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NAS CECIL FIELD
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ADDENDUM TO THE QUALITY CONTROL PROGRAM PLAN NAS CECIL FIELD FL

10/1/1994

BECHTEL ENVIRONMENTAL INC

ADDENDUM

TO THE

QUALITY CONTROL PROGRAM PLAN

DELIVERY ORDER NO. 008
AT NAS CECIL FIELD, JACKSONVILLE, FLORIDA

Prepared for

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

Under Contract No. N62467-93-D-0936

Prepared by

BECHTEL ENVIRONMENTAL, INC.
OAK RIDGE, TENNESSEE

OCTOBER 1994

REVISION 0

Bechtel Job No. 22567

Approved:	Karen Neely for Hermann Bauer Project Manager	10/19/94 Date
Approved:	 Quality Control Manager	10-19-94 Date
Approved:	 Navy Contracting Officer	4 Nov 94 Date

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1	Inspection Schedule Log
2	Field Inspection Report Form

INTRODUCTION

The purpose of this Quality Control Plan Addendum (QCPA) is to define those activities necessary to provide adequate confidence that the interim remedial action for Operable Unit 2, Tasks 1 and 2, as defined in the Delivery Order (DO) No. 008 at the Naval Air Station (NAS) Cecil Field, Jacksonville, Florida site have been satisfied.

SCOPE OF WORK

This QCPA addresses the site-specific QC requirements for BEI in the completion of Tasks 1 and 2 as defined in DO No. 008. Task 1 is the interim remediation of Site 5 and Task 2 is the interim remediation of Site 17, as defined in DO No. 008. Detailed descriptions of the Scope of Work are defined in the Remediation Work Plan for Site 5 and the Remediation Work Plan for Site 17.

Bechtel

Oak Ridge Corporate Center
151 Lafayette Drive
P.O. Box 350
Oak Ridge, Tennessee 37831-0350

Facsimile: (615) 220-2100

August 9, 1994

Mr. Donald R. Xiques
Bechtel Environmental, Inc.
151 Lafayette Drive
Oak Ridge, Tennessee 37830

Dear Mr. Xiques:

Pursuant to Section 6.7.1(b) of the Quality Control Requirements contained within the Naval Facilities Engineering Command, Southern Division, Contract No. N62467-93-D-0936, please be advised that you have been appointed as Quality Control Manager for the environmental remedial action project for Delivery Order No. 008 at the Naval Air Station, Cecil Field, Jacksonville, Florida. You have full responsibility and authority for implementation of the quality control program, including stop work authority in accordance with the Quality Control Program Plan.

Since the Quality Assurance Department maintains a reporting relationship independent of that for project personnel, you will report directly to me and coordinate project activities with the Project Manager.

Should you have any questions, please feel free to contact me.

Sincerely,

for

Bret Peacock
BEI Manager of Quality Control

BP/pw

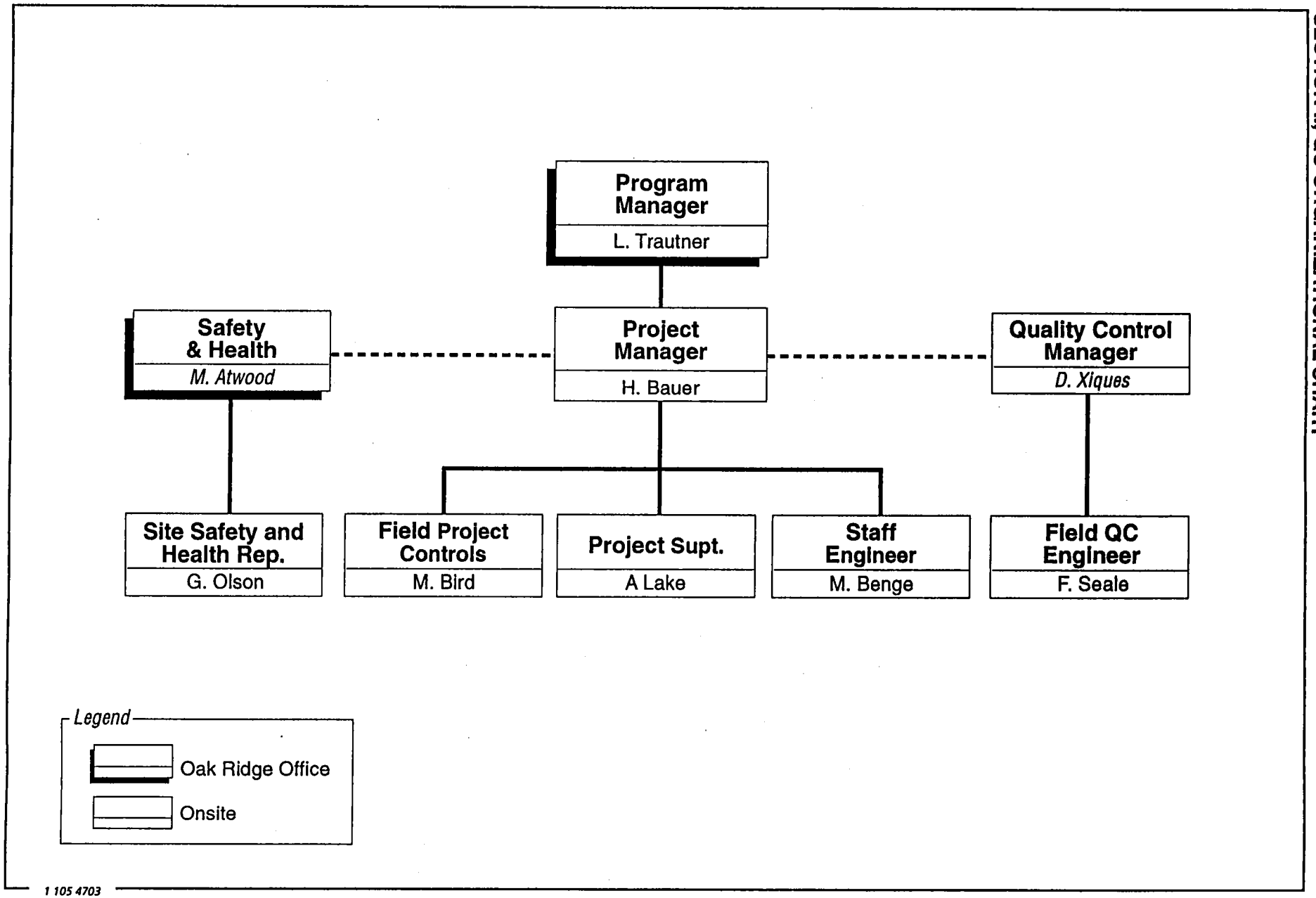

Figure 2-1
Project Organization

SECTION III - NAMES AND QUALIFICATIONS

Professional Resume

Name: Donald R. Xiques **Job Title:** Senior QA Engineer

Proposed Project Title: QC Manager

Years' Experience with Proposing Firm: 5

Years' Experience with Other Firm: 2

Education (Degrees, year, specialization): BA, 1985, Chemistry,
Maryville College, Maryville, Tennessee

Active Registration:

Certified ASME NQA-1 Lead Auditor, 1994

Health and Safety Training:

40-Hr OSHA Training

Experience and Qualifications:

Donald Xiques has over seven years experience in environmental analytical testing and environmental remediation projects. He is currently in Quality Assurance and is an ASME NQA-1 certified Lead Auditor. He has developed, written, implemented, and administered plans and reports associated with remedial action projects. Mr. Xiques' environmental restoration project experience encompasses all phases, from RI/FS through remedial design and remedial action, including subcontract administration.

Mr. Xiques is currently a Senior Quality Assurance Engineer for BEI. He performs office and field audits or surveillances of BEI projects, vendors, and subcontractors. He also reviews procedures, plans, contracts, and other project guidance for administrative and technical compliance. He reviews federal laws, state and local standards, statutes and regulations for applicability to assigned project. He coordinates corrective action processes related to Quality Assurance matters.

As a Senior Quality Assurance Engineer for the Bechtel National, Inc. (BNI), Oak Ridge National Laboratories Remedial Investigation/Feasibility Study, Mr. Xiques was responsible for the implementation and verification of Bechtel's Quality Assurance/Quality Control Program. He also provided field Quality Control and technical quality assessment for the ORNL RI/FS being conducted for Martin Marietta Energy Systems.

As the Quality Control Systems Manager for the Lapari Landfill Site, Mr. Xiques was responsible for the administration, coordination, and oversight of the implementation of QA/QC aspects of the Chemical Quality Management and Sampling Plan. Duties included review of all QA/QC data and reports from site and subcontract laboratories; preparation of QA/QC submittals; performing routine internal audits and inspections of on-site and subcontract laboratories, treatment system operations and QA/QC records; review nonconformance reports related to laboratory equipment, data, sampling or analytical procedures; and periodic monitoring of sampling and analyses activities.

While working as QA Engineer for the Department of Energy's Formerly Utilized Sites Remedial Action Plan (FUSRAP),and its characterization and remedial action activities associated with 14 sites located in 7 states, Mr. Xiques conducted Quality Assurance audits, and surveillance to assess technical and program-

matic procedures relating to planning and implementation of Remedial Investigations/Feasibility Studies Plans, Project Instruction Guides, Environmental Monitoring Plans, QA Plans, Corrective Action Requests, Project Procedures, RD/RA Plans. Mr. Xiques also provided assessment of technical adequacy of chemical, laboratory and data issues. He provided procedural oversight on routine and special event engineering and technology, operations, construction, environmental monitoring and procurement activities. He performed office and field audits of the project and its subcontractors.

Mr. Xiques developed the Project Procedures Manual, BEI Quality Assurance Program Plan, Standard Operating Procedures, and numerous Quality Assurance Project Plans as the QA Engineer for BEI's EPA Region IV Alternative Remediation Contracting Strategies Projects. He conducted and directed audit and surveillance coverage for office and field operations. He participated in field sampling, field laboratory and field operations. Mr. Xiques also provided technical guidance on analytical issues, and assisted in the development of Work Plans (WPs) and Field Sampling Plans (FSPs). He conducted audits of office and field activities.

As the QA Engineer for Special Environmental Projects, Mr. Xiques directed Quality Assurance/Quality Control activities for commercial projects. Activities included the responsibility for quality documentation and submittals; development of audit and surveillance schedules; and implementation of BEI's Quality program. Mr. Xiques developed and implemented Quality Assurance Program Plans and Quality Assurance Project plans for remedial investigations/feasibility studies, treatability studies, and remedial design/remedial actions projects for commercial clients. He provided audit and surveillance coverage for office and field operations. He participated in field laboratory and documentation activities. He has performed field activities including directing drilling activities, acquiring field measurements and collecting analytical samples.

At International Technology in Oak Ridge, TN, Mr. Xiques conducted Gas Chromatography/Mass Spectroscopy as Chemist I. As an analytical chemist he was EPA CLP qualified to conduct quantitative and qualitative analysis of hazardous and mixed-wastes (hazardous-radioactive) for volatile and semi-volatile organic compounds using gas chromatography/mass spectroscopy. His responsibilities included sample management, sample preparation and analysis, procedure development, data package development and validation.

List of Publications:

Use of Field Analytical Data to Guide
A Remedial Investigation of PCB Contaminated Sediments - USEPA Superfund Conference XIV 1993.

Quantitative Evaluation of Sampling Results for Site Environmental Reports - DOE Oak Ridge Model Conference on Waste Management & Environmental Restoration - 1992.

Functional Evaluation of QC Samples, A Proactive Approach - USEPA Seventh Annual Waste Testing and Quality Assurance Symposium - 1991.

Professional Data:

United States Navy

Rank: Lieutenant (O-3) 1635 Naval Intelligence Officer USNR-R, Attached to Commander, Amphibious Group 2, Detachment 0867, Naval Air Station Atlanta, Marietta, GA.
Source of Commission: Aviation Officers Candidate School, Naval Air Station Pensacola, Florida.
Attached to the Naval Air Training Unit Flying Training Squadron 457, Mather AFB, Sacramento, California and Fixed Wing Training Squadron 10, Naval Air Station Pensacola Florida.

SECTION IV - DUTIES, RESPONSIBILITIES, AND AUTHORITIES OF QC PERSONNEL

The duties, responsibilities, and the authorities of the assigned to NAS Cecil Field QC personnel for tasks associated with DO No. 008 are described in detail in Section IV of the Quality Control Plan (QCP).

SECTION V - OUTSIDE ORGANIZATIONS

Outside organizations may be employed by Bechtel as required by the BEI Interim Remediation/Source Removal Work Plan to provide specific services. These outside organizations for DO No. 008 may include but are not limited to:

- Analytical Services
- Clearing & Grubbing
- Civil Survey
- Utilities & Facilities
- Well Closure/Installation & Development
- Environmental Safety & Health Equipment
- Miscellaneous Support
- Typing, Reproduction, & Clerical Support Clerk
- Transport/Treatment/Disposal

SECTION VI - SUBMITTALS

Submittals and reporting requirements for DO No. 008 tasks are specified in Section VI of the QCP. The QC Manager for NAS Cecil Field is responsible for the completion and submission of all required QC submittals as specified in the QCP.

SECTION VII - INSPECTION SYSTEM

Inspections will be conducted per Section VII of the QCP. Inspections to be conducted for tasks associated with DO No. 008 are listed in the Inspection Schedule Log (Attachment 1). Actual dates for QC inspections will be provided at the preconstruction meeting.

SECTION VIII - TESTING

Testing for NAS Cecil Field includes, but is not limited to, offsite analytical laboratory analysis, offsite geotechnical laboratory testing, and onsite field screening for organic and inorganic parameters. Testing is addressed in Section VIII of the QCP. Additional requirements associated with testing, such as calibration, audits, subcontractor submittals, and data review are addressed in the QCP.

SECTION IX - REWORK PROCEDURES

Rework procedures and associated requirements for DO No. 008 are addressed in Section IX of the QCP.

SECTION X - DOCUMENTATION

Refer to Section X of the QCP for QC documentation requirements for tasks associated with DO No. 008.

SECTION XI - CERTIFICATIONS

Certification requirements are addressed in Section XI of the QCP.

SECTION XII - PROGRESS SCHEDULE

Scheduling will be performed by BEI and is discussed in detail in the BEI Remediation Work Plan for DO No. 008.

Issue Date _____
By _____
Sheet 1 of 1

INSPECTION SCHEDULE LOG

DO Reference	Item	Inspection Phase & Schedule									Remarks
		Preparatory			Initial			Follow-up			
		Sched	Actual	By	Sched	Actual	By	Sched	Actual	By	
	Preparatory Phase Completion										
	Soil - Sampling										
	Chain-of-Custody										
	Waste Management										
	Equipment Decontamination Area										
	Field Measurements										
	Sample Preservation & Container										
	Sample Containers and Sampling										
	Packaging Samples for Transportation										
	Logbook Protocols										
	QC Sample Verification										

ATTACHMENT 1

FIELD INSPECTION REPORT

Location/Description: _____

_____

Item & Spec Nos.	Accept	Reject	Date	Remarks
PREPARATORY				
100 Sample Preservation & Container Material				
105 Sample Containers and Sampling Devices				
000 Preparatory-Phase Completion				
INITIAL				
015 Soil - Sampling				
025 Chain-of-Custody				
050 Equipment Decontamination Area				
055 Field Measurements				
140 Packaging Samples for Transportation				
150 Logbook Protocols				
FOLLOW-UP				
045 Waste Management				
COMPLETION				

By: _____ Date: _____

QC Manager/QC Field Engineer

ATTACHMENT 2

ADDENDUM NO. 6

TO THE

SITE SAFETY AND HEALTH PLAN

DELIVERY ORDER NO. 0008, TASKS 1, 2, AND 3, AT

NAS CECIL FIELD, FLORIDA

Prepared for

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

Contract No. N62467-93-D-0936

Prepared by

BECHTEL ENVIRONMENTAL, INC.
OAK RIDGE, TENNESSEE

REVISION 1

OCTOBER 1994

Bechtel Job No. 22567

Approved:	Elizabeth Kelley Bechtel Corp. Safety and Health Services	10-7-94 Date
Approved:	Ram Singh Singh, C.I.H. for Mark Atwood Program Safety and Health Manager/CIH	10-7-94 Date
Approved:	T.J. Trautman Project Manager	10-7-94 Date
Approved:	_____ Navy Contracting Officer	_____ Date

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1.0 GENERAL INFORMATION

This Task-Specific Safety and Health Plan (TSSHP) addresses safety and health issues related to the remediation of the sources of contamination at the Naval Air Station (NAS) Cecil Field, Site 5, 17, and 103rd Street. In addition to these task-specific requirements, general requirements are given in the Naval Remedial Action Contract (Navy RAC) Program Safety and Health Plan (PSHP), the Site Safety and Health Plan (SSHP) for Navy RAC Bases, the safety and health standard operating procedures (Navy RAC SOPs) for the Navy RAC program, and other work controlling documents such as hazardous work permits (HWPs).

The TSSHP has been developed in compliance with requirements of 29 CFR 1910.120 (b) for a Site Safety and Health Plan.

The TSSHP is issued under controlled distribution. A TSSHP may be revised during the annul review process or at any time it is apparent that there has been a change in site conditions or scope of work. In addition, the Bechtel Environmental, Inc. (BEI) Program Safety and Health Manager (SHM) and/or the Navy Contracting Officer (CO) reserves the right to require changes to the TSSHP and operations as necessary to ensure the safety and health of persons on or near the site. BEI will revise the TSSHP if it does not seem adequate to protect site workers, the general public, or the environment. Any revision to an approved TSSHP shall require the written concurrence of the CO and the SHM. Changes are typically done by completing the Field Change Notices/Requests found in the SSHP.

All site safety and health personnel shall be familiar with the information and requirements contained in the TSSHP. Levels of protection may be up or downgraded by the Site Safety and Health Representative (SSHR) based on site conditions and air sampling results.

1.1 IDENTIFICATION

Site Name:	NAS Cecil Field
Site Location:	Jacksonville, Florida
Client:	Department of the Navy Southern Division Naval Facilities Engineering Command (SOUTHDIVNAVFACENGCOM)

1.2 DESCRIPTION OF ACTIVITIES

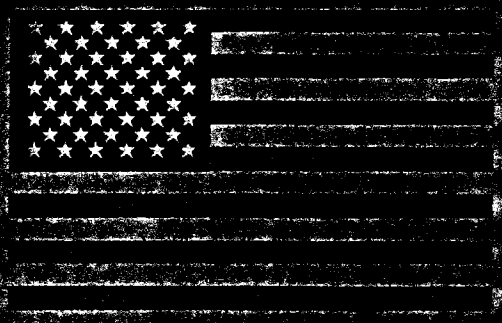
The following general categories of work are covered by this plan:

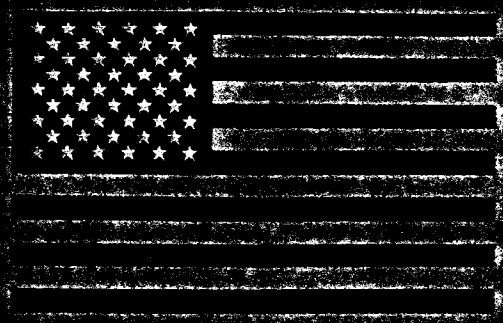
- Remedial Action (RA) of soil and groundwater.

Table 1-1 shows the activities and their descriptions.

1.3 SITE HISTORY

The location, description, and history of the NAS Cecil Field are found in Attachment D of the SSHP.





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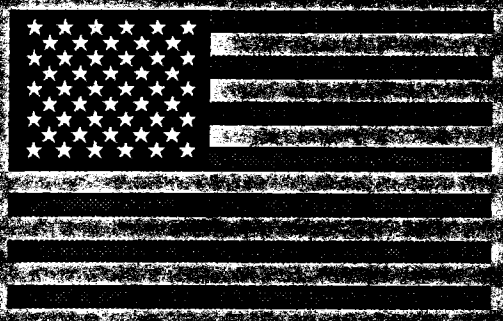

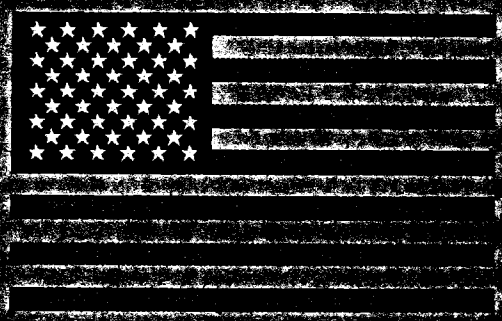

FILENAME: CCN00B36

Table 1-1
Activity Description

Site[a]	Activity[b]	Description
5, 17, and 103rd	1	Mobilization/Demobilization Installation of office trailers and utilities
5, 17, and 103rd	2	Clear, grub, and restore site using bushhog, dozers, chain saws, and/or graders
5	3	Construct landfarm using tractors, discs, and plows
17 and 103rd	4	Construct thermal and groundwater (GW) treatment facility (e.g., site fencing, utility connections, concrete pads, etc.) using backhoe, augers, and concrete mixers
5, 17, and 103rd	5	Excavate contaminated soils using backhoes, and front-end loaders
5 and 17	6	Transfer contaminated soils to treatment area using front-end loaders and small dump trucks
5 and 17	7	Well closure
5 and 17	8	Drill and develop wells using drill rigs and air compressors
17	9	Thermal treatment of soils using loaders and thermal treatment units
5 and 17	10	Sample soil piles
5, 17, and 103rd	11	Sample soils in excavation
103rd	12	Sample groundwater from GW treatment
5, 17, and 103rd	13	Decontamination of equipment using pressurized spray equipment
5	14	Operation and maintenance (O&M) of landfarm using tractors, discs, and plows
103rd	15	O&M of GW system
5	16	Landfarm operation

[a]Chemical contaminations for each site is listed in Table 2-1 and 2-2.
[b]Personal protective equipment for each activity is listed in Table 7-1.

1.3.1 Site Type and Regulatory Status

- Inactive
- Residential, 103rd Street
- Civilian, 103rd Street
- Other
  - Disposal pits Sites 5 and 17
  - Service station 103rd Street
- Federal Government
  a. CERCLA/SARA: USEPA
  b. RCRA : USEPA
  c. OSHA : 29 CFR 1910 and 1926, State
  d. Other : Florida Drinking Water Standard, Florida Petroleum Contaminated Site Cleanup criteria, and Florida soil thermal treatment facility

1.3.2 Site Owner

United States Navy

2.0 HAZARD ANALYSIS

2.1 TYPES OF HAZARDS

2.1.1 Physicochemical Hazards Listing

- Flammable
- Ingestion exposure
- Mutagen
- Carcinogen
- Toxic organic chemicals
- Skin absorption
- Inhalation exposure
- Contact exposure
- Neurotoxin
- Oxygen deficient
- Toxic inorganic chemicals
- OSHA specific hazard substance standards
  - 29 CFR 1926.62 Lead

2.1.2 Biological Hazards Listing

- Poisonous plants (poison ivy, poison oak)
- Dangerous wildlife (snakes)
- Insects (mosquitospiders, ticks, etc.)

2.1.3 Radiation Hazard Listing

- UV sunlight

2.1.4 Physical Hazards and General Safety Hazard Listing

- Ladders
- Heavy lifting
- Pinch points
- Intense sunlight
- Trenching
- Hand tools (power tools)
- Excavations
- Underground utilities
- Slips, trips, falls
- Traffic
- High-pressure water
- Overhead utilities
- Flying debris
- Heavy equipment use
- Electrical connections
- Heat
- Noise

2.1.5 Other Hazards

Animals

2.2 KNOWN AND/OR SUSPECTED CHEMICAL HAZARDOUS MATERIALS ONSITE

2.2.1 Chemical Hazards

Known or suspected hazardous chemicals identified include the constituents of oil and petroleum products for Site 5 and 17, and JP5 for 103rd Street.

2.2.2 Chemical Hazard Assessment

The chemical hazard for the work is moderate. Tables 2-1 and 2-2 indicate chemicals found and their known maximum concentration ranges in soils and groundwater. Table 2-3 shows the exposure limits, symptoms of exposure, harmful effects of exposure, routes of exposure, and methods for detection.

The SSHR will implement an air monitoring program to confirm on a day-to-day basis that chemical hazards are not present. If monitoring results indicate levels of airborne chemical contamination, or if new information indicates soil, water, or sediment contamination is significant, this TSSHP will be revised to address the hazards.

3.0 MEDICAL SURVEILLANCE

In addition to the basic medical examination described in Navy RAC SOP 2.1.80, workers participating in the activities covered under TSSHP shall receive the tests specified in Table 3-1. Workers outside regulated areas **with no potential for exposure are exempted** from the medical surveillance program. Exemption is determined on a case-by-case basis by the SHM.

Table 3-1
Bioassay Requirements for Suspected Chemical Contaminants and Analytical Methods

Contaminant	Analytical Method
Lead	Blood sample analysis which determines levels of lead and zinc protoporphyrin (ZPP).

4.0 TRAINING

Project training requirements are contained in Sections 9 and 11 of the PSHP. General training requirements are specified in Section 10 of the Navy RAC SSHP.

Prior to starting work, each worker assigned to perform tasks covered under this TSSHP will receive an initial safety and health orientation training from NAS Cecil Field, or designee. Workers outside regulated areas **with no potential for exposure** are exempted from HAZWOPER training requirements. This exemption is determined on a case-by-case basis by the SHM.

Table 2-1
Maximum Contaminant Concentrations in Soils

Contaminant	Site 5	Site 17	103rd Street*
Volatiles			
Acetone	5.2 mg/kg	3.9 mg/kg	NS
Benzene	ND	8.9 mg/kg	NS
Ethylbenzene	5.7 mg/kg	1.4 mg/kg	NS
Toluene	8.7 mg/kg	9.2 mg/kg	NS
Trichloroethene	ND	7.1 mg/kg	NS
Total Xylene	70 mg/kg	14 mg/kg	NS
Total recoverable hydrocarbons	28,000 mg/kg	ND	NS
Semivolatiles			
Acenaphthene	ND	1.2 mg/kg	NS
2-Methylnaphthalene	30 mg/kg	ND	NS
Napthalene	26 mg/kg	15 mg/kg	NS
Pentachlorophenol	ND	2.5 mg/kg	NS
Aroclor 1260	1 mg/kg	ND	
Metals			
Chromium	ND	24.1 mg/kg	NS
Lead	ND	26.1 mg/kg	NS

*No soil analysis was provided. However, organic vapor analyzer (OVA) reading were reported. For soils from surface to 33 feet below surface, OVA readings ranged from 1 ppm to > 5,000 ppm.
NS - Not samples

Sources:

Site 5: "Focused Feasibility Study Site 5, Operable Unit 2, Source Control Remedial Alternatives," April 1994, Southern Division Naval Facilities Engineering Command, North Charleston, SC

Site 17: "Focused Feasibility Study Site 5, Operable Unit 2, Source Control Remedial Alternatives," June 1993, Southern Division Naval Facilities Engineering Command, North Charleston, SC

103rd Street: "Remedial Action Plan for the NAS-Cecil Field Jet Fuel Line," August 13, 1991, Professional Service Industries, Inc.

Table 2-2
Maximum Concentrations in Groundwater

Contaminant	Site 5[a]	Site 17[b]	103rd Street
Volatiles			
Benzene	NS	NS	4.4 mg/l
Ethylbenzene	NS	NS	1.4 mg/l
Toluene	NS	NS	5.1 mg/l
Xylenes	NS	NS	6.9 mg/l
Naphthalene	NS	NS	25 mg/l
Metals			
Lead	NS	NS	0.079 mg/l

[a]No analytical data was provided. Text stated prior sampling had shown acetone, MEK, toluene, naphthalene, lead and chromium in concentrations above Florida Drinking Water Quality Standard.
[b]No analytical data was provided. Text stated that prior sampling had found "A variety of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total recoverable petroleum hydrocarbons (TRPH) were found in the samples."

Sources

Site 5: "Focused Feasibility Study Site 5, Operable Unit 2, Source Control Remedial Alternatives," April 1994, Southern Division Naval Facilities Engineering Command, North Charleston, SC

Site 17: "Focused Feasibility Study Site 5, Operable Unit 2, Source Control Remedial Alternatives," June 1993, Southern Division Naval Facilities Engineering Command, North Charleston, SC

103rd Street: "Remedial Action Plan for the NAS-Cecil Field Jet Fuel Line," August 13, 1991, Professional Service Industries, Inc.

NS - Not Sampled

Table 2-3
Chemical Hazard Information

Chemical	Exposure limits		Harmful effects	Symptoms	Method of analysis	Routes of exposure
			Volatiles			
Acetone	AL PEL STEL IDLH	 750 ppm 1000 ppm 20000 ppm	Respiratory system, skin	Irritated eyes, nose, throat, headache, dizziness	Charcoal tube	Inhalation, ingestion, contact
Benzene	AL PEL STEL TLV IDLH	0.5 ppm 1 ppm 5 ppm 0.1 ppm 2000 ppm	Blood, CSN, skin, bone marrow, eyes, respiratory system, carcinogen	Irritated eyes, nose, respiratory system giddiness, Headache, Nausea; staggering gait; fatigue; anorexia, lassitude; dermatitis, asthma	Charcoal tube	Inhalation, skin absorption, ingestion, contact
Ethylbenzene	AL PEL STEL TLV IDLH	50 ppm 100 ppm 125 ppm 100 ppm 2000 ppm	Eyes, upper respiratory, system, skin, CNS	Irritated eyes, mucous membrane; headache; dermatitis; narcolespy, coma	Charcoal tube	Inhalation, ingestion, contact
Toluene, (Methyl Benzene)	AL PEL STEL TLV IDLH	50 ppm 100 ppm 150 ppm 50 ppm 2000 ppm	CNS, liver, kidneys, skin	Irritated nose, throat; choking, paroxysmal cough; chest pain; rtster soreness; nausea, vomiting, abdominal pain; bronchitis spasm, pulmonary edema; asthma	Charcoal tube	Inhalation, skin absorption, ingestion, contact
Trichloroethene (TCE)	AL PEL STEL TLV IDLH	25 ppm 50 ppm 100 ppm 50 ppm 1000 ppm	Respiratory system, heart, liver, kidneys, CNS, skin	Headache, vertigo, visual disturbance; tremors; somnolence; nausea, vomiting; irritated eyes; dermatitis	Charcoal tube	Inhalation, ingestion, contact
Xylene	AL PEL STEL TLV IDLH	50 ppm 100 ppm 150 ppm 100 ppm 1000 ppm	CNS, eyes, GI tract, blood, liver, kidneys	Dizziness, excited, drowsey, incoherent, staggering gait; irritated eyes, nose, throat	Charcoal tube	Inhalation, skin absorption, ingestion, contact

Table 2-3
Chemical Hazard Information (Continued)

Chemical	Exposure limits		Harmful effects	Symptoms	Method of analysis	Routes of exposure
Semi-volatiles						
Acenaphthene	AL PEL STEL TLV IDLH	 0.2 mg/m^3 0.2 mg/m^3 	Respiratory system, bladder, kidneys, skin	Dermal blemishes; respiratory irritation; dikney irritation; bronchitis	2 Micro m 37 mm PTFE Membrane filter & Sorbent	Inhalation, skin absorption, ingestion, contact
Naphthalene	AL PEL STEL TLV IDLH	5 ppm 10 ppm 15 ppm 10 ppm 500 ppm	Eyes, blood, liver, kidneys, skin, CNS	Dermal blemishes; respiratory irritation; kidney irritation; bronchitis	2 Micro m 37 mm PTFE Membrane filter & bubbler	Inhalation, skin absorption, ingestion, contact
Pentachlorophenol	AL PEL STEL TLV IDLH	 0.5 mg/m^3 150 mg/m^3	CVS, respiratory system, eyes, liver, kidneys, skin, CNS	Irritated eyes, nose, throat; sneezing, coughing; weakness; anorexia; sweating; headache, dizziness; nausea, vomiting; dyspnea, chest pain, dermatitis		Inhalation, skin absorption, ingestion, contact
Metals						
Chromium	AL PEL STEL TLV IDLH	0.5 mg/m^3 1 mg/m^3 NA .05 mg/m^3 500 mg/m^3	Respiratory system, skin	Histologic fibrosis os lung; sensetization, dermatitis	0.8 Micro M MCEF filter	Inhalation, ingestion
Chromium VI	AL PEL STEL TLV IDLH0	.05 mg/m^3 0.1 mg/m^3 NA .05mg/m^{3}m30 g/m^3	Carcinogen	Skin sensitization; decreased lung function	0.8 Micro M MCEF filter	Inhalation, ingestion, contact
Lead	AL PEL STEL TLV IDLH	30 mg/m^3 50 mg/m^3 NA 150 mg/m^3 700 mg/m^3	GI tract, CNS, kidneys, blood, gingival tissue	Weakness, lassitude, insomnia; facial pallor; pale eyes; anorecia; abdominal pain; anemia; tremors; irritated eyes	0.8 Micro M MCEF filter	Inhalation, ingestion, contact

5.0 SITE CONTROLS

Program requirements for site controls are specified in Section 4 of the PSHP and Navy RAC SOP 2.1.40, "Site Control." General site control requirements for NAS Cecil Field are specified in Section 4 of the SSHP. At a minimum, HWPs will be initiated for activities requiring Level C protection (see Table 7-1).

6.0 SAFETY AND HEALTH SURVEYS AND MONITORING

6.1 SAFETY AND HEALTH REQUIREMENTS FOR SPECIAL TECHNOLOGIES

NAS Cecil Field will be utilizing three special technologies. They are:

- Land Farming for Site 5
- Low temperature thermal desorbtion for Site 17
- Air stripping of volatile organics from groundwater at the 103rd Street site

6.1.1 Land Farming

Air emissions to protect the general public will be accomplished by sampling as per EPA method T014. Samples will be positioned as determined by a windrose for the site with two samples down wind and one sample up wind. Samples will be taken for the first four weeks of land farming whenever the soils are being worked. Should the samples show no detectable volatile organics, the frequency of sampling will be reduced to once a week. Table 6-2 shows the action level and response action at the perimeter of the land farm.

6.1.2 Low Temperature Thermal Desorption (LTTD)

LTTD will be accomplished using an efficient scrubber and/or filtering system to remove volatile organic hydrocarbons and metals from air emissions. Emissions will be monitored to determine compliance with the state of Florida air emission standards. Section 6.3 defines the criteria, action levels, and responses based on air emissions in the work place and at the site perimeter.

6.1.3 Air Stripping

Groundwater at 103rd Street will have volatile organics removed via air stripping. Emissions will be monitored to determine compliance with the state of Florida air emission standards. Section 6.3 defines the criteria, action levels, and responses based on air emissions in the work place and at the site perimeter.

6.2 AIR MONITORING EQUIPMENT

The air monitoring devices used will be (1) a flame ionization and a photoionization detector; (2) a three- or four-gas meter capable of determining oxygen (O_2), lower explosive limit (LEL), carbon monoxide (CO), and, if needed, hydrogen sulfide (H_2S); (3) colormetric detector tubes for benzene; (4) personal sampling pumps and filter media for benzene and lead; and (5) equipment to perform EPA T014 monitoring.

6.3 WORK STATION AND PERIMETER MONITORING REQUIREMENTS AND ACTION LEVELS

Table 6-1 provides occupational and perimeter monitoring action levels and responses to known and suspected site hazards. The table also provides the required instrumentation and frequency of monitoring. Perimeter monitoring will be conducted based on exposure levels found in the work area. Action levels acceptable at the perimeter are found in Table 6-2.

7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Program requirements for components of Level A, B, C and D levels of protection are specified in Sections 8 and 10 of the PSHP and Section 8 and 9 of the SSHP. PPE for specific activities are shown in Table 7-1.

The SSHR will specify PPE requirements in HWPs. Due to the contamination it is anticipated that most work will be in Level D. Table 7-1 shows the activity, expected hazards, level of protection, and possible upgrade in the level of protection. Respirator canisters will be specified by the SSHR. Table 7-2 lists S&H and SOP references for specific hazards. Table 7-3 is a list of equipment expected to be needed.

Equipment for Levels C and D, and Construction Attire (C.A.) personal protection is as follows:

- Level B Protection
  - Positive-pressure, pressure-demand self-contained breathing apparatus (SCBA)
  - Chemical resistant clothing (e.g., polyethylene or Saranex)
  - Inner PVC or vinyl gloves
  - Outer Neoprene or nitrile gloves
  - Sturdy work shoes
  - Hard hat
  - Neoprene or rubber overboots

- Level C Protection
  - Full face air purifying respirator
  - Organic vapor cartridges with HEPA filter
  - Chemical resistant clothing (e.g., polyethylene or Saranex)
  - Inner PVC or vinyl gloves
  - Outer Neoprene or nitrile gloves
  - Sturdy work shoes
  - Hard hat
  - Neoprene or rubber overboots

- Level D Protection
  - Hard hat
  - Chemical resistant clothing (e.g., polyethylene or Saranex)
  - Sturdy work shoes
  - Neoprene or rubber overboots

Table 6-1
Work Station Air Monitoring Requirements and Action Levels

Activity	Instrument or Contaminant	Frequency of Monitoring	Action Levels	Response
5 - 16	Four-gas meter	Initial and periodic	LEL < 5%	No action, periodic monitoring
			5% ≤ LEL < 10%	Continuous monitoring
			LEL ≥ 10%	Stop work, engineering controls
			O_2 ≤ 19.5%	Stop work, engineering controls
			O_2 ≥ 22%	Stop work, engineering controls
			CO ≥ 200 ppm (instantaneous)	Stop work, engineering controls
			CO ≥ 1 ppm (routine)	Exhaust equipment away from source. Continue monitoring.
			CO ≥ 35 ppm TWA	Stop work, engineering controls
			H_2S ≥ 10 ppm TWA	Stop work, engineering controls
			H_2S ≥ 300 ppm (instantaneous)	Stop work, engineering controls
	FID/PID [a]	Initial and periodic	< 25 ppm	Level D, engineering controls
			≥ 25 ppm	Level C, engineering controls
			≥ 1000 ppm	Level B, engineering controls, perimeter monitoring
	FID/PID [b]	Initial and periodic	< 1 ppm	Level D, engineering controls
			≥ 1 ppm	Level C, engineering controls
			≥ 10 ppm	Stop work, engineering controls, perimeter monitoring
			≥ 50 ppm	Level B
	Lead[b]	Initial and periodic	≥ 30 $\mu g/m^3$	Medical surveillance training, perimeter monitoring, Bioassay
			≥ 50 $\mu g/m^3$ ≤ 2,500 $\mu g/m^3$	Regulated areas, change and shower rooms, engineering controls, Level C

Table 6-1
Work Station Air Monitoring Requirement and Action Levels (cont.)

Activity	Instrument or Contaminant	Frequency of Monitoring	Action Levels	Response
5-16	Benzene tube	Initial and periodic	< 0.5 ppm	No action.
			≥ 0.5 ppm	Medical surveillance, training
			≥ 1 ppm	Engineering controls Level C, perimeter monitoring
16	T014	Initial and periodic	≥ 1 ppm benzene	Stop work, engineering controls
			≥ 12.8 $\mu g/m^3$	See table 6-2

[a]Based on TCE, PEL of 25 ppm.
[b]If Benzene is detected with tubes.

Table 6-2
Perimeter Monitoring, Action Levels, and Responses[a]

Contaminant	Action Level	Response
Lead	12.8 $\mu g/m^3$ (1.5 ppb)	Stop work, engineering controls
Benzene	1 ppm	Stop work, engineering controls

[a]Based on T014 EPA method.

Table 7-1
Levels of Personal Protective Equipment

Activity[1]	A	B	C	D	E	F	G	H	I	J	K	Level of Protection	Possible Upgrade
1	X			X						X	X	C.A.	NA
2	X			X	X				X	X	X	C.A.	NA
3	X	X		X						X		C.A.	NA
4	X	X		X						X		C.A.	NA
5	X	X		X	X	X	X	X	X	X		D	C
6	X			X	X		X	X	X	X		D	C
7	X			X	X	X	X	X	X	X		D	C
8	X			X	X	X	X	X	X	X		D	C
9	X		X	X	X		X	X	X	X		D	C
10					X		X	X	X	X		D	C
11[1]	X				X	X	X	X	X	X		C	B
12						X		X	X			D	C
13	X			X	X	X	X	X	X	X		D	C
14	X			X	X		X	X	X	X		D	C
15	X			X		X		X	X	X		C.A.[b] (Modified)	NA
16	X			X	X		X	X	X	X		C	B

[a]Due to pit depths, this task is a confined space entry.
[b]Modified C.A. includes additional requirement of outer neoprene or nitrile gloves and neoprene or rubber overboots.

Key: A Physical Injury Hazard
B Overhead/underground Utility Hazard
C Fire/explosion Hazard
D Noise Hazard
E Contact with Contaminated Soil Hazard
F Contact with Contaminated Water Hazard
G Inhalation Hazard
H Ingestion Hazard
I Skin Contact Hazard
J Heat/cold Stress Hazard
K Vandalism Hazard

Table 7-2
S&H and SOP References for Specific Hazards

Hazard*	Safety & Health (S&H) Document/ SOP References
Physical Injury Hazard	S&H, SOP 2.1.17A, 2.1.40A; TSSHP 2.5.1
Overhead/Underground Utility Hazard	S&H, SOP 2.1.40B, 2.1.40C
Fire Explosion Hazard	S&H, SOP 2.1.24A
Noise Hazard	S&H, SOP 2.1.21
Contact with Contaminated Soil Hazard	S&H, SOP 2.1.60A, 2.1.60B, 2.1.70
Contact with Contaminated Water Hazard	S&H, SOP 2.1.60A, 2.1.60B, 2.1.70
Inhalation Hazard	S&H, SOP 2.1.15B, 2.1.30H, 2.1.65D, 2.1.80
Ingestion Hazard	S&H, SOP 2.1.15B, 2.1.110
Skin Contact Hazard	S&H, SOP 2.1.70A
Heat/Cold Stress Hazard	S&H, SOP 2.1.60C
Vandalism Hazard	S&H, SOP 2.1.40; 2.1.15A

Table 7-3
Equipment List

MSA Full face respirator, or equivalent
MSA GMC-H cartridges, or equivalent
Respirator cleaner/sanitizer
Respirator cleaning basins
Soft bristle cleaning brushes
Rinse basins
Clean storage bags, zip-loc
Face shields
Polycoated disposable coveralls
Neoprene overboots
Nitrile outer gloves
Vinyl inner liners
Outer cotton gloves
Leather work gloves
Goggles
Safety glasses
Ear plugs
Hard hats
Spectacle kits
Orange safety vests
Sunscreen
Absorbent material
Air horn
First aid kit
PID analyzer
Electrolyte replenishment fluid (e.g., Gatorade)
Eye wash station
Eye wash bottles, 500 ml
Duct tape
Insect repellent
Fire extinguisher 5-lb ABC
Fire extinguisher - 20 lb ABC
Safety barrier tape
Yellow and black rope
3/8 O.D. Tygon tubing
Cotton inner liners
Drager pump/tubes for benzene
Smoke tubes for respirator fit testing
Bloodborne pathogen waste container/signs
Lockout/tagout locks and tags
Stretcher
Blanket
Dustpans/broom
Street broom
Coal shovel
10 mil plastic trash bags
12 inch by 12 inch plastic bags
Wind sock with pole
FID OVA analyzer
Personal sampling pump w/low flow capacity
Cal gas 37 ft^3 10 ppm methane
Cal gas 37 ft^3 100 ppm methane
Cal gas 37 ft^3 1,000 ppm methane
Cal gas 37 ft^3 30% LEL methane
Hydrogen gas 300 ft^3 GC grade
Industrial Scientific Combustible gas meter (or equivalent)
Gilibrator (or equivalent)
Noise SLM/DOS with calibrator
Cal gas 37 ft^3 10 ppm H_2S
Cal gas 37 ft^3 250 ppm isobutylene
Cal gas 37 ft^3 90 ppm CO
Cal gas 37 ft^3 zero air

- Neoprene or nitrile gloves with PVC or vinyl inner gloves (if there is a potential for dermal exposure - otherwise leather gloves may be used)
- Chemical safety goggles (must be worn for groundwater sampling and well pumping if splash hazard is present)

- Construction Attire (C.A.)
  - Hard hat
  - Sturdy work shoes
  - Sleeved shirt
  - Safety glasses
  - Long pants

All personal protective equipment used during the course of this field investigation must meet the following applicable OSHA standards:

Type of Protection	Regulation	Source
Eye and face	29 CFR 1910.133	ANSI Z87.1-1968
Respiratory	29 CFR 1910.134	ANSI Z88.1-1980
Head	29 CFR 1910.135	ANSI Z89.1-1969
Foot	29 CFR 1910.136	ANSI Z41.1-1967

ANSI = American National Standards Institute

The above designated levels of protection will be upgraded or downgraded by the SSHR based on site conditions and air monitoring results.

8.0 EMERGENCY RESPONSE

Emergency response and notification procedures are specified in Attachment A of the SSHP. From the site, call 911 for police, rescue, fire department, or ambulance. All telephone numbers have been verified and the site contamination has been explained to the responder of the phone, especially to the medical providers (Table 8-1).

EMERGENCY TELEPHONE NUMBER FOR NAS CECIL FIELD

EMERGENCY SERVICES

POLICE DEPARTMENT	911
RESCUE SERVICE	911
BASE RESCUE	(904) 778-5212
BASE SECURITY	(904) 778-5381
BASE FIRE DEPARTMENT	(904) 778-5333
NAVAL HOSPITAL INFORMATION	(904) 777-7300
ORANGE PARK MEDICAL CENTER (PRIMARY MEDICAL PROVIDERS)	(904) 276-8500
ST. VINCENT'S HOSPITAL (PRIMARY MEDICAL PROVIDERS)	(904) 387-7395
RIVERSIDE HOSPITAL (ALTERNATE MEDICAL PROVIDER)	(904) 387-7070

EMERGENCY CONTACTS

PROJECT S&H MANAGER (MERVIN ATWOOD)	(615) 220-2344 (w) (615) 481-0144 (h)
PROJECT MANAGER (HERMANN BAUER)	(615) 220-2302
PROJECT SCIENTIST (RUSS BARBER)	(615) 220-2203
PROJECT SUPERINTENDENT (BUTCH LAKE)	(615) 220-2321
NAVY ROICC (CDR DENNIS WRIGHT)	(904) 772-5571
NAVY AROICC (WAYNE OEHLMAN)	(904) 772-5571

OTHER CONTACTS

FLORIDA POISON CONTROL CENTER	(800) 282-3171
JACKSONVILLE POISON CONTROL CENTER	(904) 549-4480
NATIONAL RESPONSE CENTER	(800) 424-8802
REGIONAL USEPA EMERGENCY RESPONSE	(904) 488-0190
CHEMICAL REFERRAL CENTER	(800) 262-8200

HOSPITAL ROUTES

A description of routes to the hospitals listed above will be provided and posted onsite by the SSHR during site mobilization.

9.0 HURRICANE AND DESTRUCTIVE WEATHER RESPONSE

Hurricane and destructive weather procedures are specified in Attachment B of the Navy RAC Bases SSHP.

10.0 SPILL PREVENTION AND CONTROL

Spill control procedures are specified in Attachment C of the Navy RAC Bases SSHP.