ARARs database will be employed when selecting the remedial alternative that best meets the objective for the site.

Finally in this section, a general project schedule will be developed. The schedule will incorporate time, regulatory, and operational constraints. The actual schedule for the remedial action will be proposed as part of the development of engineering plans and specifications (Subtask 25.5 below); however, identified constraints must be considered when evaluating the remedial alternatives.

**Subtask 25.1.3, Identification of Remedial Action Alternatives** As part of this subtask, screening of a limited number of alternatives will be conducted to identify those that would be appropriate for use in a remedial action at PSC 5. As part of this screening process, consideration will be given to:

- specific methodology (technology) employed,
- equipment required (type and amount),
- personnel required (number and training),
- availability of services (e.g., hazardous waste incineration) in the region, and
- byproducts generated by the alternatives.

Upon completion of the screening process, one to three appropriate alternatives will be selected for further detailed evaluation and consideration. The alternatives selected will be consistent with the remedial action objectives identified.

**Subtask 25.1.4, Detailed Analysis of Remedial Alternatives** A limited number of alternatives will be identified as potentially feasible and will be evaluated individually based on their effectiveness, implementability, and projected cost. The effectiveness criteria considers such factors as:

- how protective it is of the surrounding population and onsite workers,
- to what extent the alternative reduces or mitigates the identified threats,
- how well it meets the remedial action objectives,
- how well it complies with the ARARs, and
- whether the alternative creates potential adverse environmental impacts.

The implementability criteria evaluates how difficult it is to undertake the alternative and the likelihood of public and regulatory acceptance. Also as part of this subtask, action-specific ARARs will be identified as appropriate and the alternative will be evaluated on how well it complies with these ARARs. In addition, if there are physical or environmental constraints that impact the use of the alternative, these will be considered during this evaluation.

The final criteria that will be used in the analysis is the projected cost for implementing the alternative. Because costs can have a major impact on any program, it is important to spend the effort to develop costs ranges that will be reflective of those anticipated during actual implementation. Thus, a conceptual design (30 percent design) may be completed for each alternative evaluated to effectively compare costs between alternatives. Detailed cost estimates will be completed only for the remedial action alternative finally selected for PSC 5.

**Subtask 25.1.5, Comparative Analysis And Selection of Alternative** Qualitative assessment of strengths and weaknesses will be used for comparing the appropriate remedial action alternatives. The final step in the FFS process is the selection of the proposed remedial action. The selection is based on the comparison made between alternatives. Because the public has the opportunity to review and

comment on the selection, a decision tree will be developed that summarizes the findings from the analysis of alternatives. This should more clearly depict why a certain alternative was selected over the other(s).

**Subtask 25.1.6, Draft FFS Report Development** An FFS report will be prepared that summarizes and documents the steps taken in selecting the proposed remedial action alternative. The report will be prepared in draft form for initial submittal for Navy review. After review by the Navy and response to their comments, a final draft FFS report will be submitted to the Navy and those agencies and persons identified in SOW 077 under Task 19. Based on the information provided, 30 copies of the final draft have been budgeted for distribution.

**Subtask 25.1.7, Final FFS Report Development** After receipt of the regulatory comments, the final FFS report will be prepared and released for public review and comment (as required under the USEPA guidance). The LOE assumes that all agency comments will be timely and will not impact the production of the final FFS report. In addition to those for the public, copies of the final FFS report will be submitted to those identified under Task 19 in SOW No. 077. Thirty copies of the final FFS report have been budgeted for distribution.

**Subtask 25.2, Proposed Plan (PP)** ABB-ES will prepare a PP in the fact sheet format. Chapters 2, 3, and 9 of the *Interim Final Guidance on Preparing Superfund Decision Documents* (Office of Solid Waste and Emergency Response [OSWER] Directive 9335.3-02, November 1989, EPA/540/6-89/007) will be used as guidance. Section 117(a) of the CERCLA of 1980, as amended by the SARA of 1986, requires preparation of PPs as part of the site remediation process. The PP will be prepared after the FFS is completed and will be made available with the FFS to the public for comments. The PP highlights key aspects of the FFS, provides a brief analysis of remedial alternatives under consideration, identifies the preferred alternative, and provides members of the public with information on how they can participate in the remedy selection process. A notice and brief analysis of the PP will be published in a major local newspaper of general circulation. In addition, the PP, the FFS, and the other contents of the administrative record will be made available to the information repository near the site.

**Subtask 25.3, Responsiveness Summary** As indicated above, the FFS must be made available for public review and comment. Available guidance specifies that the review and comment period should be 30 days after which a responsiveness summary is prepared. The responsiveness summary is a written response to significant comments made by the public. This written response becomes an attachment to the FFS, which in turn is an attachment to the IROD. A draft responsiveness summary will be prepared and submitted to the Navy for review and comment. Following response to Navy comments, a final responsiveness summary will be prepared and submitted to the regulatory agencies. Thirty copies of the responsiveness summary have been budgeted for distribution.

**Subtask 25.4, Develop An Interim Record of Decision (IROD)** The IROD provides a concise written record of the decision process used in selecting a remedial action. It describes the site's history, current activities, and the health and environmental threats and outlines the proposed actions and costs. Specifically, the IROD documents the need for the remedial action, demonstrates that it was done in accordance with CERCLA requirements, and substantiates that it is not inconsistent with the National Oil and Hazardous Substances Contingency Plan (NCP). As such, the IROD serves as the primary decision document for a remedial process and becomes a significant part of the administrative record for a site or a facility. Under CERCLA, the IROD must be submitted and accepted by all parties before the initiation of any onsite remedial activity.

The development of an IROD has been divided into the following subtasks:

- Subtask 25.4.1, Prepare Draft IROD and
- Subtask 25.4.2, Prepare Final IROD.

**Subtask 25.4.1, Prepare Draft IROD** The USEPA guidance provides a recommended outline, which will be followed when preparing the IROD. An IROD will be prepared in draft form for submittal to the Navy for review and comment. Upon receipt of the Navy's comments, a final draft IROD will be completed and submitted to the regulatory agencies for their review and comment. Because the IROD reflects the information presented in the FFS, it is not anticipated that the regulatory agencies will have significant technical questions or comments on the final draft IROD. The only time when the IROD might differ from the FFS would be as a result of comments from the public. Thus, the IROD will reference the FFS and responsiveness summary where applicable. Thirty copies of the final draft IROD have been budgeted for distribution.

**Subtask 25.4.2, Prepare Final IROD** After receipt of comments from the regulatory agencies, a final IROD will be prepared. The LOE assumes that the comments will be presented in a timely manner and will not require significant changes from the final draft IROD. Thirty copies of the final IROD will be prepared for distribution as indicated in the SOW.

**Subtask 25.5, Plans and Specifications for Remedial Action at PSC 5** Using the conceptual design developed under the FFS as a basis for design, ABB-ES will prepare plans and specifications for the remedial action at Site 5. Under this subtask, ABB-ES will develop the following documents in support of the Site 5 remedial action bid documents:

- remedial action plans and specifications,
- detailed cost estimate, and
- generic remedial action schedule.

These documents will be prepared in accordance with the following standards:

> Department of Defense (DOD) MIL-HDBK-1006/1, *Policy and Procedures for Project Drawing and Specification Preparation*, August 1987;
>
> SOUTHNAVFACENGCOM P-141, *Guide for Architect-Engineer Firms Performing Services for the Southern Division, Naval Facilities Engineering Command*, June 1989; and
>
> Naval Facilities Engineering Command (NAVFACENGCOM) MO-327, *Facility Support Contract Quality Management Manual*, June 1989.

Submittals associated with this task include a 100 percent and final submission of the remedial action plans and specifications, detailed cost estimate, and generic remedial action schedule. To meet the deliverable dates of these documents, it is assumed there will be no significant change in the remedial action identified during the initial draft of the FFS that will cause redesign of the remedial action identified in the final IROD.

The design team will be led by the ABB-ES Tallahassee office and supported by the Arlington, VA, office. ABB-ES will conduct two project team meetings during the preparation of the above-specified

plans and specification documents, one in Tallahassee and one in Arlington. These meetings will support quality, coordination, and interaction of the multiple design documents.

The design drawings will be prepared using AutoCAD™, version 12. SOUTHNAVFACENGCOM will provide ABB-ES with the drawing numbers prior to the submittal of these drawings.

Construction cost estimates will be prepared and presented in tabular summary format with itemized labor, equipment, and material costs.

A generic schedule for the remedial action will be produced to support the remedial contracting effort. The time-based schedule will be presented within the specifications.

**TASK 26, INTERIM REMEDIAL ACTION, PSC 17**. The SOW 077 modification (Section 13.2, Task 30) indicates that an interim remedial action will be performed at Site 17. The interim remedial action will identify the most appropriate method for remediating the soils at Site 17. The scope of this work will follow the same steps and have the same LOE as those outlined in Subtasks 25.1 through 25.5 above.

## PROJECT PERSONNEL

Successful execution of this CTO will depend on key project team members to support the various elements of work to be executed. A short description of ABB-ES personnel roles and responsibilities follows.

Installation Manager. The Installation Manager, Rao Angara, will have authority and responsibility for the execution and overall performance of all work at NASCF. The Installation Manager will maintain liaison with responsible Navy representatives to ensure that priorities remain current and task order status is available.

Task Order Manager. The TOM (to be determined) will have authority and responsibility for the overall performance of specific tasks. All task work will follow existing program documentation and QA standards and procedures. The TOM will be responsible for coordination of project personnel and internal reviews and will evaluate deliverables prior to delivery to the Navy.

Technical Lead. The Technical Lead for the NASCF project, Al Stodghill, will be responsible for identification and oversight of the OUs 3, 4, 5, and 6 program objectives and will work closely with other project team members during execution of the project.

Quality Review Board. The Quality Review Board is considered an important integral part of ABB-ES' total approach to doing business. This Quality Review Board is composed of Willard Murray, overall Technical Director for the CLEAN program; Marland Dulaney, Senior Risk Assessment Reviewer; Geoff Shallard, Senior Engineer, who will support design efforts; and Dirk Brunner, P.E., will support review of the remedial investigation. The Quality Review Board provides many years of experience that will facilitate the RI and FS activities and will be integrated into the review process and provide for senior review of documents and deliverables while working closely with the Technical Lead and other team members as required.

Installation Technical Leader (ITL). Mr. Eric Blomberg will serve as the ITL for NAS Cecil Field. As the ITL, Mr. Blomberg will be responsible for the overall technical integrity of all environmental programs being conducted at this facility. He is responsible for coordination and continuity between the three major programs (Base Realignment and Closure [BRAC], Underground Storage Tank [UST], and IR) being conducted at NAS Cecil Field.

## SCHEDULES

Schedules for completion of tasks are provided in Appendix B. In preparing schedules for the draft POA, it was assumed that the notice to proceed (NTP) would be received January 17, 1994.

ABB-ES is committed to adjusting workloads and activity and labor resources to accommodate future regulatory dates, particularly those that will be cited in the Site Management Plan (SMP) for 1994.

The primary document schedule identified in this POA is based on the assumption that the USEPA and FDEP will not activate dispute resolution following receipt of a final draft report. Therefore, at the end of a 30-calendar-day comment period, ABB-ES will be notified by the Navy to proceed to issue the final report within the 15 calendar days specified in the SOW. If either one of the agencies disputes the final draft report, then a longer period (e.g., 60 days) after notification by the Naval Remedial Project Manager (NRPM) may be required to revise the report in accordance with the dispute resolution.

Schedules presented for the two removal actions (POA Tasks 25 and 26) assume that USEPA and FDEP do not consider the deliverables (FFS, and design plans and specifications) to be primary documents. This assumption is consistent with the role of the Navy as the lead agency, as all parties will be given an opportunity for review during the 30-day public comment period. If the Navy wishes to consider these documents similar to RI/FS, Record of Decision (ROD), and remediation design plans and specifications, then the reporting schedule and deliverables must be modified to provide the required final draft and final documents as specified in the FFA.

# APPENDIX A

# COST SUMMARY

## CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, the cost or pricing data (as defined in Section 15.801 of the Federal Acquisition Regulation (FAR) and required under FAR Subsection 15.804-2) submitted, either actually or by specific identification in writing, to the Contracting Officer or the Contracting Officer's representative in support of the **Modification to CTO #090, for RI/FS Work Plans and Site Screening at OUs #3, #4, #5, and #6, Preparation of Technical Memoranda, and Remedial Actions at PSCs 5 and 22, NAS Cecil Field, FL** are accurate, complete, and current as of **12 January 1994**. This certification includes the cost or pricing data supporting any advance agreements and forward pricing rate agreements between the offeror and the Government that are part of the proposal.

**FIRM:** ABB ENVIRONMENTAL SERVICES, INC.

**NAME:** Raymond A. Allen, III

**TITLE:** PROGRAM MANAGER, NAVY CLEAN

**DATE:** 1-18-94

# ABB ENVIRONMENTAL SERVICES, INC.
# TOTAL COST SUMMARY – FINAL

**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | 2880 | $30.83 | $88,790.40 | 1.93 | $171,365.47 |
| Installation Manager | 2880 | $30.83 | $88,790.40 | 1.93 | $171,365.47 |
| Quality Assurance Manager | 64 | $30.83 | $1,973.12 | 2.38 | $4,696.03 |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | 194 | $25.81 | $5,007.14 | 2.38 | $11,916.99 |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | 473 | $40.28 | $19,052.44 | 2.38 | $45,344.81 |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | 64 | $29.66 | $1,898.24 | 1.93 | $3,663.60 |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | 48 | $29.66 | $1,423.68 | 2.38 | $3,388.36 |
| Senior Scientist | 2880 | $29.66 | $85,420.80 | 1.93 | $164,862.14 |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 300 | $24.64 | $7,392.00 | 2.38 | $17,592.96 |
| Senior Engineer | 602 | $24.64 | $14,833.28 | 1.93 | $28,628.23 |
| Senior Scientist | 4248 | $24.64 | $104,670.72 | 1.93 | $202,014.49 |
| Senior Scientist – Offsite | 170 | $24.64 | $4,188.80 | 2.38 | $9,969.34 |
| Senior Chemist | 666 | $24.64 | $16,410.24 | 1.93 | $31,671.76 |
| Senior Hydrologist | 2818 | $24.64 | $69,435.52 | 1.93 | $134,010.55 |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | 1192 | $19.41 | $23,136.72 | 1.93 | $44,653.87 |
| Engineer – Offsite | 1128 | $19.41 | $21,894.48 | 2.38 | $52,108.86 |
| Geologist | 2674 | $19.41 | $51,902.34 | 1.93 | $100,171.52 |
| Hydrologist | 986 | $19.41 | $19,138.26 | 1.93 | $36,936.84 |
| Toxicologist – Offsite | 306 | $19.41 | $5,939.46 | 2.38 | $14,135.91 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | 308 | $19.28 | $5,938.24 | 1.93 | $11,460.80 |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | 720 | $14.25 | $10,260.00 | 2.38 | $24,418.80 |
| Community Relations Specialist | 720 | $14.25 | $10,260.00 | 2.38 | $24,418.80 |
| Technician | 2460 | $14.25 | $35,055.00 | 1.93 | $67,656.15 |
| Technical Editor | 92 | $14.25 | $1,311.00 | 1.93 | $2,530.23 |
| **Technician** | | | | | |
| Project Assistant | 2160 | $11.59 | $25,034.40 | 1.93 | $48,316.39 |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | 304 | $11.05 | $3,359.20 | 1.93 | $6,483.26 |
| **Subtotal:** | 31337 | | $722,515.88 | | $1,433,781.65 |
| Labor Escalation – Management/Administrative: | | | $359,343.96 | 1.051 | $377,670.50 |
| Labor Escalation – Technical/Professional: | | | $1,067,954.43 | 1.054 | $1,125,623.97 |
| Labor Escalation – Clerical: | | | $6,483.26 | 1.044 | $6,768.52 |
| **TOTAL LABOR:** | | | $1,433,781.65 | | $1,510,063.00 |

# ABB ENVIRONMENTAL SERVICES, INC.
# TOTAL COST SUMMARY – FINAL

**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | 19 | various | $11,180.00 | 1.02 | $11,403.60 |
| Lodging | 465 | various | $24,047.00 | 1.02 | $24,527.94 |
| Per Diem | 560 | various | $16,710.00 | 1.02 | $17,044.20 |
| Car Rental/Fuel | 292 | $50.00 | $14,600.00 | 1.02 | $14,892.00 |
| Field Van Rental/Fuel | 226 | $80.00 | $18,080.00 | 1.02 | $18,441.60 |
| **TOTAL TRAVEL:** | | | | | $86,309.34 |
| Telephone/Telefax: | | $2.20 | $3,146.00 | 1.02 | $3,208.92 |
| Shipping – Letter/Other | | | $2,936.25 | 1.02 | $2,994.98 |
| Shipping – Sample Cooler | | | $21,100.00 | 1.02 | $21,522.00 |
| Expendable Supplies | | | $27,352.80 | 1.02 | $27,899.86 |
| Other | | | $626.50 | 1.02 | $639.03 |
| Other | | | $74.00 | 1.02 | $75.48 |
| Other | | | $210.00 | 1.02 | $214.20 |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $56,554.46 |
| Drilling Services | | | $338,780.00 | 1.02 | $345,555.60 |
| Analytical Services | | | $789,771.00 | 1.02 | $805,566.42 |
| Surveying Services | | | $21,899.00 | 1.02 | $22,336.98 |
| Data Validation Services | | | $50,440.00 | 1.02 | $51,448.80 |
| Reproduction | | | $1,332.00 | 1.02 | $1,358.64 |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | $135,533.00 | 1.02 | $138,243.66 |
| Other | | | $100,000.00 | 1.02 | $102,000.00 |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $1,466,510.10 |
| **TOTAL COST:** | | | | | $3,119,436.90 |
| Award Fee – Labor, Travel & ODCs | | | $1,652,926.80 | 0.1 | $165,292.68 |
| Award Fee – Subcontract | | | $1,466,510.10 | 0.045 | $65,992.95 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $3,350,722.53 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 1B – Project Management – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | 2880 | $30.83 | $88,790.40 | 1.93 | $171,365.47 |
| Installation Manager | 2880 | $30.83 | $88,790.40 | 1.93 | $171,365.47 |
| Quality Assurance Manager | 64 | $30.83 | $1,973.12 | 2.38 | $4,696.03 |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | 194 | $25.81 | $5,007.14 | 2.38 | $11,916.99 |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | 345 | $40.28 | $13,896.60 | 2.38 | $33,073.91 |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | 64 | $29.66 | $1,898.24 | 1.93 | $3,663.60 |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | | $29.66 | | 2.38 | |
| Senior Scientist | 2880 | $29.66 | $85,420.80 | 1.93 | $164,862.14 |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | | $24.64 | | 2.38 | |
| Senior Engineer | | $24.64 | | 1.93 | |
| Senior Scientist | 2880 | $24.64 | $70,963.20 | 1.93 | $136,958.98 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | | $24.64 | | 1.93 | |
| Senior Hydrologist | | $24.64 | | 1.93 | |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | | $19.41 | | 1.93 | |
| Engineer – Offsite | | $19.41 | | 2.38 | |
| Geologist | | $19.41 | | 1.93 | |
| Hydrologist | | $19.41 | | 1.93 | |
| Toxicologist – Offsite | | $19.41 | | 2.38 | |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | | $19.28 | | 1.93 | |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | 720 | $14.25 | $10,260.00 | 2.38 | $24,418.80 |
| Community Relations Specialist | 720 | $14.25 | $10,260.00 | 2.38 | $24,418.80 |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | | $14.25 | | 1.93 | |
| **Technician** | | | | | |
| Project Assistant | 2160 | $11.59 | $25,034.40 | 1.93 | $48,316.39 |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | | $11.05 | | 1.93 | |
| **Subtotal:** | 15787 | | $402,294.30 | | $795,056.59 |
| Labor Escalation – Management/Administrative: | | | $359,343.96 | 1.051 | $377,670.50 |
| Labor Escalation – Technical/Professional: | | | $435,712.62 | 1.054 | $459,241.10 |
| Labor Escalation – Clerical: | | | | 1.044 | |
| **TOTAL LABOR:** | | | $795,056.59 | | $836,911.61 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 1B – Project Management – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | | | | 1.02 | |
| Lodging | | | | 1.02 | |
| Per Diem | | | | 1.02 | |
| Car Rental/Fuel | | $50.00 | | 1.02 | |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | |
| Telephone/Telefax: | 520 | $2.20 | $1,144.00 | 1.02 | $1,166.88 |
| Shipping – Letter/Other | 60 | $6.75 | $405.00 | 1.02 | $413.10 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $1,579.98 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | | 1.02 | |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | | | | 1.02 | |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | |
| **TOTAL COST:** | | | | | $838,491.59 |
| Award Fee – Labor, Travel & ODCs | | | $838,491.59 | 0.1 | $83,849.16 |
| Award Fee – Subcontract | | | | 0.045 | |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $922,340.75 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 21 – RI/FS Work Plan Review for OUs 3, 4, 5, 6 & 7 – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | | $40.28 | | 2.38 | |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | | $29.66 | | 2.38 | |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 32 | $24.64 | $788.48 | 2.38 | $1,876.58 |
| Senior Engineer | 32 | $24.64 | $788.48 | 1.93 | $1,521.77 |
| Senior Scientist | 80 | $24.64 | $1,971.20 | 1.93 | $3,804.42 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | | $24.64 | | 1.93 | |
| Senior Hydrologist | | $24.64 | | 1.93 | |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | | $19.41 | | 1.93 | |
| Engineer – Offsite | | $19.41 | | 2.38 | |
| Geologist | | $19.41 | | 1.93 | |
| Hydrologist | 100 | $19.41 | $1,941.00 | 1.93 | $3,746.13 |
| Toxicologist – Offsite | 16 | $19.41 | $310.56 | 2.38 | $739.13 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | | $19.28 | | 1.93 | |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | | $14.25 | | 1.93 | |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | | $11.05 | | 1.93 | |
| **Subtotal:** | 260 | | $5,799.72 | | $11,688.03 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $11,688.03 | 1.054 | $12,319.18 |
| Labor Escalation – Clerical: | | | | 1.044 | |
| **TOTAL LABOR:** | | | $11,688.03 | | $12,319.18 |

## ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 21 – RI/FS Work Plan Review for OUs 3, 4, 5, 6 & 7 – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | 5 | various | $4,072.00 | 1.02 | $4,153.44 |
| Lodging | 7 | various | $427.00 | 1.02 | $435.54 |
| Per Diem | 14 | various | $420.00 | 1.02 | $428.40 |
| Car Rental/Fuel | 10 | $50.00 | $500.00 | 1.02 | $510.00 |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | $5,527.38 |
| Telephone/Telefax: | 60 | $2.20 | $132.00 | 1.02 | $134.64 |
| Shipping – Letter/Other | 12 | $6.75 | $81.00 | 1.02 | $82.62 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $217.26 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | | 1.02 | |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | | | | 1.02 | |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | $135,533.00 | 1.02 | $138,243.66 |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $138,243.66 |
| **TOTAL COST:** | | | | | $156,307.48 |
| Award Fee – Labor, Travel & ODCs | | | $18,063.82 | 0.1 | $1,806.38 |
| Award Fee – Subcontract | | | $138,243.66 | 0.045 | $6,220.96 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $164,334.83 |

## ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 22 – Site Screening @ OUs 3, 4, 5 and 6 – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | | $40.28 | | 2.38 | |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | | $29.66 | | 2.38 | |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 84 | $24.64 | $2,069.76 | 2.38 | $4,926.03 |
| Senior Engineer | | $24.64 | | 1.93 | |
| Senior Scientist | 744 | $24.64 | $18,332.16 | 1.93 | $35,381.07 |
| Senior Scientist – Offsite | 170 | $24.64 | $4,188.80 | 2.38 | $9,969.34 |
| Senior Chemist | 634 | $24.64 | $15,621.76 | 1.93 | $30,150.00 |
| Senior Hydrologist | 2730 | $24.64 | $67,267.20 | 1.93 | $129,825.70 |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | | $19.41 | | 1.93 | |
| Engineer – Offsite | | $19.41 | | 2.38 | |
| Geologist | 2426 | $19.41 | $47,088.66 | 1.93 | $90,881.11 |
| Hydrologist | | $19.41 | | 1.93 | |
| Toxicologist – Offsite | 150 | $19.41 | $2,911.50 | 2.38 | $6,929.37 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | | $19.28 | | 1.93 | |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | 2460 | $14.25 | $35,055.00 | 1.93 | $67,656.15 |
| Technical Editor | | $14.25 | | 1.93 | |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | | $11.05 | | 1.93 | |
| **Subtotal:** | 9398 | | $192,534.84 | | $375,718.77 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $375,718.77 | 1.054 | $396,007.58 |
| Labor Escalation – Clerical: | | | | 1.044 | |
| **TOTAL LABOR:** | | | $375,718.77 | | $396,007.58 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 22 – Site Screening @ OUs 3, 4, 5 and 6 – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | 4 | $672.00 | $2,688.00 | 1.02 | $2,741.76 |
| Lodging | 420 | $50.00 | $21,000.00 | 1.02 | $21,420.00 |
| Per Diem | 470 | $30.00 | $14,100.00 | 1.02 | $14,382.00 |
| Car Rental/Fuel | 226 | $50.00 | $11,300.00 | 1.02 | $11,526.00 |
| Field Van Rental/Fuel | 226 | $80.00 | $18,080.00 | 1.02 | $18,441.60 |
| **TOTAL TRAVEL:** | | | | | $68,511.36 |
| Telephone/Telefax: | 600 | $2.20 | $1,320.00 | 1.02 | $1,346.40 |
| Shipping – Letter/Other | 200 | $6.75 | $1,350.00 | 1.02 | $1,377.00 |
| Shipping – Sample Cooler | 211 | $100.00 | $21,100.00 | 1.02 | $21,522.00 |
| Expendable Supplies | 360 | $75.98 | $27,352.80 | 1.02 | $27,900.00 |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $52,145.40 |
| Drilling Services | | | $338,780.00 | 1.02 | $345,555.60 |
| Analytical Services | | | $775,571.00 | 1.02 | $791,082.42 |
| Surveying Services | | | $21,899.00 | 1.02 | $22,336.98 |
| Data Validation Services | | | $50,440.00 | 1.02 | $51,448.80 |
| Reproduction | | | | 1.02 | |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other – Ordnance Removal | | | $100,000.00 | 1.02 | $102,000.00 |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $1,312,423.80 |
| **TOTAL COST:** | | | | | $1,829,088.14 |
| Award Fee – Labor, Travel & ODCs | | | $516,664.34 | 0.1 | $51,666.43 |
| Award Fee – Subcontract | | | $1,312,423.80 | 0.045 | $59,059.07 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $1,939,814 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 23 – Technical Memoranda – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | 128 | $40.28 | $5,155.84 | 2.38 | $12,270.90 |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | | $29.66 | | 2.38 | |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 80 | $24.64 | $1,971.20 | 2.38 | $4,691.46 |
| Senior Engineer | 96 | $24.64 | $2,365.44 | 1.93 | $4,565.30 |
| Senior Scientist | 416 | $24.64 | $10,250.24 | 1.93 | $19,782.96 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | | $24.64 | | 1.93 | |
| Senior Hydrologist | | $24.64 | | 1.93 | |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | | $19.41 | | 1.93 | |
| Engineer – Offsite | | $19.41 | | 2.38 | |
| Geologist | 240 | $19.41 | $4,658.40 | 1.93 | $8,990.71 |
| Hydrologist | 672 | $19.41 | $13,043.52 | 1.93 | $25,173.99 |
| Toxicologist – Offsite | 48 | $19.41 | $931.68 | 2.38 | $2,217.40 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | 80 | $19.28 | $1,542.40 | 1.93 | $2,976.83 |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | 64 | $14.25 | $912.00 | 1.93 | $1,760.16 |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | 64 | $11.05 | $707.20 | 1.93 | $1,364.90 |
| **Subtotal:** | 1888 | | $41,537.92 | | $83,794.61 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $82,429.71 | 1.054 | $86,880.92 |
| Labor Escalation – Clerical: | | | $1,364.90 | 1.044 | $1,424.95 |
| **TOTAL LABOR:** | | | $83,794.61 | | $88,305.87 |

## ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 23 – Technical Memoranda – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | | | | 1.02 | |
| Lodging | 8 | $50.00 | $400.00 | 1.02 | $408.00 |
| Per Diem | 24 | $30.00 | $720.00 | 1.02 | $734.40 |
| Car Rental/Fuel | 12 | $50.00 | $600.00 | 1.02 | $612.00 |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | $1,754.40 |
| Telephone/Telefax: | 140 | $2.20 | $308.00 | 1.02 | $314.16 |
| Shipping – Letter/Other | 29 | $6.75 | $195.75 | 1.02 | $199.67 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $513.83 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | | 1.02 | |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | 3000 | $0.05 | $150.00 | 1.02 | $153.00 |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $153.00 |
| **TOTAL COST:** | | | | | $90,727.09 |
| Award Fee – Labor, Travel & ODCs | | | $90,574.09 | 0.1 | $9,057.41 |
| Award Fee – Subcontract | | | $153.00 | 0.045 | $6.89 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $99,791.39 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 24 – Cost Benefit Analysis – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | | $40.28 | | 2.38 | |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | | $29.66 | | 2.38 | |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | | $24.64 | | 2.38 | |
| Senior Engineer | | $24.64 | | 1.93 | |
| Senior Scientist | 40 | $24.64 | $985.60 | 1.93 | $1,902.21 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | 32 | $24.64 | $788.48 | 1.93 | $1,521.77 |
| Senior Hydrologist | | $24.64 | | 1.93 | |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | | $19.41 | | 1.93 | |
| Engineer – Offsite | | $19.41 | | 2.38 | |
| Geologist | 8 | $19.41 | $155.28 | 1.93 | $299.69 |
| Hydrologist | | $19.41 | | 1.93 | |
| Toxicologist – Offsite | | $19.41 | | 2.38 | |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | | $19.28 | | 1.93 | |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | | $14.25 | | 1.93 | |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | 8 | $11.05 | $88.40 | 1.93 | $170.61 |
| **Subtotal:** | 88 | | $2,017.76 | | $3,894.28 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $3,723.66 | 1.054 | $3,924.74 |
| Labor Escalation – Clerical: | | | $170.61 | 1.044 | $178.12 |
| **TOTAL LABOR:** | | | $3,894.28 | | $4,102.86 |

## ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 24 – Cost Benefit Analysis – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | | | | 1.02 | |
| Lodging | | | | 1.02 | |
| Per Diem | | | | 1.02 | |
| Car Rental/Fuel | | $50.00 | | 1.02 | |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | |
| Telephone/Telefax: | | $2.20 | | 1.02 | |
| Shipping – Letter/Other | 2 | $6.75 | $13.50 | 1.02 | $13.77 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $13.77 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | | 1.02 | |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | 200 | $0.05 | $10.00 | 1.02 | $10.20 |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $10.20 |
| **TOTAL COST:** | | | | | $4,126.83 |
| Award Fee – Labor, Travel & ODCs | | | $4,116.63 | 0.1 | $411.66 |
| Award Fee – Subcontract | | | $10.20 | 0.045 | $0.46 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $4,538.95 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 25 – PSC 5 Interim Remedial Action – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | | $40.28 | | 2.38 | |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | 24 | $29.66 | $711.84 | 2.38 | $1,694.18 |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 52 | $24.64 | $1,281.28 | 2.38 | $3,049.45 |
| Senior Engineer | 237 | $24.64 | $5,839.68 | 1.93 | $11,270.58 |
| Senior Scientist | 44 | $24.64 | $1,084.16 | 1.93 | $2,092.43 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | | $24.64 | | 1.93 | |
| Senior Hydrologist | 44 | $24.64 | $1,084.16 | 1.93 | $2,092.43 |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | 596 | $19.41 | $11,568.36 | 1.93 | $22,326.93 |
| Engineer – Offsite | 564 | $19.41 | $10,947.24 | 2.38 | $26,054.43 |
| Geologist | | $19.41 | | 1.93 | |
| Hydrologist | 107 | $19.41 | $2,076.87 | 1.93 | $4,008.36 |
| Toxicologist – Offsite | 46 | $19.41 | $892.86 | 2.38 | $2,125.01 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | 114 | $19.28 | $2,197.92 | 1.93 | $4,241.99 |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | 14 | $14.25 | $199.50 | 1.93 | $385.04 |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | 116 | $11.05 | $1,281.80 | 1.93 | $2,473.87 |
| **Subtotal:** | 1958 | | $39,165.67 | | $81,814.69 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $79,340.82 | 1.054 | $83,625.22 |
| Labor Escalation – Clerical: | | | $2,473.87 | 1.044 | $2,582.72 |
| **TOTAL LABOR:** | | | $81,814.69 | | $86,207.95 |

## ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 25 – PSC 5 Interim Remedial Action – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | 5 | various | $2,210.00 | 1.02 | $2,254.20 |
| Lodging | 17 | various | $1,210.00 | 1.02 | $1,234.20 |
| Per Diem | 26 | various | $808.00 | 1.02 | $824.16 |
| Car Rental/Fuel | 22 | $50.00 | $1,100.00 | 1.02 | $1,122.00 |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | $5,434.56 |
| Telephone/Telefax: | 55 | $2.20 | $121.00 | 1.02 | $123.42 |
| Shipping – Letter/Other | 66 | $6.75 | $445.50 | 1.02 | $454.41 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other – Binders | 35 | $8.95 | $313.25 | 1.02 | $319.52 |
| Other – Mylars | 10 | $3.70 | $37.00 | 1.02 | $37.74 |
| Other – Plans | 36 | various | $105.00 | 1.02 | $107.10 |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $1,042.19 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | $7,100.00 | 1.02 | $7,242.00 |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | 11720 | $0.05 | $586.00 | 1.02 | $597.72 |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $7,839.72 |
| **TOTAL COST:** | | | | | $100,524.41 |
| Award Fee – Labor, Travel & ODCs | | | $92,684.69 | 0.1 | $9,268.47 |
| Award Fee – Subcontract | | | $7,839.72 | 0.045 | $352.79 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $110,145.67 |

# ABB ENVIRONMENTAL SERVICES, INC.

**TASK: 26 – PSC 22 Remedial Action – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| **Senior Project Manager** | | | | | |
| Task Order Manager | | $30.83 | | 1.93 | |
| Installation Manager | | $30.83 | | 1.93 | |
| Quality Assurance Manager | | $30.83 | | 2.38 | |
| **Project Manager** | | | | | |
| Health & Safety Manager – Offsite | | $25.81 | | 2.38 | |
| **Senior Consulting Engineer/Scientist** | | | | | |
| Technical Expert – Offsite | | $40.28 | | 2.38 | |
| **Principal Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $29.66 | | 1.93 | |
| Senior Ecologist – Offsite | | $29.66 | | 2.38 | |
| Senior Engineer – Offsite | 24 | $29.66 | $711.84 | 2.38 | $1,694.18 |
| Senior Scientist | | $29.66 | | 1.93 | |
| **Senior Engineer/Scientist** | | | | | |
| Public Health Specialist/Toxicologist | | $24.64 | | 1.93 | |
| Senior Ecologist – Offsite | 52 | $24.64 | $1,281.28 | 2.38 | $3,049.45 |
| Senior Engineer | 237 | $24.64 | $5,839.68 | 1.93 | $11,270.58 |
| Senior Scientist | 44 | $24.64 | $1,084.16 | 1.93 | $2,092.43 |
| Senior Scientist – Offsite | | $24.64 | | 2.38 | |
| Senior Chemist | | $24.64 | | 1.93 | |
| Senior Hydrologist | 44 | $24.64 | $1,084.16 | 1.93 | $2,092.43 |
| Project Control Specialist | | $24.64 | | 1.93 | |
| **Engineer/Scientist** | | | | | |
| Engineer | 596 | $19.41 | $11,568.36 | 1.93 | $22,326.93 |
| Engineer – Offsite | 564 | $19.41 | $10,947.24 | 2.38 | $26,054.43 |
| Geologist | | $19.41 | | 1.93 | |
| Hydrologist | 107 | $19.41 | $2,076.87 | 1.93 | $4,008.36 |
| Toxicologist – Offsite | 46 | $19.41 | $892.86 | 2.38 | $2,125.01 |
| Chemist | | $19.41 | | 1.93 | |
| **Designer** | | | | | |
| CAD Operator/Sr. Draftsperson | 114 | $19.28 | $2,197.92 | 1.93 | $4,241.99 |
| **Senior Technician** | | | | | |
| Project Assistant – Offsite | | $14.25 | | 2.38 | |
| Community Relations Specialist | | $14.25 | | 2.38 | |
| Technician | | $14.25 | | 1.93 | |
| Technical Editor | 14 | $14.25 | $199.50 | 1.93 | $385.04 |
| **Technician** | | | | | |
| Project Assistant | | $11.59 | | 1.93 | |
| Technician | | $11.59 | | 1.93 | |
| **Clerical** | | | | | |
| Clerk/Word Processor | 116 | $11.05 | $1,281.80 | 1.93 | $2,473.87 |
| **Subtotal:** | 1958 | | $39,165.67 | | $81,814.69 |
| Labor Escalation – Management/Administrative: | | | | 1.051 | |
| Labor Escalation – Technical/Professional: | | | $79,340.82 | 1.054 | $83,625.22 |
| Labor Escalation – Clerical: | | | $2,473.87 | 1.044 | $2,582.72 |
| **TOTAL LABOR:** | | | $81,814.69 | | $86,207.95 |

# ABB ENVIRONMENTAL SERVICES, INC.

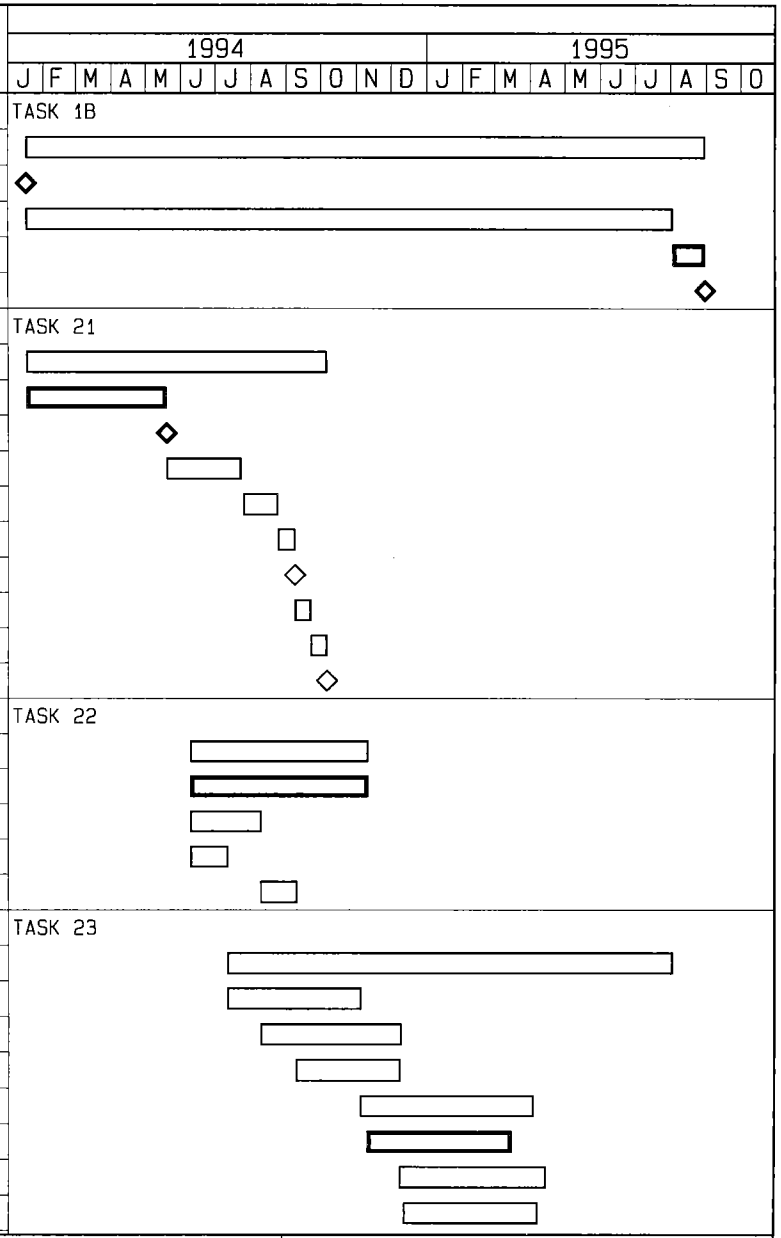
**TASK: 26 – PSC 22 Remedial Action – FINAL**
**PROJECT: CTO #090 – RI/FS @ NAS Cecil Field**
**MANAGER: Rao Angara**

| Description | Base | Rate | Subtotal | Multiplier | Total |
|---|---|---|---|---|---|
| Air Fare | 5 | various | $2,210.00 | 1.02 | $2,254.20 |
| Lodging | 13 | various | $1,010.00 | 1.02 | $1,030.20 |
| Per Diem | 26 | various | $662.00 | 1.02 | $675.24 |
| Car Rental/Fuel | 22 | $50.00 | $1,100.00 | 1.02 | $1,122.00 |
| Field Van Rental/Fuel | | $80.00 | | 1.02 | |
| **TOTAL TRAVEL:** | | | | | $5,081.64 |
| Telephone/Telefax: | 55 | $2.20 | $121.00 | 1.02 | $123.42 |
| Shipping – Letter/Other | 66 | $6.75 | $445.50 | 1.02 | $454.41 |
| Shipping – Sample Cooler | | | | 1.02 | |
| Expendable Supplies | | | | 1.02 | |
| Other – Binders | 35 | $8.95 | $313.25 | 1.02 | $319.52 |
| Other – Mylars | 10 | $3.70 | $37.00 | 1.02 | $37.74 |
| Other – Plans | 36 | various | $105.00 | 1.02 | $107.10 |
| Other | | | | 1.02 | |
| **TOTAL OTHER DIRECT COSTS:** | | | | | $1,042.19 |
| Drilling Services | | | | 1.02 | |
| Analytical Services | | | $7,100.00 | 1.02 | $7,242.00 |
| Surveying Services | | | | 1.02 | |
| Data Validation Services | | | | 1.02 | |
| Reproduction | 11720 | $0.05 | $586.00 | 1.02 | $597.72 |
| Geophysical Surveying Services | | | | 1.02 | |
| Subconsultant | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| Other | | | | 1.02 | |
| **TOTAL SUBCONTRACT COSTS:** | | | | | $7,839.72 |
| **TOTAL COST:** | | | | | $100,171.49 |
| Award Fee – Labor, Travel & ODCs | | | $92,331.77 | 0.1 | $9,233.18 |
| Award Fee – Subcontract | | | $7,839.72 | 0.045 | $352.79 |
| **TOTAL COST PLUS AWARD FEE:** | | | | | $109,757.46 |

# APPENDIX B

# SCHEDULE

| ACTIVITY DESCRIPTION | EARLY START | EARLY FINISH | ORIG DUR |
|---|---|---|---|
| | | | |
| TASK 1B - PROJECT MANAGEMENT | 17JAN94 | 30AUG95 | 414 |
| CTO 090 MODIFICATION NOTICE TO PROCEED | 17JAN94 | | 0 |
| PROJECT MANAGEMENT | 17JAN94 | 2AUG95 | 394 |
| PROJECT CLOSEOUT | 3AUG95 | 30AUG95 | 20 |
| CTO 090 COMPLETE | | 30AUG95 | 0 |
| | | | |
| TASK 21 - RI/FS WORKPLAN OU'S 3, 4, 5, 6 | 17JAN94 | 5OCT94 | 185 |
| PREPARE RI/FS WORK PLAN OU'S 3, 4, 5, 6 | 17JAN94 | 18MAY94 | 88 |
| SUBMIT DRAFT RI/FS WP OU'S 3, 4, 5, 6. | | 18MAY94 | 0 |
| AGENCY & NAVY REVIEW OF DRAFT RI/FS WP | 19MAY94 | 22JUL94 | 45 |
| RESPOND TO COMMENTS | 25JUL94 | 23AUG94 | 22 |
| PREPARE FINAL DRAFT RI/FS WP | 24AUG94 | 7SEP94 | 10 |
| SUBMIT FINAL RI/FS WP | | 7SEP94 | 0 |
| AGENCY & NAVY REVIEW OF FINAL DRAFT RI/FS WP | 8SEP94 | 21SEP94 | 10 |
| PREPARE FINAL RI/FS WP | 22SEP94 | 5OCT94 | 10 |
| SUBMIT FINAL RI\FS WP | | 5OCT94 | 0 |
| | | | |
| TASK 22 - INITIAL INVESTIGATION OU'S 3, 4, 5, & 6 | 9JUN94 | 10NOV94 | 109 |
| INITIAL INVESTIGATION OU 3 | 9JUN94 | 10NOV94 | 109 |
| INITIAL INVESTIGATION OU 4 | 9JUN94 | 9AUG94 | 43 |
| INITIAL INVESTIGATION OU 6 | 9JUN94 | 11JUL94 | 22 |
| INITIAL INVESTIGATION OU 5 | 9AUG94 | 9SEP94 | 23 |
| | | | |
| TASK 23 - TECHNICAL MEMORANDA (TM) | 11JUL94 | 2AUG95 | 271 |
| DRAFT TM OU 6 | 11JUL94 | 4NOV94 | 84 |
| DRAFT TM OU 4 | 9AUG94 | 9DEC94 | 86 |
| DRAFT TM OU 5 | 9SEP94 | 8DEC94 | 63 |
| FINAL TM OU 6 | 4NOV94 | 3APR95 | 103 |
| DRAFT TM OU 3 | 10NOV94 | 15MAR95 | 86 |
| FINAL TM OU 5 | 8DEC94 | 14APR95 | 90 |
| FINAL TM OU 4 | 12DEC94 | 7APR95 | 83 |




Plot Date 14JAN94
Data Date 8APR93
Project Start 8APR93
Project Finish 30AUG95



Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

B013 A090

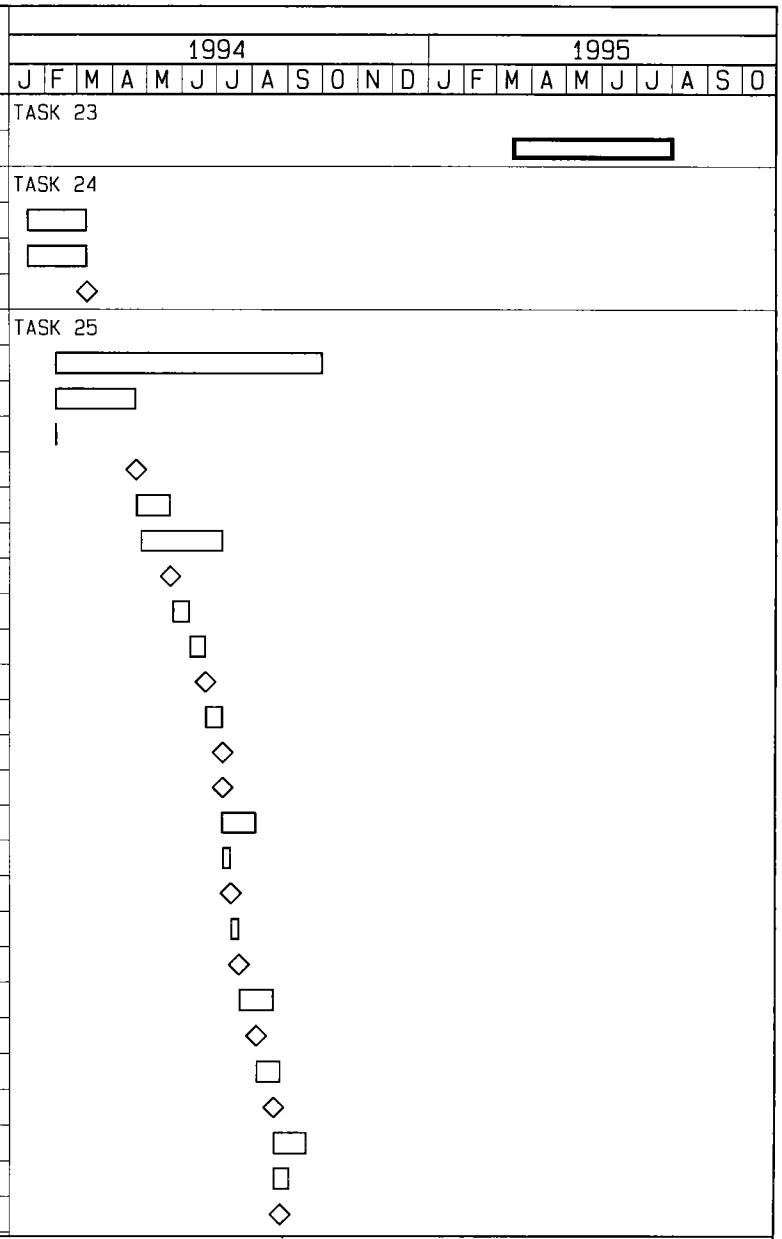
Sheet 1 of 4

NAVYCLEAN
CTO NO. 090
BASELINE PROJECT SCHEDULE

ABB ENVIRONMENTAL SERVICES, INC.

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |

| ACTIVITY DESCRIPTION | EARLY START | EARLY FINISH | ORIG DUR |
|---|---|---|---|
| | | | |
| FINAL TM OU 3 | 15MAR95 | 2AUG95 | 99 |
| | | | |
| TASK 24 - COST BENEFIT ANALYSIS | 17JAN94 | 9MAR94 | 38 |
| PREPARE COST BENEFIT ANALYSIS | 17JAN94 | 9MAR94 | 38 |
| SUBMIT COST BENEFIT ANALYSIS | | 9MAR94 | 0 |
| | | | |
| TASK 25 - INTERIM REMEDIAL ACTION SITE 5 | 10FEB94 | 30SEP94 | 164 |
| PREPARE DRAFT FINAL FFS - SITE 5 | 10FEB94 | 20APR94 | 50 |
| KICKOFF MEETING AT CECIL FIELD - SITE 5 | 10FEB94 | 10FEB94 | 1 |
| SUBMIT DRAFT FINAL FFS - SITE 5 | | 20APR94 | 0 |
| AGENCY & NAVY REVIEW OF DFT FNL FFS - SITE 5 | 21APR94 | 20MAY94 | 22 |
| PREPARE 100% DESIGN DOCUMENTS - SITE 5 | 25APR94 | 5JUL94 | 50 |
| ABB-ES RCVS AGY CMNTS ON DFT FNL FFS - SITE 5 | | 20MAY94 | 0 |
| RESPOND TO COMMENTS ON DRFT FNL FSS | 23MAY94 | 6JUN94 | 10 |
| REVISE DRAFT FINAL FFS - SITE 5 | 7JUN94 | 20JUN94 | 10 |
| SUBMIT FINAL FFS - SITE 5 | | 20JUN94 | 0 |
| PREPARE DRAFT FINAL PROPOSED PLAN - SITE 5 | 21JUN94 | 5JUL94 | 10 |
| SUBMIT DRAFT FINAL PROPOSED PLAN - SITE 5 | | 5JUL94 | 0 |
| SUBMIT 100% DESIGN TO NAVY & AGENCIES - SITE 5 | | 5JUL94 | 0 |
| AGENCY REVIEW OF 100% DESIGN - SITE 5 | 5JUL94 | 3AUG94 | 22 |
| NAVY & AGENCY RVW DRFT FNL PROPOSED PLAN-SITE 5 | 6JUL94 | 12JUL94 | 5 |
| ABB-ES RCVS ALL COMMENTS ON DFT FNL PP - SITE 5 | | 12JUL94 | 0 |
| REVISE DRAFT FINAL PROPOSED PLAN - SITE 5 | 13JUL94 | 19JUL94 | 5 |
| SUBMIT FINAL PROPOSED PLAN - SITE 5 | | 19JUL94 | 0 |
| PUBLIC COMMENT ON FFS & PROPOSED PLAN - SITE 5 | 20JUL94 | 18AUG94 | 22 |
| ABB-ES RECV ALL COMMENTS ON 100% DESIGN-SITE 5 | | 3AUG94 | 0 |
| REVISE 100% DESIGN - SITE 5 | 4AUG94 | 24AUG94 | 15 |
| ABB-ES RECEIVES ALL PUBLIC COMMENTS - SITE 5 | | 18AUG94 | 0 |
| PREPARE DRAFT FINAL IROD - SITE 5 | 19AUG94 | 16SEP94 | 20 |
| PREPARE RESPONSIVENESS SUMMARY - SITE 5 | 19AUG94 | 1SEP94 | 10 |
| SUBMIT FINAL DESIGN - SITE 5 | | 24AUG94 | 0 |




Plot Date 14JAN94
Data Date 8APR93
Project Start 8APR93
Project Finish 30AUG95



Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

B013 A090

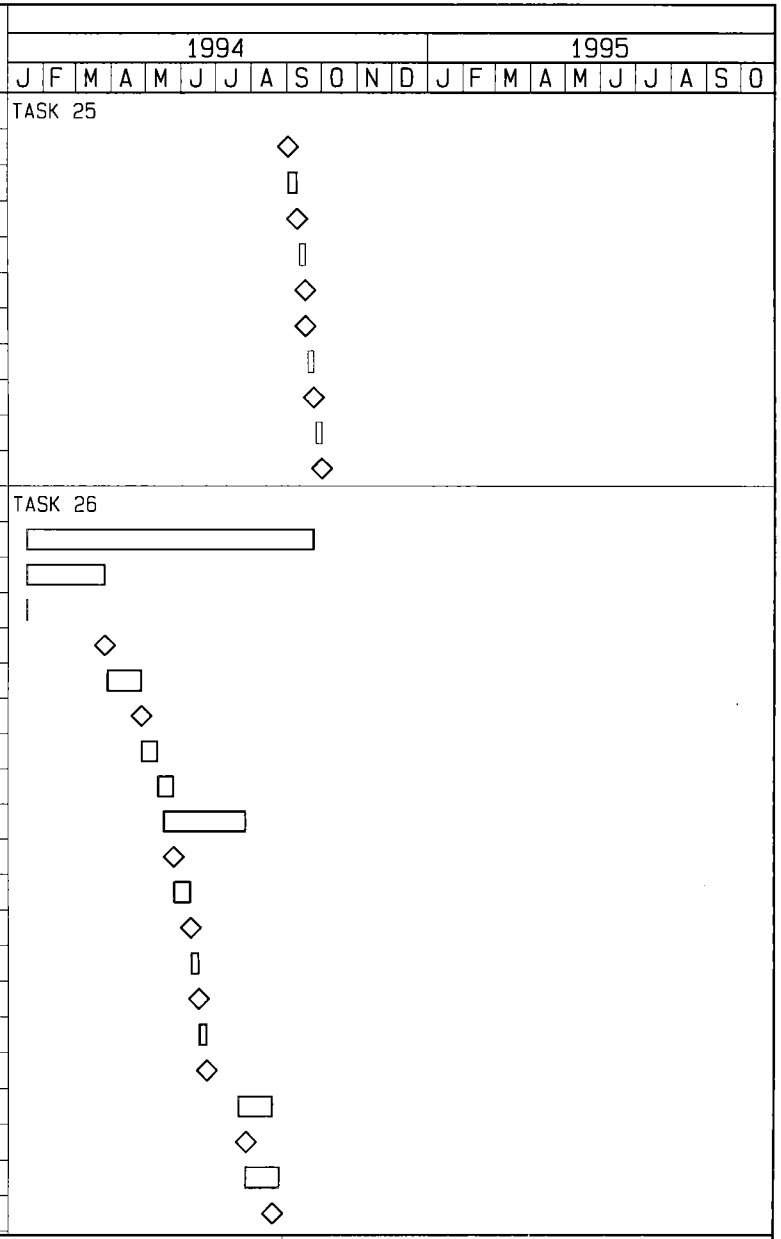
Sheet 2 of 4

NAVYCLEAN
CTO NO. 090
BASELINE PROJECT SCHEDULE

ABB ENVIRONMENTAL SERVICES, INC.

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| ACTIVITY DESCRIPTION | EARLY START | EARLY FINISH | ORIG DUR |
|---|---|---|---|
| | | | |
| SUBMIT RESPONSIVENESS SUMMARY - SITE 5 | | 1SEP94 | 0 |
| NAVY & AGENCY REVIEW OF DRAFT RS - SITE 5 | 2SEP94 | 9SEP94 | 5 |
| ABB-ES RECEIVES ALL COMMENTS ON DFT RS - SITE 5 | | 9SEP94 | 0 |
| REVISE RS - SITE 5 | 12SEP94 | 16SEP94 | 5 |
| SUBMIT FINAL RS TO NAVY - SITE 5 | | 16SEP94 | 0 |
| SUBMIT DRFT FNL IROD TO AGENCIES & NAVY - SITE 5 | | 16SEP94 | 0 |
| NAVY & AGENCY REVIEW OF DFT FNL IROD - SITE 5 | 19SEP94 | 23SEP94 | 5 |
| ABB-ES RECEIVES ALL COMMENTS - IROD - SITE 5 | | 23SEP94 | 0 |
| REVISE DRAFT FINAL IROD - SITE 5 | 26SEP94 | 30SEP94 | 5 |
| SUBMIT FINAL IROD TO NAVY - SITE 5 | | 30SEP94 | 0 |
| | | | |
| TASK 26 - INTERIM REMOVAL ACTION SITE 17 | 17JAN94 | 23SEP94 | 177 |
| PREPARE DRAFT FINAL FFS - SITE 17 | 17JAN94 | 25MAR94 | 50 |
| KICKOFF MEETING AT CECIL FIELD - SITE 17 | 17JAN94 | 17JAN94 | 1 |
| SUBMIT DRAFT FINAL FFS - SITE 17 | | 25MAR94 | 0 |
| AGENCY & NAVY REVIEW OF DFT FNL FFS - SITE 17 | 28MAR94 | 26APR94 | 22 |
| ABB-ES RCVS AGY CMNTS ON DFT FNL FFS - SITE 17 | | 26APR94 | 0 |
| RESPOND TO COMMENTS ON DRFT FNL FFS - SITE 17 | 27APR94 | 10MAY94 | 10 |
| REVISE DRAFT FINAL FFS - SITE 17 | 11MAY94 | 24MAY94 | 10 |
| PREPARE 100% DESIGN DOCUMENTS - SITE 17 | 16MAY94 | 26JUL94 | 50 |
| SUBMIT FINAL FFS - SITE 17 | | 24MAY94 | 0 |
| PREPARE DRAFT FINAL PROPOSED PLAN - SITE 17 | 25MAY94 | 8JUN94 | 10 |
| SUBMIT DRAFT FINAL PROPOSED PLAN - SITE 17 | | 8JUN94 | 0 |
| NAVY & AGENCY RVW DRFT FNL PROPOSED PLAN-SITE 17 | 9JUN94 | 15JUN94 | 5 |
| ABB-ES RCVS ALL COMMENTS ON DFT FNL PP - SITE 17 | | 15JUN94 | 0 |
| REVISE DRAFT FINAL PROPOSED PLAN - SITE 17 | 16JUN94 | 22JUN94 | 5 |
| SUBMIT FINAL PROPOSED PLAN - SITE 17 | | 22JUN94 | 0 |
| PUBLIC COMMENT ON FFS & PROPOSED PLAN - SITE 17 | 20JUL94 | 18AUG94 | 22 |
| SUBMIT 100% DESIGN TO NAVY & AGENCIES - SITE 17 | | 26JUL94 | 0 |
| AGENCY REVIEW OF 100% DESIGN - SITE 17 | 26JUL94 | 24AUG94 | 22 |
| ABB-ES RECEIVES ALL PUBLIC COMMENTS - SITE 17 | | 18AUG94 | 0 |




Plot Date 14JAN94
Data Date 8APR93
Project Start 8APR93
Project Finish 30AUG95



Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

B013 A090

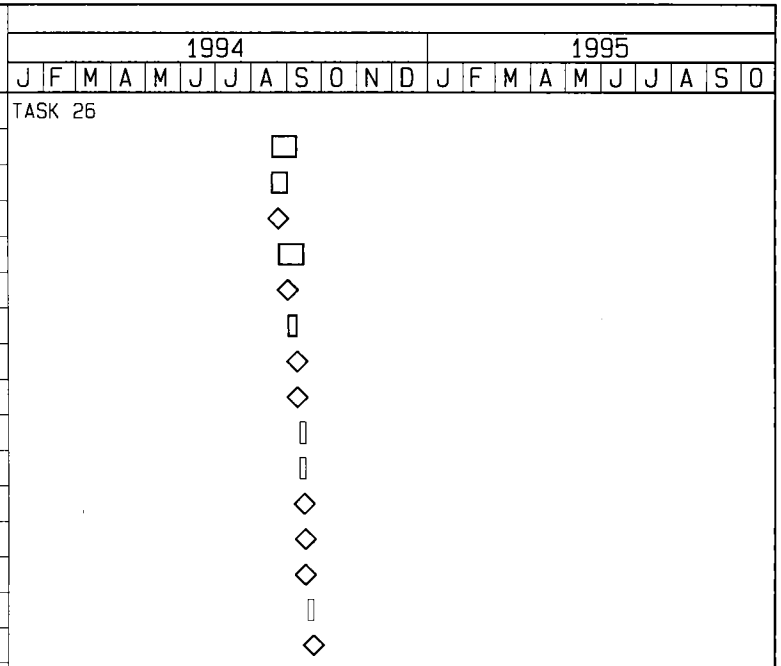
Sheet 3 of 4

NAVYCLEAN
CTO NO. 090
BASELINE PROJECT SCHEDULE

ABB ENVIRONMENTAL SERVICES, INC.

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |

| ACTIVITY DESCRIPTION | EARLY START | EARLY FINISH | ORIG DUR |
|---|---|---|---|
| PREPARE DRAFT FINAL IROD - SITE 17 | 19AUG94 | 9SEP94 | 15 |
| PREPARE RESPONSIVENESS SUMMARY - SITE 17 | 19AUG94 | 1SEP94 | 10 |
| ABB-ES RECV ALL COMMENTS ON 100% DESIGN-SITE 17 | | 24AUG94 | 0 |
| REVISE 100% DESIGN - SITE 17 | 25AUG94 | 15SEP94 | 15 |
| SUBMIT RESPONSIVENESS SUMMARY - SITE 17 | | 1SEP94 | 0 |
| NAVY & AGENCY REVIEW OF DRFT RS - SITE 17 | 2SEP94 | 9SEP94 | 5 |
| ABB-ES RECEIVES ALL COMMENTS ON DFT RS - SITE 17 | | 9SEP94 | 0 |
| SUBMIT DRFT FNL IROD TO AGENCIES & NAVY -SITE 17 | | 9SEP94 | 0 |
| REVISE RS - SITE 17 | 12SEP94 | 16SEP94 | 5 |
| NAVY & AGENCY REVIEW OF DFT FNL IROD - SITE 17 | 12SEP94 | 16SEP94 | 5 |
| SUBMIT FINAL DESIGN - SITE 17 | | 15SEP94 | 0 |
| SUBMIT FINAL RS TO NAVY - SITE 17 | | 16SEP94 | 0 |
| ABB-ES RECEIVES ALL COMMENTS - IROD - SITE 17 | | 16SEP94 | 0 |
| REVISE DRAFT FINAL IROD - SITE 17 | 19SEP94 | 23SEP94 | 5 |
| SUBMIT FINAL IROD TO NAVY - SITE 17 | | 23SEP94 | 0 |




Plot Date 14JAN94
Data Date 8APR93
Project Start 8APR93
Project Finish 30AUG95



Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

B013 A090

Sheet 4 of 4

NAVYCLEAN
CTO NO. 090
BASELINE PROJECT SCHEDULE

ABB ENVIRONMENTAL SERVICES, INC.

| Date | Revision | Checked | Approved |
|---|---|---|---|
| | | | |

# APPENDIX C

# TABLES

## Table 1
## Soil Sampling Program and Groundwater Monitoring Program
## Operable Unit 3, Sites 7 and 8

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number Borings | Number of Samples per Boring | DQO Level | Chemical Analysis | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | TPH | Methods 8010/8020 |
| **Site 7** | | | | | | | | | |
| Surface Screening Samples | 70 | 1 | C | | | | | X | X |
| Surface/Subsurface Soil (Pit Area) | 4 | 4 | D | X | X | X | X | | |
| Surface Soil (Runoff) | 7 | 1 | D | X | X | X | X | | |
| Lithologic Control Borings | 3 | 1 | | | | | | | |
| **Site 8** | | | | | | | | | |
| Surface Soil Samples | 70 | 1 | C | | | | | X | X |
| Surface/Subsurface Soil (Pit Area) | 8 | 4 | D | X | X | X | X | | |
| Surface Soil/Sediment (Runoff) | 4 | 1 | D | X | X | X | X | | |
| Lithologic Control Borings | 4 | 1 | | | | | | | |

**Groundwater Monitoring Program**

| Sample Descriptor | Number Wells | Number of Samples per Well | DQO Level | Chemical Analysis | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | TPH | Methods 8010/8020 |
| **Site 7** | | | | | | | | | |
| Screening Samples | 30 | 5 | C | | | | | X | X |
| Quality Control Samples | 15 | 1 | D | X | X | X | X | | |
| Piezometers | 3 | | | | | | | | |
| **Site 8** | | | | | | | | | |
| Screening Samples | 50 | 5 | C | | | | | X | X |
| Quality Control | 25 | 1 | D | X | X | X | X | | |
| Piezometers | 5 | 1 | | | | | | | |

Notes: TCL = Contract Laboratory Program - Target Compound List.
TAL = Contract Laboratory Program - Target Analyte List.
Pest/PCB = Contract Laboratory Program - Pesticides and Polychlorinated Biphenyls.
TPH = Total petroleum hydrocarbons (U.S. Environmental Protection Agency [USEPA] Method 418.1).
8010/8020 = Modified USEPA Methods 8010 and 8020.

## Table 1 (Continued)
## Soil Sampling Program and Groundwater Monitoring Program
## Operable Unit 4, Site 10

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number Borings | Number of Samples per Boring | DQO Level | Chemical Analysis | | | |
|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL |
| Subsurface Soil Samples | 12 | 1 | D | X | X | X | X |
| Surface Soil and Sediments | 4 | 1 | D | X | X | X | X |

**Groundwater Monitoring Program**

| Sample Descriptor | Number Wells | Number of Samples per Well | DQO Level | Chemical Analysis | | | |
|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL |
| Monitoring Wells | 12 | 1 | D | X | X | X | X |

Notes: TCL = Contract Laboratory Program - Target Compound List.
TAL = Contract Laboratory Program - Target Analyte List.
Pest/PCB = Contract Laboratory Program - Pesticides and Polychlorinated Biphenyls.
TPH = Total petroleum hydrocarbons (U.S. Environmental Protection Agency [USEPA] Method 418.1).
8010/8020 = Modified USEPA Methods 8010 and 8020.

## Table 1 (Continued)
## Soil Sampling Program and Groundwater Monitoring Program
## Operable Unit 5, Sites 14 and 15

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number Borings | Number of Samples per Boring | DQO Level | Chemical Analysis | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | Explosive |
| **Site 14** | | | | | | | | |
| Surface Soil Sample | 23 | 1 | D | X | X | X | X | X |
| Subsurface Boring Sample | 7 | 1 | D | X | X | X | X | X |
| Surface/Sediment Samples | 4 | 1 | D | X | X | X | X | X |
| **Site 15** | | | | | | | | |
| Surface Soil Samples | 20 | 1 | C | | | X | X | X |
| Surface Soil Samples | 13 | 1 | D | X | X | X | X | X |
| Subsurface Soil Samples | 5 | 1 | D | X | X | X | X | X |

**Groundwater Monitoring Program**

| Sample Descriptor | Number Wells | Number of Samples per Well | DQO Level | Chemical Analysis | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | Explosive |
| **Site 14** | | | | | | | | |
| Monitoring Wells | 7 | 1 | D | X | X | X | X | X |
| **Site 15** | | | | | | | | |
| Monitoring Wells | 5 | 1 | D | X | X | X | X | X |

Notes: TCL = Contract Laboratory Program - Target Compound List.
TAL = Contract Laboratory Program - Target Analyte List.
Pest/PCB = Contract Laboratory Program - Pesticides and Polychlorinated Biphenyls.
TPH = Total petroleum hydrocarbons (U.S. Environmental Protection Agency [USEPA] Method 418.1).
Explosive = NEESA Method 8330.

## Table 1 (Continued)
## Soil Sampling Program and Groundwater Monitoring Program
## Operable Unit 6, Site 11

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number Borings | Number of Samples per Boring | DQO Level | Chemical Analysis | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | Pest (8140/ 8150) |
| Composite Soil Samples | 12 | 4 | C | | | | | X |
| Surface Soil Sample | 4 | 1 | D | X | X | X | X | X |

**Groundwater Monitoring Program**

| Sample Descriptor | Number Borings | Number of Samples per Boring | DQO Level | Chemical Analysis | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | TCL VOL | TCL SVOC | Pest/PCB | TAL | Pest (8140/ 8150) |
| Monitoring Wells | 8 | 1 | D | X | X | X | X | X |

Notes: TCL = Contract Laboratory Program - Target Compound List.
TAL = Contract Laboratory Program - Target Analyte List.
Pest/PCB = Contract Laboratory Program - Pesticides and Polychlorinated Biphenyls.
TPH = Total petroleum hydrocarbons (U.S. Environmental Protection Agency [USEPA] Method 418.1).
8010/8020 = Modified USEPA Methods 8010 and 8020.
Pest (8140/8150) = Chlorinated Herbicides (USEPA Method 8150) and Organophosphate Pesticides (USEPA Method 8140).

## Table 2
## The Number and Type of Quality Control Samples
## Operable Unit 3, Sites 7 and 8

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number of Samples | Discretionary Samples | Duplicate Samples | MS Samples | MSD Samples | Equipment Rinsate Samples | Source Blanks | Total QA/QC Samples |
|---|---|---|---|---|---|---|---|---|
| **Site 7** | | | | | | | | |
| Surface Screening Samples | 70 | | 3 | | | 4 | 2 | 9 |
| Surface/Subsurface Soil (Pit Area) | 16 | 2 | 2 | 2 | 2 | 2 | 1 | 9 |
| Surface Soil (Runoff) | 7 | 1 | 1 | 1 | 1 | 1 | | 4 |
| Lithologic Control Borings | 3 | | | | | | | |
| **Site 8** | | | | | | | | |
| Surface Soil Samples | 70 | | 3 | | | 4 | 2 | 9 |
| Surface/Subsurface Soil | 32 | 2 | 4 | 3 | 3 | 3 | 2 | 15 |
| Surface Soil/Sediment (Runoff) | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 5 |
| Lithologic Control Borings | 4 | | | | | | | |

**Groundwater Monitoring Program**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Site 7** | | | | | | | | |
| Screening Samples | 150 | | | | | | | |
| Quality Control Samples | 15 | | | | | 5 | 1 | 6 |
| Piezometers | 3 | | | | | | | |
| **Site 8** | | | | | | | | |
| Screening Samples | 250 | | | | | | | |
| Quality Control | 25 | | | | | 7 | 1 | 8 |
| Piezometers | 5 | | | | | | | |

Notes: MS = matrix spike.
MSD = matrix spike duplicate.
QA/QC = quality assurance/quality control.

## Table 2 (Continued)
## The Number and Type of Quality Control Samples
## Operable Unit 4, Site 10

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

| Sample Descriptor | Number of Samples | Discretionary Samples | Duplicate Samples | MS Samples | MSD Samples | Equipment Rinsate Samples | Source Blanks | Total QA/QC Samples |
|---|---|---|---|---|---|---|---|---|
| **Soil Sampling Program** | | | | | | | | |
| **Site 10** | | | | | | | | |
| Subsurface Soil Samples | 12 | | 2 | 1 | 1 | 6 | | 10 |
| Surface Soil/Sediments | 16 | 4 | 2 | 1 | 1 | 4 | 1 | 9 |
| **Groundwater Sampling Program** | | | | | | | | |
| **Site 10** | | | | | | | | |
| Monitoring Wells | 12 | | 2 | 1 | 1 | 4 | | 8 |

Notes: MS = matrix spike.
MSD = matrix spike duplicate.
QA/QC = quality assurance/quality control.

## Table 2 (Continued)
## The Number and Type of Quality Control Samples
## Operable Unit 5, Sites 14 and 15

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

| Sample Descriptor | Number of Samples | Discretionary Samples | Duplicate Samples | MS Samples | MSD Samples | Equipment Rinsate Samples | Source Blanks | Total QA/QC Samples |
|---|---|---|---|---|---|---|---|---|
| **Soil Sampling Program** | | | | | | | | |
| **Site 14** | | | | | | | | |
| Surface Soil Sample | 23 | 3 | 3 | 2 | 2 | 5 | 1 | 13 |
| Subsurface Boring Sample | 7 | | 1 | 1 | 1 | 3 | 1 | 7 |
| Surface/Sediment Samples | 10 | | 2 | 2 | 2 | 2 | 1 | 9 |
| **Site 15** | | | | | | | | |
| Surface Soil Samples (Level C) | 20 | | | | | | | |
| Surface Soil Samples (Level D) | 13 | 3 | 4 | 2 | 2 | 6 | 1 | 15 |
| Subsurface Soil Samples | 5 | | 1 | 1 | 1 | 3 | | 6 |
| **Groundwater Monitoring Program** | | | | | | | | |
| **Site 14** | | | | | | | | |
| Monitoring Wells | 7 | | 1 | 1 | 1 | 2 | 1 | 6 |
| **Site 15** | | | | | | | | |
| Monitoring Wells | 5 | | 1 | 1 | 1 | 2 | | 5 |

Notes: MS = matrix spike.
MSD = matrix spike duplicate.
QA/QC = quality assurance/quality control.

## Table 2 (Continued)
## The Number and Type of Quality Control Samples
## Operable Unit 6, Site 11

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

**Soil Sampling Program**

| Sample Descriptor | Number of Samples | Discretionary Samples | Duplicate Samples | MS Samples | MSD Samples | Equipment Rinsate Samples | Source Blanks | Total QA/QC Samples |
|---|---|---|---|---|---|---|---|---|
| **Site 11** | | | | | | | | |
| Composite Soil Samples | 16 | | 2 | 1 | 1 | 2 | 1 | 7 |
| Surface Soil Sample | 4 | 1 | 1 | 1 | 1 | 2 | | 5 |
| **Groundwater Monitoring Program** | | | | | | | | |
| **Site 11** | | | | | | | | |
| Monitoring Wells | 8 | 1 | 1 | 1 | 1 | 1 | 4 | 7 |

Notes: MS = matrix spike.
MSD = matrix spike duplicate.
QA/QC = quality assurance/quality control.

## Table 3
## Level of Effort for Task 22
## (Broken Down by Subtask

Initial Investigation Workplan
NAS Cecil Field
Jacksonville, Florida

| Task | Activity | Calculation of Hours | Total Number of Hours |
|---|---|---|---|
| 22.1.1 | Subsurface Soil | (3 men) (12 borings) (0.5 days/boring) (10 hours/day) | 180 |
| 22.1.2 | Screening | (3 men) (80 locations) (2 days/location) (10 hour/day) | 4,800 |
| | Piezometers | (3 men) (8 piezometers) (10 hours/day) (4 piezometers/day) | 60 |
| | Lithologic | (3 men) (7 locations) (1 location/day) (10 hours/day) | 210 |
| 22.1.3 | Sediment | (3 men) (13 samples) (10 hours/day) (5 samples/day) | 90 |
| 22.1.4 | Surface Soil | (3 men) (140 samples) (10 hours/day) (5 samples/day) | 840 |
| 22.1.5 | Data Management | (174 samples) (1.5 hours/sample) | 261 |
| | Total | | 6,441 |
| 22.2.1 | Subsurface Soil | (1 man) (8 hours/sample) (12 samples) | 96 |
| 22.2.2 | Monitoring Well Installation | (3 men) (12 wells) (10 hours/day) (2 wells/day) | 180 |
| | Slug Testing | (3 men) (3 test/day) (10 hours/day) | 60 |
| 22.2.3 | Groundwater Sampling | (3 men) (12 wells) (10 hours/day) (2 wells/day) | 180 |
| 22.2.4 | Sediment Sampling | (3 men) (18 samples) (10 hour/day) (5 samples/day) | 120 |
| 22.2.5 | Data Management | (57 samples) (1.5 hours/sample) | 86 |
| | Total | | 722 |
| 22.3.1 | Soil Sampling | (1 man) (8 hours/sample) (12 samples) | 96 |
| 22.3.2 | Monitoring Well Installation | (3 men) (12 wells) (10 hours/day) (2 wells/day) | 180 |
| | Slug Testing | (3 men) (3 tests/day) (10 hours/day) | 60 |
| 22.3.3 | Groundwater Sampling | (3 men) (12 wells) (10 hours/day) (2 wells/day) | 180 |
| 22.3.4 | Surface Water/Sediment | (3 men) (10 samples) (3 hours/sample) | 90 |
| 22.3.5 | Surface Soil | (3 men) (62 samples) (10 hours/day) (5 samples/day) | 372 |
| 22.3.6 | Data Management | (146 samples) (1.5 Hours/samples) | 219 |
| | Total | | 1,197 |
| 22.4 | Health and Safety | Health and Safety Officer (full-time) | 170 |
| 22.4.1 | Surface Soil | (3 men) (16 samples) (10 hour/day) (2 samples/day) | 240 |
| 22.4.2 | Monitoring Well Installation Level B | (4 men) (8 wells) (1 well/day) (10 hours/day) | 320 |
| 22.4.3 | Groundwater Sampling | (3 men) (8 samples) (10 hours/day) (1 well/day) | 240 |
| 22.4.4 | Data Management | (45 samples) (1.5 Hours/sample) | 68 |
| | Total | | 1,038 |
| | **TOTAL** | | 9,398 |

# AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

| 2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
|---|---|---|---|
| 009004 | See Block 16C | | |

6. ISSUED BY: CODE N62467

COMMANDING OFFICER, SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
2155 EAGLE DRIVE, P. O. BOX 190010
NORTH CHARLESTON, SC 29419-9010

ROBERT RIVERS Code 0233RR 803/743-8353 bg

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Donna Scantlebury | From Barbara Green
Co. ABB Environ | Co. SOUTHDIV
Dept. | Phone # 803-743-0924
Fax # 904-942-0131 | Fax # 803-743-0853

7. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

ABB Environmental Services, Inc.
2590 Executive Center Circle East
Berkeley Building
Tallahassee, FL 3230[illegible]

00004108

CONFORMED COPY

CODE | FACILITY CODE

☐ 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

☒ 10A. MODIFICATION OF CONTRACT/ORDER NO. N62467-89-D-0317/0090

10B. DATED (SEE ITEM 13) 93 APR 07

## 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

## 12. ACCOUNTING AND APPROPRIATION DATA (If required)

NET INCREASE (ESTIMATED) (BRAC)

QF 97X0510.1104 025 61406/0 062467 2D N60200 000003014O1F Est. Budget $3,119,439
QG 97X0510.1104 025 61406/0 062467 2D N60200 000003014O2F Award Fee Pool$ 231,286 = $3,350,7

## 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

☐ A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

☐ B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

☒ C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
As mutually agreed upon by both parties

☐ D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return the original copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

RI/FS OPERABLE UNTIS 2, 3, 4, 5, AND 6, NAVAL AIR STATION, CECIL FIELD, FL

The above referenced Contract Task Order is hereby modified as follows:

The RI/FS for Operable Units #2, 3, 4, 5, and 6 at Naval Air Station, Cecil Field, FL, that was negotiated for a total estimate of $3,350,725 (Estimated Budget $3,119,439) and (Award Fee Pool $231,286) is ordered.

In accordance with FAR Clause 52.232-22 Limitation of Funds, the estimated budget for Contract Task Order 0090, exclusive of award fee is $9,856,299. The total award fee pool now reads $733,692.

(Continued on page 2)

Copy to: PWO, NAS Cecil Field, FL and DCAA

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

Reason Code: SCPE

| 15A. NAME AND TITLE OF SIGNER (Type or print) | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) |
|---|---|
| RAYMOND A. ALLEN, III<br>PROGRAM MANAGER | DWIGHT CARGILE, Head, Eastern, Environ/CLEAN<br>Contracts Branch, Contracting Officer |
| 15B. CONTRACTOR/OFFEROR | 15C. DATE SIGNED 1-24-94 |
| 16B. UNITED STATES OF AMERICA | 16C. DATE SIGNED 27 JAN 1994 |

The total Contract Task Order amount is $10,589,991 (estimated).

The estimated Contract Task Order completion date for Task 25 and Task 26 is 30 September 1994.

The estimated Contract Task Order completion date for all other Tasks is 4 August 1995.

The contract is hereby modified to reflect changes to the original Statement of Work dated 4 January 1993. The attached two page addendum is hereby incorporated to reflect desired changes to the original statement of work.

Submit invoices to: In accordance with Part VI, Clause 2.b of the basic contract.
Payment will be made by: Defense Finance & Accounting Service
Defense Accounting Office - Cleve Ctr.
621 Pleasant Valley Road
Port Hueneme, CA 93043-4300

## NAVY CLEAN REVIEW TRACKING AND DOCUMENTATION RECORD

Document Full Title and Facility Name: Cecil POA

Authors: Bob Lunardini

Task Order Manager: Barry Lester Project No.: 07581-44

Approved for Technical Review: _____ Date: _____

| Task Order Manager Review | Lead Senior Technical Review | Supplementary Technical Review |
|---|---|---|
| Name: _____<br>Date: _____<br><br>Meets Statement of Work<br>Approval: _____ Date: _____<br>Overall Comments:<br><br>Additional Comments Attached:<br>Yes____ No____ | Name: _____<br>Date: _____<br><br>Meets ALL Technical Requirements<br>Approval: _____ Date: _____<br>Overall Comments<br><br>Additional Comments Attached:<br>Yes____ No____ | Name: Robert Cleveland Jr<br>Date: 13 Oct 93<br>Components Rev'd: Task 25 + 26<br>Approval: ✓<br>Name: _____<br>Date: _____<br>Components Rev'd: _____<br>Comments Attached:<br>Yes____ No____ |
| **Contracts/Purchasing Review** | **Copy Editor** | **Word Processing/Drawings Release** |
| Name: _____<br>Date: _____<br><br>Meets Contract Requirements<br>Approval: _____ Date: _____<br>Comments Attached:<br>Yes____ No____ | Name: SHERRON FLAGG<br>Date: 9/30/93<br><br>Meets Program Editorial Standards<br>Approval: _____ Date: 9/30<br>Comments Attached:<br>Yes ✓ No____ | Meets Navy/Applicable Format<br><br>Word Processing:<br>Approval: _____ Date: _____<br><br>Graphics:<br>Approval: _____ Date: _____ |

## PROGRAM MANAGEMENT RELEASE

DOCUMENT APPROVED FOR RELEASE

_____ _____ _____

Program Manager/Technical Director Signature Date

Comments Attached: Yes____ No____

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

| 2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
|---|---|---|---|
| 009003 | See Block 16C | | |

PAGE OF PAGES: 1 | 2

6. ISSUED BY CODE N62467

COMMANDING OFFICER, SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
2155 EAGLE DRIVE, P. O. BOX 190010
NORTH CHARLESTON, SC 29419-9010

JANET MORRIS, Code 0233JM 803/743-0908 bg

7. ADMINISTERED BY (If other than Item 6) CODE

Same as Block 6

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

ABB Environmental Services, Inc.
2590 Executive Center Circle East
Berkeley Building
Tallahassee, FL 32301

00004108

ORIGINAL

(X) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

X 10A. MODIFICATION OF CONTRACT/ORDER NO. N62467-89-D-0317/0090

10B. DATED (SEE ITEM 13) 93 APR 07

CODE FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

QF 97X0510.1104 025 61406/0 062467 2D N60200 00000301401F Est. Budget $3,195,892
QG 97X0510.1104 025 61406/0 062467 2D N60200 00000301402F Award Fee Pool $ 240,374

NET INCREASE (ESTIMATED) (BRAC) $3,436,266

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: As mutually agreed upon by both parties

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, [X] is required to sign this document and return the original copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

RI/FS FOR OPERABLE UNITS 1, 2 AND 7 AND WORKPLANS AND SUPPORT FOR INVESTIGATIVE SET #2, NAVAL AIR STATION, CECIL FIELD, FL

The above referenced Contract Task Order is hereby modified to award Phase II which consists of the tasks as identified in 009002 dated 30 Sep 93, for the previously negotiated amount of $3,436,266 (Estimated Budget $3,195,892; Award Fee Pool $240,374).

(continued on page 2)

Copy to: PWO, NAS Cecil Field, FL and DCAA

Reason Code:SCPE

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)
RAYMOND A. ALLEN, III
PROGRAM MANAGER

15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)

15C. DATE SIGNED 1-10-94

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)

16C. DATE SIGNED 12 June 94

# PLAN OF ACTION

CONTRACT NO. N62467-89-D-0317
SOW NO. 010

RI/FS
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

25 September 1991

Submitted By:

ABB ENVIRONMENTAL SERVICES, INC.
2571 EXECUTIVE CENTER CIRCLE EAST
TALLAHASSEE, FLORIDA 32301

TABLE OF CONTENTS

# I. INTRODUCTION

On September 6, 1990, Southern Division (SDIV) Naval Facilities Engineering Command (NAVFACENGCOM) contracted with ABB Environmental Services, Inc. (ABB-ES) (Contract No. N62467-89-D-0317) to assist the Navy's Environmental Engineering Program by providing engineering support services for the Installation Restoration (IR) Program. The first step in the process of executing a Contract Task Order (CTO) is for ABB-ES to respond to a Statement of Work (SOW) by participating in a site visit to define the SOW and to develop a Plan of Action (POA). The POA presents a description of the scope of services, a schedule showing the duration of the tasks, and estimated costs associated with the defined tasks.

This POA describes the scope of services, presents a Gantt schedule, and provides cost estimates to meet the objectives of SOW #010, as described in the statement of work dated 30 August 1991 and discussed during negotiations on 23 and 24 September 1991. SOW #010 requires implementation of the approved workplan for an RI/FS at operable units 1, 2, and 7 (total of six sites) at NAS Cecil Field, Jacksonville, Florida. The SOW includes the following:

Management Activities, including coordination, progress reports, administrative record and site management plan support, attending bi-monthly progress review meetings and quarterly Technical Review Committee and Project Manager meetings, and preparing community relations presentations.

Technical Activities, including site clearing, geophysics, installation of monitoring wells, sampling of soil, groundwater, surface water, and sediment, surveying of sample locations, determining aquifer characteristics, coordinating laboratory analysis, evaluating the analytical data, photographic documentation, and preparation of the Final RI/FS Report.

Section II of this POA describes the approach and resource required to fulfill the proposed tasks.

## II. SCOPE OF SERVICES

### Task 1 - Task Order Management and Monthly Reports (SOW Tasks #1, 2, 14, 15, 16)

ABB-ES will provide full time continuous project oversight for the duration of the project (estimated 20 months, October 1991 through May 1993).

ABB-ES will prepare Technical/Financial Monthly Reports (TFMR) for 20 months (20 reports) in accordance with the provisions of Part V, Section 3 of the contract. Each report will be in the format required in the contract (Part IX, Attachment A) and will summarize activities during the month, including any problems encountered and their proposed resolution, and will include a schedule update in the form of a Gantt chart.

In addition to the TFMR, ABB-ES will provide a monthly Project Planning Report, including names and resumes of staff working on the project during the following month, updated schedule of project activities, including field activities, meetings, and deliverables, description of technical approach and methods to accomplish work in the following month, anticipated problems and proposed solutions, and a historical list of due dates and actual dates for all deliverables.

ABB-ES will notify the Navy immediately upon discovery of any significant new site conditions, including imminent hazard or substantial endangerment, and any deviation from the project schedule or Workplan.

ABB-ES will provide the Navy a schedule for all submittals in the final approved 1992 Site Management Plan within five days of receipt of the Plan from the Navy.

ABB-ES will provide written notice and field schedule to the Navy 28 days prior to each sampling event.

The Key personnel for this task will be the Task Order Manager and the Project Assistant.

### Task 2 - Meetings (SOW Task #3)

ABB-ES will prepare for, participate in, and provide minutes of quarterly Technical Review Committee/Project Manager meetings (six meetings) and bimonthly progress review meetings (9 meetings) during the course of the project. All meetings will be held at NAS Cecil Field.

Key personnel for these meetings will include the Task Order Manager, Project Assistant, Senior Scientist and Technical Expert.

Task 3 - RI/FS Field Work (Operable Units 1, 2, and 7) (SOW Task #4, 18, 19, 23)

Task 3 is divided into sub-tasks, including Mobilization, Site Clearing, Geophysics, Soil Gas Sampling, Soil Borings and Monitoring Well Installation, Aquifer Testing, Groundwater Sampling, Surface Water and Sediment Sampling, Piezocone Penetration Tests, Location and Elevation Survey, and Health and Safety.

Sub-task 3.1 - Mobilization

ABB-ES will arrange for a 12'x 40' office trailer to be located near the sewage treatment plant at NAS Cecil Field and will coordinate with the facility to provide electricity. ABB-ES will arrange for a portable toilet to be located near the Operable Units under investigation and equipment decontamination stations to be located at sites convenient to the field crew and agreeable to facility personnel. The trailer and portable toilet charges appear on the Fee Itemization Form as "Other Support."

ABB-ES will purchase three cellular phones to be used for communication between ABB-ES and Navy personnel. These phones will be transferred and made available to other Navy CTO's after completion of this project. ABB-ES will coordinate with the facility IR coordinator and public works personnel for underground utility clearance at all drilling locations.

Key personnel for this task include 3 days time for the Senior Scientist and a Technician.

Sub-task 3.2 - Site Clearing

ABB-ES will subcontract for clearing of underbrush and debris as required to allow access for field investigations at the sites. ABB-ES will also arrange for offsite disposal of cleared debris. A tractor, front-end loader, and bushhog will be required. Sand or gravel will be required to fill low lying areas in order to allow a drill rig access to some sites. ABB-ES will investigate the need for wetlands permits in such cases.

Key personnel for this task will be the Technician for 2 days.

Sub-task 3.3 - Geophysics

ABB-ES will subcontract for electromagnetic induction surveys at the landfills (Operable Unit 1) and ground penetrating radar surveys at the sludge pits and AIMD seepage pit (Operable Units 2 and 7). GPR will also be performed at Site 4.

Key personnel for this task will be the Senior Scientist for 3 days.

**Sub-task 3.4 - Soil Gas Sampling**

ABB-ES will subcontract soil gas sampling at Operable Units 2 and 7 and Site 4. Key personnel will include a Chemist for 5 days.

**Sub-task 3.5 - Soil Borings and Monitoring Well Installation**

ABB-ES will subcontract to: perform 32 soil borings to the water table (estimated 10' bls) for collection of subsurface soil samples, abandonment of monitoring well MW 17-2D, installation of 24 groundwater monitoring wells in the upper zone of the surficial aquifer (estimated 15' deep), installation of 7 monitoring wells in the lower zone of the surficial aquifer (estimated 40' deep), and installation of three monitoring wells into the secondary artesian aquifer (estimated 120' deep, double cased to 70'). The wells will be constructed of 2" ID Schedule 40 PVC.

ABB-ES will properly dispose of drill cuttings and well development water according to USEPA "Guide to Management of Investigation-Derived Wastes" (1990). Drill cuttings will be spread on site if they are judged safe by the ABB-ES field leader and the Navy RI coordinator. ABB-ES will drum and label as "Hazardous Waste" all other drill cutting materials and disposable items that cannot be decontaminated. The Navy will pickup and dispose of the drums.

ABB-ES will drum decontamination liquids and the water generated during well development. The Navy will transport the drums to the wastewater treatment plant where the contents will be mixed, at a controlled rate, with the incoming wastewater.

Key personnel for this task will be a Senior Scientist for 10 days and two Geologists for 30 days each.

**Sub-task 3.6 - Aquifer Testing**

ABB-ES will perform slug tests at four wells at each site for a total of 24 slug tests. Key personnel will include a Geologist and a Technician for 5 days each.

**Sub-task 3.7 - Groundwater Sampling**

ABB-ES will collect groundwater samples from 38 wells at Operable Units 1, 2, and 7. Key personnel will include a Senior Scientist, Geologist, and Technician for 10 days each.

**Sub-task 3.8 - Surface Water and Sediment Sampling**

ABB-ES will collect surface water and sediment samples at 9 locations and measure stream flow at 3 locations. Key personnel will include a

Hydrologist and Technician for 3 days each.

**Sub-task 3.9 - Piezocone Penetration Testing**

ABB-ES will subcontract for PCPT investigations around the perimeter of the landfills (Operable Unit 1). The PCPT subcontractor will be supervised by an ABB-ES Geologist for 5 days.

**Sub-task 3.10 - Location and Elevation Survey**

ABB-ES will subcontract with a registered land surveyor to determine location and elevation of all wells and sampling locations. The ABB-ES geologist supervising the PCPT subcontractor will also oversee the survey subcontractor.

**Sub-task 3.11 - Health and Safety**

The ABB-ES Health and Safety Manager and the Field Leader will oversee the health and safety activities during field operations. Most of the field activities will be performed in accordance with USEPA Level "D" Guidelines, however some of the intrusive procedures may require the field leader to upgrade the personal protective equipment requirements to a Level "C." Because the types and duration of Level "C" activities cannot be predicted, the additional costs associated with Level "C" activities are not included on the Fee Itemization Form.

Also, health and safety equipment and supplies (all levels) for the entire Navy Clean team will be included in the ABB-ES PMO proposal for FY 1992. Therefore, no health and safety costs are proposed for these field activities. In the event that the parties agree not to include the cost of health and safety in the FY-1992 PMO budget, this task must be modified.

**Task 4 - Photographic Documentation and Site Maps (SOW Tasks #8, 9, 10, 11)**

ABB-ES will take video and still photographs of representative field activities during the investigations of Operable Units 1, 2, and 7. The video footage will be edited to be suitable for presentation at TRC or public meetings. The still photographs will be assembled in a photo album with explanatory captions for inclusion in the project files.

ABB-ES will prepare a photo album containing prints and slides of existing photographs of the sites taken by others (estimated to include approximately 36 photographs). The photographs will be labeled and placed in an archive quality binder.

ABB-ES will prepare overall station maps showing locations of all IRP sites, all RI/FS sites, and sites in OUs 1, 2, and 7, in two sizes

(12"x24" and 24"x36"). The maps will be labeled and mounted on stiff backing for hanging or standing on a tripod.

ABB-ES will prepare site maps of each of the sites in OUs 1, 2, and 7 in 8.5"x11" format with site descriptions on the reverse of the maps. The maps and site descriptions will be laminated for weatherproofing and to provide a stiff mounting for use in the field.

Key personnel will include a Senior Graphics Technician and Project Assistant.

Task 5 - Treatability Studies (SOW Task #5)

ABB-ES will prepare a letter report to Southern Division describing proposed treatability testing and associated costs. Costs for bench scale testing of remedial treatment alternatives vary widely and cannot be estimated until a more detailed study plan has been prepared. We anticipate evaluating solidification, bioremediation, soil washing and solvent extraction as possible remedial alternatives for Operable Units 1, 2, and 7 at NAS Cecil Field. ABB-ES will collect appropriate samples and arrange for performance of the agreed upon treatability tests. ABB-ES will prepare a technical memorandum evaluating the results of the treatability tests and include this information in the final RI/FS report for the appropriate Operable Units.

Key personnel will include a Senior Engineer for 15 days, an Engineer at 20 days; a Chemist for 15 days; a Senior Chemist for 7.5 days; and a Technical Expert for 2 days.

Task 6 - Data Validation (SOW Task #4 and 21)

ABB-ES will contract with the analytical laboratory to provide electronic deliverables and will utilize the ACS computerized Data Management System to facilitate data validation. A total of 749 sample analyses (285 organic analyses and 464 inorganic analyses) will require validation. The recommended review time for Level "D" data validation packages for each analysis is 1 hour for each organic analysis and half an hour for each inorganic analysis. The review is performed by a Quality Assurance Assistant with oversight by the Quality Assurance Manager.

Task 7 - Baseline Risk Assessment (SOW Task #4)

ABB-ES will perform a baseline health and ecological assessment for Operable Units 1, 2, and 7, focusing on the source areas. Exposure pathways to be evaluated will include direct contact and airborne contamination. The groundwater exposure pathway will not be considered at this time. ABB-ES will prepare a technical memorandum identifying target cleanup levels and the baseline risk assessment will be included in the

final RI/FS reports. Key personnel will include Senior Scientists (Applied Ecologists); Public Health Specialists; Toxicologists; and a Technical Expert.

Task 8 - Data Evaluation and Interpretation (SOW Task #4 and 22)

ABB-ES will compile and evaluate the data from the field investigations. Technical memoranda will be prepared summarizing results of the geophysical investigations, soil gas survey, and hydrogeologic investigations (slug tests, soil borings and PCPT). The technical memoranda will be included as chapters or appendices in the final RI/FS report.

Key personnel will include a Senior Scientist and Hydrologist for 30 days each; a Chemist and Technical Expert for 3 days each.

Task 9 - Feasibility Study (SOW Task #4)

ABB-ES will identify and evaluate potential remedial technologies, identify and evaluate potential remedial alternatives, and perform a detailed evaluation of alternatives for remediation of Operable Units 1, 2, and 7 to meet the target cleanup levels identified in Task 6 and comply with ARARs.

Key personnel will include a Senior Engineer for 22 days; Engineer for 44 days; and the Technical Expert, Public Health Specialist, and Ecotoxicologist for 5 days each.

Task 10 - Groundwater Modeling Evaluation (SOW Task #17)

ABB-ES will provide a brief letter report evaluating the need for groundwater modeling during the RI/FS at NAS Cecil Field. The report will recommend specific models, including computer software packages and hardware requirements, and the point in the project when modeling should be implemented, if appropriate.

Key personnel for this task include a Technical Expert for 1.5 weeks.

Task 11 - RI/FS Report (SOW Task #4)

ABB-ES will prepare Draft, Draft Final, and Final RI/FS reports for each Operable Unit under investigation. The Navy will review the Draft reports at ABB-ES prior to their submittal to EPA. Results of the field investigation, risk assessment, treatability studies, and feasibility study will be included. The Draft Final documents will address comments provided by the Navy, EPA, FDER, and other TRC members. Minimal comments are anticipated on the Draft Final documents.

An estimate 30 copies of each deliverable will be prepared, at approximately 750 pages each contained in two 3-ring binders.

Key personnel include Senior Engineer and Senior Scientist for 15 days each; Engineer and Hydrologist for 30 days each; Technical Expert, Public Health Specialist, Technical Editor, and Ecotoxicologist for 5 days each.

Task 12 - Proposed Plan/ Draft ROD (SOW Task #7)

ABB-ES will incorporate the selected remedy into a proposed plan/draft Record of Decision for public review and comment. Key personnel include the Senior Engineer for 10 days; Engineer for 5 days; Technical Expert for 1.5 days; and Community Relations Specialist for 3 days.

Task 13 - Community Relations Support (SOW Task #6)

ABB-ES will provide support for an estimated four public meetings, including presentation development and review, participation, and preparation of minutes for each meeting. ABB-ES will prepare an estimated four fact sheets or press releases describing progress of the RI/FS at NAS Cecil Field for the public.

Key personnel include the Senior Scientist for 30 hours per meeting; Community Relations Specialist for 40 hours per meeting (includes fact sheet preparation); and Graphics Technician for 10 hours per meeting.

Task 14 - Administrative Record/FFA Support (SOW Task #12 and 13)

ABB-ES will provide quarterly updates to the Administrative Record File Index and maintain the administrative record files at NAS Cecil Field and Southern Division. ABB-ES will assist Southern Division in preparation of the annual Site Management Plan required under the Federal Facilities Agreement for NAS Cecil Field. Key personnel include the Task Order Manager and the Project Assistant.

Task 15 - Source Removal (SOW Task #20)

At some point in the future, the Navy may direct ABB-ES to remove source contamination at various sites at NAS Cecil Field. Since the extent of these activities cannot be defined at this time, the associated costs cannot be determined and thus are not included in the costs estimate to complete this statement of work.

## III. KEY PERSONNEL

The designated roles for the RI/FS Workplan development at the NAS Cecil Field are as follows:

- Task Order Manager. The Task Order Manager for the RI/FS will be Margaret Layne, P.E. Ms. Layne is responsible for evaluating the appropriateness and adequacy of the technical or engineering services provided for the project and for developing the technical approach and LOE required to address each of the Workplan tasks.

  Specific responsibilities of this role include:

  - overall technical responsibility for the project;
  - initiating project activities;
  - participating in planning and staff assignments;
  - monitoring task activities to ensure compliance with established budgets, schedules, and scope of work; and
  - regularly interacting with the EIC, the Program Manager, and others as appropriate, on the status of the project.

- Senior Scientist. The Senior Scientist will be Charles Donahue. Mr. Donahue will be responsible for the day-to-day conduct of work, including the integration of supporting disciplines. He will oversee quality control during the performance of the work, the technical integrity of the approach, and the clarity and usefulness of project work products.

- Quality Review Board. A Quality Review Board comprised of senior technical staff from the ABB-ES team will assist the Task Order Manager by providing review of the technical aspects of the project to assure they are produced in accordance with corporate policy, and meet the requirements of U.S. Navy Southern Division.

  Michael Keirn, Ph.D. and Ken Busen, P.G. will comprise the ABB-ES technical quality review board and will be actively involved in assuring the technical quality and appropriateness of methodologies, conclusions and recommendations. Dr. Keirn will serve as primary Technical Expert supporting the RFI program. Mr. Busen will provide oversight of the hydrogeologic portions of the program.

  Dr. Keirn is an environmental scientist with over 20 years experience in environmental assessments. He has been active in all phases in the IR program as a consultant and/or project manager since 1979. As an environmental chemist, Dr. Keirn has designed and interpreted

numerous sampling and analysis programs for all environmental media, including design and implementation of baseline, detection, and compliance monitoring programs at solid waste landfills in accordance with the past and current RCRA guidance on program design and statistical analysis.

- Other Key Technical Team Members. John McVoy will be the QA Manager overseeing the data collection and validation. Mr. McVoy has extensive knowledge and experience with analytical protocols, QA/QC requirements, and USEPA Region IV requirements.

## IV. SCHEDULE

Attachment A includes a Gantt chart presenting the proposed schedule based on calendar days for completion of the tasks described above. Additionally, a milestone report is included presenting the key deadline dates in the project. These schedules assume receipt of Notice to Proceed on September 30, 1991.

## V. COST

Attachment B (Table 1 and fee itemization form) presents the cost estimate to complete the scope of services described herein.

## VI. FEE ITEMIZATION FORM SCOPE LIMITATION

The purpose of this paragraph is to clearly define the scope and assumptions made for this fee proposal should it be necessary to enact provisions delineated at Par VII. Para. 22 of the subject contract in accordance with FAR 5243-2.

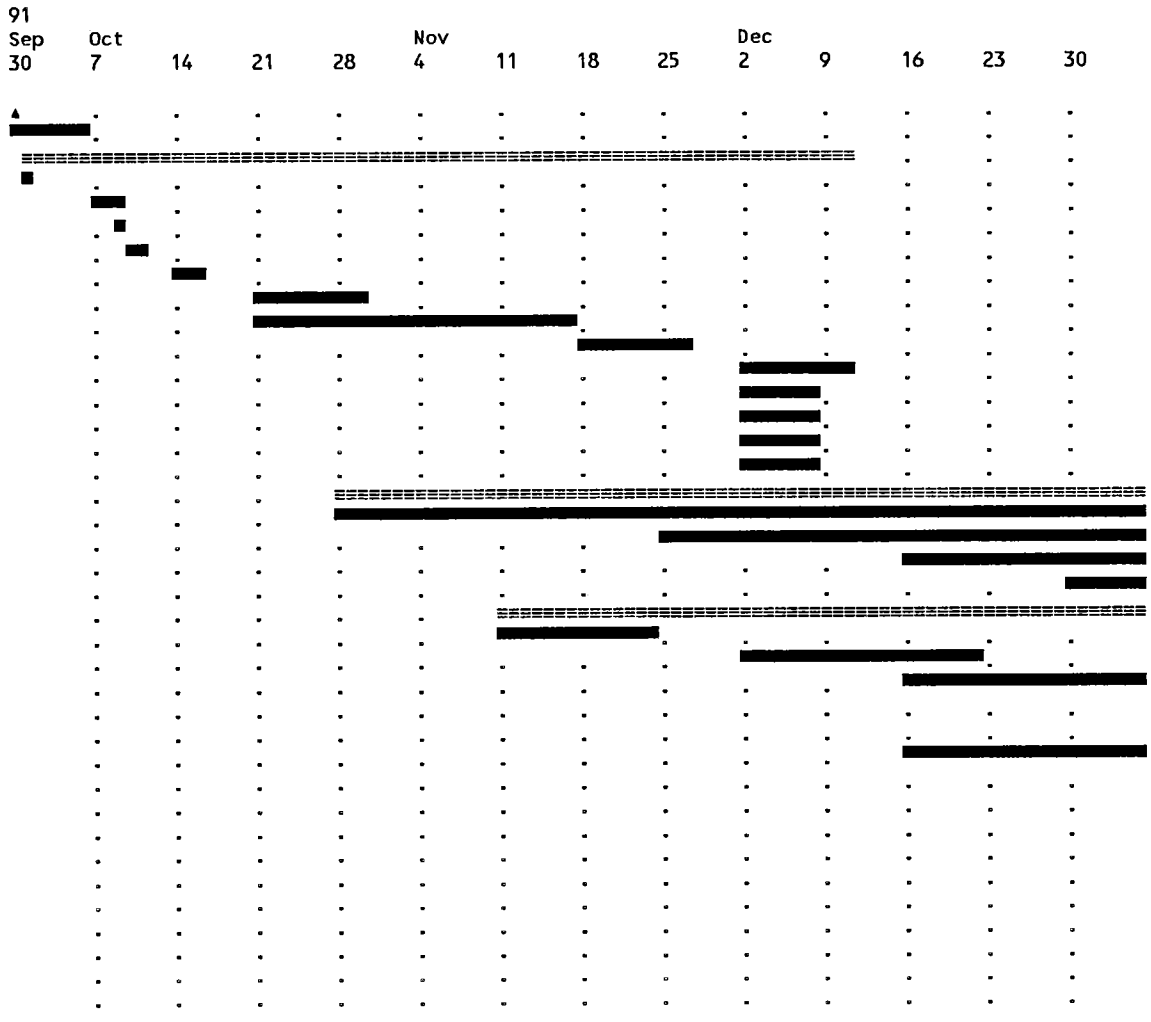
ATTACHMENT A

SCHEDULE

Schedule Name : NAS Cecil Field Site Management Plan
Responsible : Cliff Casey
As-of Date : 9/25/91 Schedule File : CECILACC

Operable Units 1, 2, and 7 - Informal Review Schedule

| Task Name | Start Date | Durat | End Date |
|---|---|---|---|
| Notice to Proceed | 9/30/91 | 0 | 9/30/91 |
| Subcontracting | 9/30/91 | 7 | 10/7/91 |
| RI Field Work | 10/1/91 | 72 | 12/12/91 |
| Site Recon/EM Survey | 10/1/91 | 1 | 10/2/91 |
| Site Clearing | 10/7/91 | 3 | 10/10/91 |
| GPR Survey | 10/9/91 | 1 | 10/10/91 |
| PCPT | 10/10/91 | 2 | 10/12/91 |
| Soil Gas Sampling | 10/14/91 | 3 | 10/17/91 |
| Shallow Soil Borings | 10/21/91 | 10 | 10/31/91 |
| Monitoring Well Inst. | 10/21/91 | 28 | 11/18/91 |
| GW Sampling/Levels | 11/18/91 | 10 | 11/28/91 |
| Aquifer testing | 12/2/91 | 10 | 12/12/91 |
| SW/Sed. Sampling | 12/2/91 | 7 | 12/9/91 |
| SW Flow Measurement | 12/2/91 | 7 | 12/9/91 |
| Biological Survey | 12/2/91 | 7 | 12/9/91 |
| Location Survey | 12/2/91 | 7 | 12/9/91 |
| Data Assessment | 10/28/91 | 154.0 | 3/30/92 |
| Lab Analysis | 10/28/91 | 80 | 1/16/92 |
| Data Validation | 11/25/91 | 91 | 2/24/92 |
| Data Evaluation | 12/16/91 | 91 | 3/16/92 |
| Baseline Risk Assessment | 12/30/91 | 91 | 3/30/92 |
| Feasibility Study | 11/11/91 | 189.0 | 5/18/92 |
| Identify ARARs | 11/11/91 | 14 | 11/25/91 |
| Develop Alternatives | 12/2/91 | 21 | 12/23/91 |
| Screen Alternatives | 12/16/91 | 70 | 2/24/92 |
| Analyze Alternatives | 2/24/92 | 84 | 5/18/92 |
| RA of Alternatives | 2/24/92 | 84 | 5/18/92 |
| Treatability Studies | 12/16/91 | 84 | 3/9/92 |
| RI/FS Report | 3/16/92 | 255.0 | 11/26/92 |
| + Draft RI/FS Report | 3/16/92 | 195.0 | 9/27/92 |
| + Draft Final RI/FS Report | 9/27/92 | 60 | 11/26/92 |
| Final RI/FS Report | 11/26/92 | 0 | 11/26/92 |
| Proposed Plan | 10/12/92 | 171.0 | 4/1/93 |
| + Draft | 10/12/92 | 66 | 12/17/92 |
| + Final | 12/17/92 | 105.0 | 4/1/93 |
| Record of Decision | 11/16/92 | 181.0 | 5/16/93 |
| + Draft | 11/16/92 | 105.0 | 3/1/93 |
| + Final | 4/1/93 | 45 | 5/16/93 |



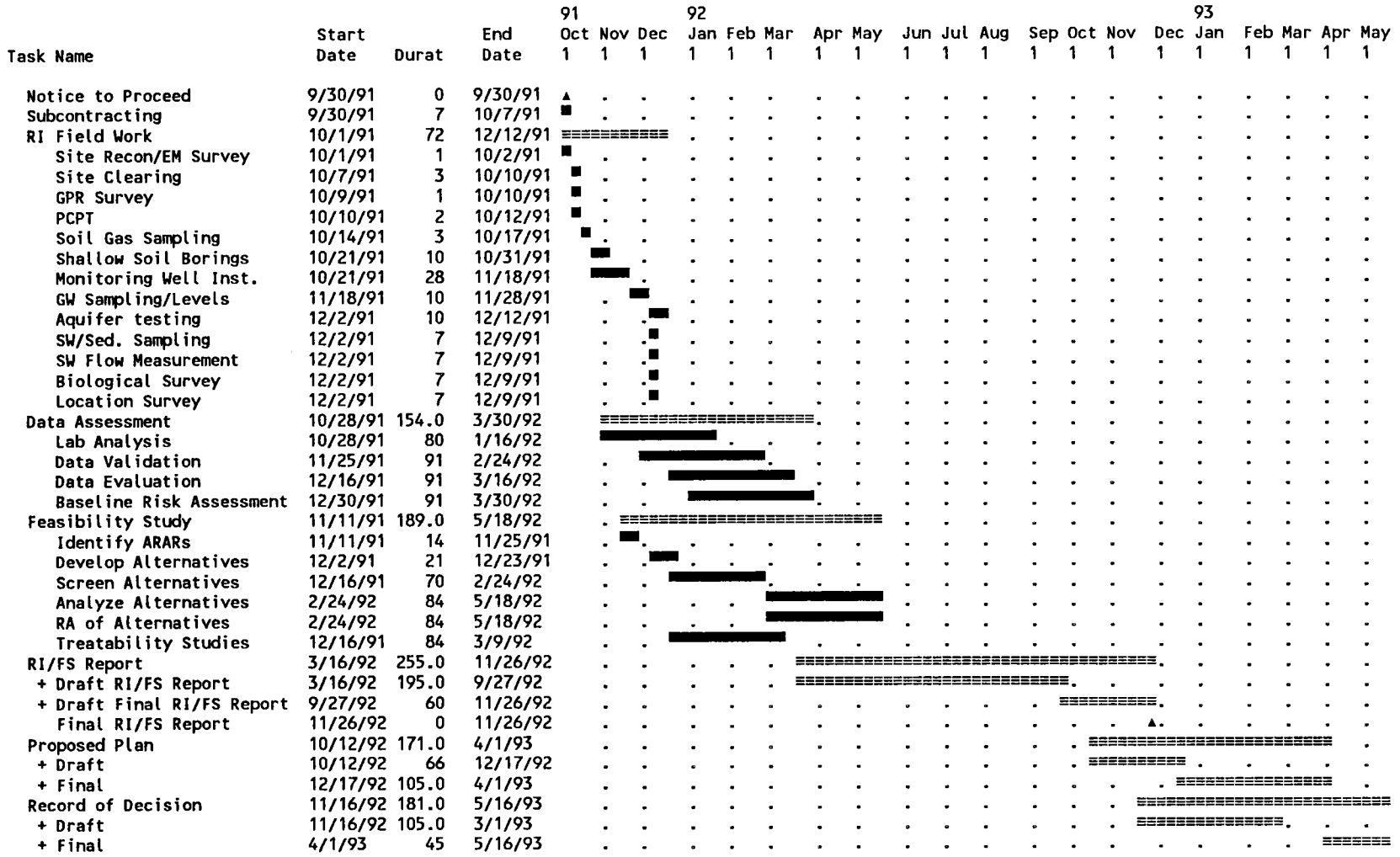

Detail Task ≡≡≡≡≡ Summary Task °°°°° Baseline
(Progress) (Progress) ▸▸▸ Conflict
(Slack) (Slack) Resource delay
Progress shows Percent Achieved on Actual ▲ Milestone
Scale: 8 hours per character

ATTACHMENT B

COST ESTIMATE

Schedule Name : NAS Cecil Field Site Management Plan
Responsible : Cliff Casey
As-of Date : 9/25/91 Schedule File : CECILACC

Operable Units 1, 2, and 7 - Informal Review Schedule

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| SW/Sed. Sampling | 12/2/91 | 7 | 12/9/91 |
| SW Flow Measurement | 12/2/91 | 7 | 12/9/91 |
| Biological Survey | 12/2/91 | 7 | 12/9/91 |
| Location Survey | 12/2/91 | 7 | 12/9/91 |
| Data Assessment | 10/28/91 | 154.0 | 3/30/92 |
| Lab Analysis | 10/28/91 | 80 | 1/16/92 |
| Data Validation | 11/25/91 | 91 | 2/24/92 |
| Data Evaluation | 12/16/91 | 91 | 3/16/92 |
| Baseline Risk Assessment | 12/30/91 | 91 | 3/30/92 |
| Feasibility Study | 11/11/91 | 189.0 | 5/18/92 |
| Identify ARARs | 11/11/91 | 14 | 11/25/91 |
| Develop Alternatives | 12/2/91 | 21 | 12/23/91 |
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| RA of Alternatives | 2/24/92 | 84 | 5/18/92 |
| Treatability Studies | 12/16/91 | 84 | 3/9/92 |
| RI/FS Report | 3/16/92 | 255.0 | 11/26/92 |
| + Draft RI/FS Report | 3/16/92 | 195.0 | 9/27/92 |
| + Draft Final RI/FS Report | 9/27/92 | 60 | 11/26/92 |
| Final RI/FS Report | 11/26/92 | 0 | 11/26/92 |
| Proposed Plan | 10/12/92 | 171.0 | 4/1/93 |
| + Draft | 10/12/92 | 66 | 12/17/92 |
| + Final | 12/17/92 | 105.0 | 4/1/93 |
| Record of Decision | 11/16/92 | 181.0 | 5/16/93 |
| + Draft | 11/16/92 | 105.0 | 3/1/93 |
| + Final | 4/1/93 | 45 | 5/16/93 |

Detail Task ===== Summary Task °°°°° Baseline
(Progress) ===== (Progress) ▸▸▸ Conflict
(Slack) ===— (Slack) Resource delay
Progress shows Percent Achieved on Actual ▲ Milestone
Scale: 7 days per character

# CLEAN FEE ITEMIZATION FORM
# SOUTHDIV ENVIRONMENTAL DIVISION

DATE OF SCOPE: 25 September 1991 A&E FIRM: ABB Environmental Services, Inc.

SOW: 10 DATE OF ESTIMATE: 25 September 1991 CONTRACT NO.: N62467-89-D-0317

PROJECT: RI/FS OPERABLE UNITS 1,2, AND 7

FUNDING: Defense Environmental Restoration Act (DERA)

ACTIVITY: Naval Air Station, Cecil Field

UIC CODE: _____ LOCATION: Jacksonville, Florida

| | | OFFICE | | FIELDWORK | | TOTAL | |
|---|---|---|---|---|---|---|---|
| ITEM | RATE/HR. | LABOR HOURS | COST(S) | LABOR HOURS | COST(S) | LABOR HOURS | COST(S) |
| Program Manager | 36.50 | | $0.00 | | $0.00 | 0 | $0.00 |
| Quality Assurance Manager | 25.50 | 80 | $2,040.00 | | $0.00 | 80 | $2,040.00 |
| Task Order Manager | 29.00 | 2720 | $78,880.00 | | $0.00 | 2,720 | $78,880.00 |
| Senior Engineer | 29.00 | 496 | $14,384.00 | | $0.00 | 496 | $14,384.00 |
| Senior Scientist | 29.10 | 2170 | $63,147.00 | | $0.00 | 2,170 | $63,147.00 |
| Engineer | 18.50 | 790 | $14,615.00 | | $0.00 | 790 | $14,615.00 |
| Geologist | 19.00 | 536 | $10,184.00 | | $0.00 | 536 | $10,184.00 |
| Hydrologist | 20.00 | 480 | $9,600.00 | | $0.00 | 480 | $9,600.00 |
| Toxicologist | 18.00 | 176 | $3,168.00 | | $0.00 | 176 | $3,168.00 |
| Program Assistant | 13.00 | 840 | $10,920.00 | | $0.00 | 840 | $10,920.00 |
| Clerical/Word Processing | 10.00 | 340 | $3,400.00 | | $0.00 | 340 | $3,400.00 |
| Accounting | 14.00 | | $0.00 | | $0.00 | 0 | $0.00 |
| Contract Manager | 19.50 | | $0.00 | | $0.00 | 0 | $0.00 |
| Technical Editor | 13.26 | 40 | $530.40 | | $0.00 | 40 | $530.40 |
| Health & Safety Assistant | 12.50 | | $0.00 | | $0.00 | 0 | $0.00 |
| Health & Safety Manager (CIH) | 24.00 | | $0.00 | | $0.00 | 0 | $0.00 |
| Quality Assurance Assistant | 19.71 | 517 | $10,190.07 | | $0.00 | 517 | $10,190.07 |
| Cad Operator/Sr. Draftsperson | 15.60 | 400 | $6,240.00 | | $0.00 | 400 | $6,240.00 |
| Draftsperson | 10.50 | | $0.00 | | $0.00 | 0 | $0.00 |
| Air Quality Engineer/Scientist | 16.94 | | $0.00 | | $0.00 | 0 | $0.00 |
| Chemist | 16.35 | 160 | $2,616.00 | | $0.00 | 160 | $2,616.00 |
| Senior Chemist (CLP Qual.) | 22.44 | 80 | $1,795.20 | | $0.00 | 80 | $1,795.20 |
| Public Health Specialist | 29.58 | 704 | $20,824.32 | | $0.00 | 704 | $20,824.32 |
| Technician | 10.50 | 176 | $1,848.00 | | $0.00 | 176 | $1,848.00 |
| Community Relations Specialist | 19.23 | 184 | $3,538.32 | | $0.00 | 184 | $3,538.32 |
| Technical Expert (PhD-Sci/Eng) | 35.00 | 498 | $17,430.00 | | $0.00 | 498 | $17,430.00 |
| **TOTAL DIRECT LABOR** | XXXXX | 11,387 | $275,350.31 | 0 | $0.00 | 11,387 | $275,350.31 |
| X Fringe (.3312) | XXXXX | XXXXX | $91,196.02 | XXXXX | $0.00 | XXXXX | $91,196.02 |
| X Overhead (.5413) | XXXXX | XXXXX | $198,411.53 | XXXXX | $0.00 | XXXXX | $198,411.53 |
| X G&A (.0733) | XXXXX | XXXXX | $41,411.41 | XXXXX | $0.00 | XXXXX | $41,411.41 |
| **Total Burdened Dir. Labor** | XXXXX | XXXXX | $606,369.27 | XXXXX | $0.00 | XXXXX | $606,369.27 |

**PART II - OTHER DIRECT COSTS** (Itemized on Supplement Sheets)

| ITEM | UNIT COST(S) | QUANTITY | TOTAL |
|---|---|---|---|
| Telephone/Communications | $5.00/Call | | $3,600.00 |
| Postage/Freight | See attached sheet | | $6,165.00 |
| Expendables | See attached sheet | | $400.00 |
| Equipment | See attached sheet | | $1,350.00 |
| | | | |
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| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Subtotal | | | $11,515.00 |
| X G&A (.0733) | | | $844.05 |
| **TOTAL** | XXXXXXX | XXXXXXX | $12,359.05 |

**PART III - TRAVEL** (Itemized on Supplement Sheets)

| | | | |
|---|---|---|---|
| Subsistence | $26.00 | | $6,812.00 |
| Car/Fuel | $50.00 | | $7,050.00 |
| Field Van/Fuel | $80.00 | | $2,400.00 |
| Lodging | See attached sheet | | $8,786.00 |
| Airfare | See attached sheet | | $6,306.00 |
| | | | |
| | | | |
| Subtotal | | | $31,354.00 |
| X G&A (.0733) | | | $2,298.25 |
| **TOTAL TRAVEL EXPENSES** | XXXXX | XXXXX | $33,652.25 |

**PART IV - SUBCONTRACTOR SERVICES** (Itemized on Supplement Sheets)

| | | | |
|---|---|---|---|
| Subcontract Drilling | See attached sheet | | $72,076.00 |
| Subcontract Laboratory | See attached sheet | | $236,998.00 |
| Subcontract Survey | See attached sheet | | $19,900.00 |
| Soil Gas Survey & PCPT & GPR & EM Survey | See attached sheet | | $25,545.00 |
| Other | See attached sheet | | $27,510.00 |
| Subtotal | | | $382,029.00 |
| X G&A (.0733) | | | $28,002.73 |
| **TOTAL SUBCONTRACTOR EXPENSES** | XXXXX | XXXXX | $410,031.73 |
| | | | 438,034.46 |

| | TOTAL | |
|---|---|---|
| | LABOR HOURS | COST(S) |
| **TOTAL PART I** (Direct Labor) | 11,387 | $606,369.27 |
| **TOTAL PART II** (Other Direct Costs) | | $12,359.05 |
| **TOTAL PART III** (Travel Expenses) | | $33,652.25 |
| **SUBTOTAL (Parts I, II, & III)** | | $652,380.57 |
| Award Fee Pool @ 10% x Parts I, II, & III<br>Enter Award Fee % here 10% | | $65,238.06 |
| **Parts I, II, & III TOTAL** | | 717,618.63 |
| **TOTAL PART IV** (Subcontractor Expenses) | | $410,031.73 |
| Award Fee Pool @ 4.5 % x Part IV<br>Enter Award Fee % here 4.5 % | | $18,451.43 |
| **Part IV TOTAL** | | $428,483.16 |
| TOTAL: (Parts I, II, & III) | | $717,618.63 |
| (Part IV) | | $428,483.16 |
| **GRAND TOTAL** | | $1,146,101.79 |

| A&E Signature | Date | | Telephone | |
|---|---|---|---|---|
| James R Wallace | 9/25/91 | | 904-656-1293 | |
| **EIC Signature** | **Date** | **Code** | **Code 18C Approval** | **Date** |
| | | | | |

*COST SUMMARY*
*PROJECT NAME: RI/FS, OUs 1, 2 & 7, NAS Cecil Field*
*RESPONSIBLE:*

| DESCRIPTION | BASE | RATE | AMOUNT |
|---|---|---|---|
| TASK ORDER MANAGER | 2720 | $29.00 | $78,880.00 |
| QUALITY ASSURANCE MANAGER | 80 | $25.50 | $2,040.00 |
| SENIOR ENGINEER | 496 | $29.00 | $14,384.00 |
| SENIOR SCIENTIST | 2170 | $29.10 | $63,147.00 |
| ENGINEER | 790 | $18.50 | $14,615.00 |
| GEOLOGIST | 536 | $19.00 | $10,184.00 |
| HYDROLOGIST | 480 | $20.00 | $9,600.00 |
| TOXICOLOGIST | 176 | $18.00 | $3,168.00 |
| SENIOR HYDROLOGIST | | $33.79 | |
| CHEMIST | 160 | $16.35 | $2,616.00 |
| TECHNICIAN | 176 | $10.50 | $1,848.00 |
| SENIOR CHEMIST | 80 | $22.44 | $1,795.20 |
| PUBLIC HEALTH SPECIALIST | 704 | $29.58 | $20,824.32 |
| COMMUNITY RELATIONS SPECIALIST | 184 | $19.23 | $3,538.32 |
| TECHNICAL EXPERT | 498 | $35.00 | $17,430.00 |
| PROJECT ASSISTANT | 840 | $13.00 | $10,920.00 |
| CLERK/WORD PROCESSOR | 340 | $10.00 | $3,400.00 |
| CAD OPERATOR/SR DRAFTSMAN | 400 | $15.60 | $6,240.00 |
| QUALITY ASSURANCE ASSISTANT | 517 | $19.71 | $10,190.07 |
| TECHNICAL EDITOR | 40 | $13.26 | $530.40 |
| SUBTOTAL DIRECT LABOR | 11387 | | $275,350.31 |
| OVERHEAD | 275350.31 | 0.3312 | $91,196.02 |
| FRINGE | 366546.33 | 0.5413 | $198,411.53 |
| G&A – LABOR | 564957.86 | 0.0733 | $41,411.41 |
| TOTAL LABOR | | | $806,369.27 |
| AIRFARE | | | $6,306.00 |
| CAR/FUEL | | $50.00 | $7,050.00 |
| FIELD VAN/FUEL | | $80.00 | $2,400.00 |
| PER DIEM | | $26.00 | $6,812.00 |
| LODGING | | | $8,786.00 |
| SUBTOTAL TRAVEL | | | $31,354.00 |
| G&A – TRAVEL | 31354 | 0.0733 | $2,298.25 |
| TOTAL TRAVEL | | | $33,652.25 |
| PHONE & TELEX | | $5.00 | $3,600.00 |
| SHIPPING | | | $6,165.00 |
| EQUIPMENT | | | $1,350.00 |
| EXPENDABLES | | | $400.00 |
| SUBTOTAL OTHER DIRECT COSTS | | | $11,515.00 |
| G&A – OTHER DIRECT COSTS | 11515.00 | 0.0733 | $844.05 |
| TOTAL OTHER DIRECT COSTS | | | $12,359.05 |
| SUBCONTRACT | | | |
| DRILLING | | | $72,076.00 |
| LABORATORY | | | $236,998.00 |
| SURVEY | | | $19,900.00 |
| PCPT | | | $6,300.00 |
| BENCH TESTS | | | |
| GPR & EM SURVEY | | | $7,000.00 |
| SOIL GAS SURVEY | | | $12,245.00 |
| OTHER | | | $27,510.00 |
| SUBTOTAL SUBCONTRACT | | | $382,029.00 |
| G&A – SUBCONTRACT | 382029 | 0.0733 | $28,002.73 |
| TOTAL SUBCONTRACT | | | $410,031.73 |
| TOTAL COST | | | $1,062,412.30 |
| AWARD FEE – LABOR, TRAVEL, ODC | 652380.57 | 0.1 | $65,238.06 |
| AWARD FEE – SUBCONTRACT | 410031.73 | 0.045 | $18,451.43 |
| TOTAL PRICE | | | $1,146,101.78 |

# CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, the cost or pricing data (as defined in Section 15.801 of the Federal Acquisition Regulation (FAR) and required under FAR Subsection 15.804-2) submitted, either actually or by specific identification in writing, to the Contracting Officer or the Contracting Officer's representative in support of **Statement of Work No. 010, RI/FS, Operable Units 1, 2, and 7, Naval Air Station Jacksonville, Florida** are accurate, complete, and current as of **24 September 1991**. This certification includes the cost or pricing data supporting any advance agreements and forward pricing rate agreements between the offeror and the Government that are part of the proposal.

**FIRM:** ABB ENVIRONMENTAL SERVICES, INC.

**NAME:** Laurie A. Huffman

Laurie A. Huffman

**TITLE:** CONTRACTS MANAGER

**DATE:** 25 SEPTEMBER 1991