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FINAL WORK PLAN FOR AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM  
DECOMMISSION SITE 16 OPERABLE UNIT 1 (OU1) MCAS CHERRY PT NC  
6/1/2009  
RHEA

**FINAL  
WORK PLAN**

**OU1 SITE 16**

**AIR SPARGE / SOIL VAPOR EXTRACTION  
SYSTEM DECOMMISSION**

**MCAS CHERRY POINT, NORTH CAROLINA**



**CONTRACT NO. N40085-08-D-1409**  
**CTO: 0005**

**RHĒA PROJECT NO. 397**

**JUNE 2009**

**PREPARED FOR:**



NAVFAC Mid-Atlantic  
NC IPT, Code OPCEV  
C/O LRA Building C  
6526 Hampton Boulevard  
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**PREPARED BY:**



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Project Manager

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## **1.0 INTRODUCTION**

Rhēa Engineers & Consultants, Inc. (Rhēa) is pleased to submit this Work Plan for the decommission of the OU1, Site 16 Air Sparge/Soil Vapor Extraction (AS/SVE) System at Marine Corps Air Station (MCAS) Cherry Point, North Carolina.

This Work Plan describes the field activities associated with the OU1 Site 16 AS/SVE decommission and provides necessary supporting documentation to complete the work safely in accordance with applicable standards, rules, and regulations. Sections of the Work Plan include the following:

- Section 1.0 – A brief introduction describing the project background;
- Section 2.0 – The proposed scope of work and components required for the decommission of the OU1 Site 16 AS/SVE;
- Section 3.0 – The Sampling and Analysis Plan;
- Section 4.0 – The Waste Stream Management Plan;
- Section 5.0 – The Environmental Protection Plan;
- Section 6.0 – The Project Quality Control (QC) Plan;
- Appendix A – Selected AS/SVE System Record Drawings;
- Appendix B – Well Abandonment Record Form; and
- Appendix C – Site Health and Safety Plan with the Hurricane Preparation Plan.

### **1.1 PROJECT BACKGROUND**

#### **1.1.1 Site History and Description**

MCAS Cherry Point is a 13,164-acre military reservation located north of the town of Havelock in southeastern Craven County, North Carolina (Figure 1). The boundaries of MCAS Cherry Point include the Neuse River to the north, Hancock Creek to the east, North Carolina Highway 101 to the south, and an irregular boundary approximately  $\frac{3}{4}$ -mile west of Slocum Creek.

Commissioned in 1942, MCAS Cherry Point currently provides support facilities and services for the Second Marine Aircraft Wing (MAW), the Fleet Readiness Center-East (FRCE), Service Support Detachment 21 of the Second Force Service Support Group (FSSG), the Naval Air Maintenance Training Group Detachment, and the Defense Reutilization and Marketing Office (DRMO). MCAS Cherry Point maintains facilities

for training and support of the Atlantic Fleet Marine Force (FMF) aviation units, and is designated as a primary aviation supply point.

Historical practices and land use at MCAS Cherry Point have resulted in contamination of the environment in certain areas. To address this contamination, the U.S. Navy Installation Restoration Program (IRP) has been implemented at MCAS Cherry Point, and is managed by the MCAS Cherry Point Environmental Affairs Department (EAD) and Naval Facilities Engineering Command (NAVFAC).

### **1.1.2 OU1 and Site 16 Background**

OU1 is an industrial area in the southern portion of the Air Station, and covers an area of over 565 acres. Much of the area is covered with buildings and pavement, including portions of the flight line. The East Prong of Slocum Creek (EPSC) forms the western boundary of OU1. The other boundaries include C Street and Sandy Branch to the northwest and portions of the flight line and runways to the northeast and southeast. The location of OU1 is shown on Figure 2.

OU1 comprises more than 70 sites, Solid Waste Management Units (SWMUs), and other potential sources of contamination. FRCE and the DRMO are the primary tenants of OU1 and are located in the east-central portion of OU1. FRCE is a large aircraft assembly and repair complex. DRMO manages surplus/salvaged materials and the Air Station's hazardous waste.

The IRP at MCAS Cherry Point has two inactive remedial action systems within OU1. These include the AS/SVE system at Site 16 and the central hot spot groundwater pump and treat system in the NADEP area.

The western and northern edges of Site 16 are bounded by EPSC and Sandy Branch, respectively; these streams converge at the northwestern corner of the landfill. The site slopes to the west from Roosevelt Boulevard, but is relatively flat near EPSC and Sandy Branch.

Between 1946 and 1948, the landfill at Site 16 was reportedly used as a disposal site for miscellaneous wastes generated by MCAS Cherry Point, including asbestos, steel storage tanks, and drums containing petroleum products. An asphalt plant was formerly located near the site for use during the construction of MCAS Cherry Point. The site has also been used for the disposal of clean fill from excavation activities.

The site is currently used for storage and waste management activities. A permitted municipal solid waste transfer facility is located near the center of the site. Storage sheds for recyclable materials, an impounded storage area, and a storage building are located on the northern portion of the site. Residential areas are located less than 1/2 mile west of Site 16 on the opposite side of EPSC.

Site 16 has been under investigation since the earliest stages of environmental work conducted at MCAS Cherry Point. Site 16 was identified in the Initial Assessment Study (IAS) in 1983 and was listed in the 1988 RCRA Facility Assessment (RFA). Site 16 is also identified as SWMU I-16 in the MCAS Cherry Point RCRA Part B Permit. According to the IAS and RFA, the site covered approximately 11 acres.

Previous investigation activities included a soil gas survey, the results of which were used to determine the locations of soil borings and monitoring wells that were installed at the site. Forested wetlands at Site 16 have also been delineated. Additional monitoring wells were installed upgradient of Site 16 to evaluate the potential impacts of groundwater migration from the upgradient industrial area on groundwater quality at the site.

In 1996, Brown and Root Environmental (B&R) submitted a Focused Remedial Investigation (RI)/ Feasibility Study (FS) for OU1 groundwater at MCAS Cherry Point. This document included the results of the RI, and described four “hot spot” areas within OU1.

One of the groundwater “hot spots” addressed in the RI was Site 16. The RI report presented the analytical results for groundwater samples collected from the surficial aquifer underlying Site 16. These samples indicated the presence of elevated concentrations of Volatile Organic Compounds (VOCs).

Based on the results of the RI, a Focused Feasibility Study (FFS) was prepared to identify remedial alternatives for groundwater at each of the four “hot spots” within OU1. The FFS identified AS/SVE as the preferred interim remedial alternative for Site 16 groundwater.

An AS/SVE system was installed by OHM Remediation Services, Inc. (currently Shaw Environmental, Inc. [Shaw]) in 1998 and began operation in September of that year. Numerous system shutdowns occurred during the first years of operation due to the excessive water extracted by the SVE system (due to the high water table). As a result of the high water table, the AS system had to be operated at extremely low rates to avoid flooding the SVE wells and causing artesian conditions in localized monitoring wells. These low air sparge flow rates reduced the vapor mass collected by the SVE system.

The system achieved an operating efficiency of greater than 90 percent from years 2 through 6, but mechanical/electrical problems related to the AS compressor reduced system efficiency to below 90 percent in 2004. A total of approximately 60 pounds of VOCs were recovered by the SVE system during operation. The system was shut down in March 2005 as it was determined that the AS/SVE system could not achieve the remedial objectives. The “*Final System Closeout Report, Air Sparge/Soil Vapor Extraction System, Operable Unit 1, Site 16*” (AGVIQ/CH2M HILL, August 2006) summarized the operation and performance of the AS/SVE system, and provided the rationale for the system closure.

CH2M HILL’s Technical Memorandum, *MCAS Cherry Point OUI Site 16 Air Sparge/Soil Vapor Extraction (AS/SVE) System Evaluation*, dated November 3, 2008, provided additional details regarding the operational history of the Site 16 AS/SVE system and included the following recommendations:

- Remove the SVE system;
- Abandon the SVE wells;
- Cap the SVE conveyance lines;
- Scrap (or remove for reuse) the SVE blowers, manifolds, and catalytic oxidizers;
- Scrap (or remove for reuse) the AS equipment; and
- Retain the AS wells for possible reuse.

The MCAS Cherry Point IR Partnering Team agreed with the recommendations in the Technical Memorandum and initiated this Work Plan for the decommissioning of the Site 16 AS/SVE system.

### **1.1.3 AS/SVE System Description**

The AS/SVE system (selected record drawings included in Appendix A) includes a network of 40 vertical AS wells, 32 vertical SVE wells, and 12 horizontal SVE wells; two equipment compounds (Compounds No. 1 and No. 2); one AS air compressor; two SVE system blowers; and various ancillary equipment. The vapor extraction wells are piped into Compound No. 1 and Compound No. 2. Each compound is connected to a SVE blower, which are in turn connected to the SVE wells via piping. Compound No. 1 is 30 feet by 35 feet concrete pad, surrounded by a chain link fence, and contains SVE system components only, including: an air/liquid separator, 75 horsepower (HP) rotary lobe positive displacement blower, 2,000 gallon steel liquid holding tank, PVC and galvanized steel pipe of various diameters (1 inch to 12 inches). Compound No. 2 is 33 feet by 40 feet concrete pad, surrounded by a chain link fence, and contains SVE and AS system components, including: a SVE air/liquid separator, 125 HP rotary screw air

compressor, 75 HP rotary lobe positive displacement blower, 2,000 gallon steel liquid holding tank, PVC and galvanized steel pipe of various diameters (1 inch to 12 inches).

The AS/SVE system is laid out in a set of parallel rows of alternating AS and SVE wells. The wells are spaced at 40 to 70 foot intervals along the alignment. Each of the 40 AS wells was constructed using schedule 40 polyvinyl chloride (PVC) and installed to a depth of 46 to 65 feet below ground surface (bgs). The AS screen sections of each well are composed of micro-porous high density polyethylene (HDPE) sparge points. The sparge points are 30 to 38 inches long and have a 2-inch outside diameter (OD). AS wellhead instrumentation includes a ball valve, pressure gauge, relief valve, and a rotameter for measuring air flow rates. The AS wells are designated I-1 through I-40.

Each of the vertical SVE wells was constructed of 2-inch diameter, schedule 40 PVC riser and includes a minimum of 2 to a maximum of 5 feet of 0.020-inch slot width, flush-threaded schedule 40 PVC well screens. The vertical SVE wells were installed in the unsaturated zone above the seasonal high water table. SVE wellhead instrumentation includes a ball valve, vacuum gauge, and a flow port/bleed valve for measuring airflow rates. The vertical SVE wells are designated E-1 through E-28 and E-35 through E-38.

Each of the horizontal SVE wells was constructed of a 2-inch diameter, schedule 40 PVC vertical riser connected to a 10-foot horizontal section of 2-inch diameter 0.020 slotted (on one side) flush threaded schedule 40 PVC screen using a tee. The horizontal SVE wells were installed to a depth of between 4 and 6 feet bgs and are designated E-29 to E-34 and E-39 to E-44.

The “*Remedial Action Report for Construction and Operation of the Air Sparge and Soil Vapor Extraction Remediation System at Operable Unit 01, Site 16*” (RAR) (OHM Remediation Services, Corp., November 2000) provides specific details regarding the design and construction of the AS/SVE system. Appendix A provides selected record drawings of the AS/SVE system from the RAR.

## **2.0 SYSTEM DECOMMISSION**

### **2.1 PROJECT OBJECTIVES**

The objective of the project is to decommission the Site 16 AS/SVE system by abandoning SVE wells and removing existing AS/SVE components. The existing AS wells will be left in place for possible future use.

## **2.2 RHĒA PROJECT TEAM**

Rhēa will lead the system removal efforts and has assembled a team of the following subcontractors to complete the decommissioning of OU1 Site 16 AS/SVE System:

- Military Environmental Construction Corporation (MEC) – MEC is a well-established environmental contractor at MCAS Cherry Point performing both environmental construction and remediation system operation and maintenance activities. On this task, they will schedule and perform the Site 16 system removal, equipment/material disposition, and disposal; and
- Mann Drilling Company (Mann Drilling) – Mann Drilling is a NC state certified well driller and has installed many of the wells at MCAS Cherry Point. Mann Drilling will be decommissioning the SVE wells and grouting the SVE lines.

## **2.3 SCOPE OF WORK**

The project will be completed through the following definable features of work:

1. Pre-Construction Coordination;
2. Setup Temporary Site Controls;
3. Decommission of Wells and Piping;
4. Remove AS/SVE Equipment and Compounds; and
5. Site Restoration.

The following paragraphs describe the activities to occur during each feature of work.

### **2.3.1 Pre-construction Coordination**

Rhēa will provide the approved construction schedule to the MCAS Resident Officer in Charge of Construction (ROICC) office, MCAS EAD, and NAVFAC Remedial Project Manager (RPM). Prior to the proposed mobilization date, coordination with the ROICC office will identify the date, time, and location for the pre-construction conference (Precon). Representatives from the Rhēa Team will attend the Precon along with representatives from EAD, NAVFAC, ROICC, Construction Representative (ConRep), and any additional Base representatives deemed necessary. The Rhēa Team will be prepared to present an overview of the project scope and schedule, discuss logistics, roles, and responsibilities, and respond to questions.

### **2.3.2 Mobilization and Site Setup**

This task will consist of the mobilization of personnel and equipment to the work site, the installation of temporary site controls, and the verification of utilities. Rhēa will use MEC's office trailer and equipment storage trailer that are currently on Gas House Road. Any changes to the current facilities will be coordinated with the ROICC.

Due to the location and largely non-intrusive nature of the work, it is anticipated that site and erosion and sediment (E&S) controls will be limited. Construction fencing, appropriate signage, caution tape, and/or flagging will be used to delineate and mark construction areas. The contractor will be prepared to install silt fence, straw bales, or other erosion and sediment controls as determined by Rhēa's on-site representative. Additional details regarding E&S controls are provided in section 5.2.

An underground survey will be conducted to locate utilities prior to conducting decommissioning activities. In addition, a certified electrician will be contracted to determine that the electricity has been disconnected from the AS/SVE system compounds and that appropriate lock out/tag procedures have been implemented. Appendix A includes the electrical site layout record drawing.

### **2.3.3 Decommission SVE Wells and Piping**

Prior to performing well abandonment activities at an individual SVE well, the fiberglass vault cover, well fitting, concrete pad, and bollards (if present) will be removed. The existing vaults will be abandoned in place and not be removed as part of the decommissioning efforts. Existing jersey barricades will be moved as necessary to provide access to the work areas. Once a SVE well is accessible, abandonment activities will be initiated.

Vertical SVE wells (i.e., E-1 through E-28, E-35 through E-38) will be filled with pumpable bentonite grout, or will be removed and properly disposed of. Vaults that are recessed in the ground will be decommissioned by removing their lids and backfilling the vault to the surrounding grade. Vaults located within the paved areas at the northeastern and eastern portions of the site will be backfilled with a 3,000 psi concrete and brought to within three inches of the surrounding paved grade. The remaining three inches will be hot-patched with asphalt. Recessed vaults located within grassy areas will be backfilled with soil brought to grade, seeded, and mulched.

Horizontal wells (i.e., E-29 through E-34, D-20 through E-44) will be abandoned by exposing each end of the horizontal pipe section and using a pump to fill the pipe with grout; or, alternatively, be removed using heavy construction equipment and properly disposed of.

Efforts will be made to remove any piping that is exposed at the ground surface. Soil surrounding exposed pipe sections will be removed (as necessary), the pipe section will be cut approximately two feet bgs, and the section of pipe remaining in the ground will be filled with grout. Alternatively, the entire pipe section will be removed and properly disposed of.

Mann Drilling will prepare a Well Abandonment Record for each well and submit a copy to Rhēa for review and comment. After Rhēa's review, Mann Drilling will submit the Well Abandonment Record to the North Carolina Department of Environment and Natural Resources (NCDENR) and the EAD. A copy of the Well Abandonment Record is included in Appendix B.

The lateral SVE header pipe (approximately 2,935 feet) and discharge piping (approximately 450 feet) will be grouted in conjunction with the SVE wells. Appendix A provides the system well and piping layouts and vapor extraction well details from the RAR. The piping will be grouted by exposing the two ends of the pipe and filling it with a grout.

The 40 AS wells (approximately 2,586 total feet in length) will be left in place for potential future use. The end of the AS header pipe entering Compound No. 2 will be capped (once the concrete pad is demolished).

#### **2.3.4 Remove AS/SVE Equipment and Compounds**

The SVE system will not be reused; therefore, the system components shall be removed. Two vapor extraction blowers, formerly used for the 44 SVE wells, will be dismantled, properly disposed of, or recycled. SVE wellhead instrumentation and equipment to be removed include a ball valve, vacuum gauge, a flow port/bleed valve, manifolds, conveyance piping, exhaust stack, and catalytic oxidizers. As indicated in Section 2.3.3, the fiberglass access covers over the SVE wells will be removed and disposed of. In addition, the air emissions stack located between Compounds No. 1 and No. 2 will be removed and properly disposed of or recycled.

Air sparge equipment will be reused or scrapped. The main AS component consists of an air compressor, which is no longer considered to have significant value and will be

properly disposed of or recycled. Other AS wellhead instrumentation to be removed includes a ball valve, pressure gauge, relief valve, and a rotameter. The fiberglass access covers over the AS wells will be left in place to protect the AS wells. The well stubups will be sealed with a friction-fit cover.

Compound No. 1 and Compound No. 2 concrete will be demolished and disposed of, and the fencing will be dismantled and either reused or scrapped.

### **2.3.5 Site Restoration**

Site restoration will include removal of temporary site controls, waste stockpiles, or dumpsters. If any earth is disturbed from entering and exiting the site, the disturbed areas will be reseeded with a MCAS Cherry Point-specified seed mixture. Jersey barricades will be repositioned or returned to the on-base staging area prior to demobilization.

The former system compound area(s) will be graded (if necessary), seeded, and mulched. Disturbed vegetated areas will be graded (if necessary), seeded, and mulched. Damage to existing pavement will be repaired.

### **2.3.6 Closeout Report**

A Closeout Report will be prepared and submitted following the system decommission phase of the project. This report will be prepared in accordance with Section 6.5 of this report.

## **2.4 SCHEDULE**

The detailed construction schedule is shown in Figure 3. Rhēa will include the ROICC and EAD in the construction scheduling.

## **3.0 SAMPLING AND ANALYSIS PLAN**

Due to the non-intrusive nature of the Site 16 System Removal, sampling is not necessary; therefore, a Sampling and Analysis Plan is not required.

## **4.0 WASTE STREAM MANAGEMENT PLAN**

### **4.1 WASTE STREAMS**

Wastes will be handled and disposed in accordance with regulations established by the NCDENR, Division of Solid Waste Management. The regulations are summarized in the publication “Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater.” It is noted that North Carolina regulations and programs for non-hazardous and hazardous wastes are compliant with pertinent federal regulations established by the USEPA.

Based on assessment data for the site, the work is expected to involve materials that are not contaminated. It is anticipated that the waste streams associated with the proposed Site 16 system removal will be limited to construction and demolition (C&D) debris.

In the event that the waste is suspected of being contaminated, this waste will be segregated and sampled. The MCAS EAD will be notified immediately should analysis show waste to be hazardous.

### **4.2 WASTE CHARACTERIZATION**

All the waste streams should be common solid waste streams, and as such, will not require waste characterization; however, if waste stream characterization is required, it will be performed in accordance with regulations and disposal facility requirements. Waste characterization will involve completion of written documentation describing the wastes. At a minimum, written documentation for waste characterization will include the following:

- Generator information (include name, address, contact, and phone number);
- Site name (include street/mailling address);
- Sampling activity generating waste (i.e., treatment system operation, etc.);
- Source of contamination (i.e., OWS, storage tanks, etc.);
- Historical chemical use for area (i.e., JP-5, waste oil, etc.);
- Physical state of waste (i.e., solid, liquid, solid with free liquids, etc.); and
- Copies of analytical data for waste.

Waste characterization data will typically be completed on a form (e.g. waste profile) provided by the disposal facility. At a minimum, supporting analytical data will be from sampling completed in accordance with USEPA requirements for non-hazardous wastes. In some cases, specific disposal facilities may require additional sampling and analysis. MCAS EAD personnel, if required, will provide generator certification and signature. An approved (and signed by a representative of the disposal facility) copy of the waste characterization form will be received prior to transportation of any waste to the disposal facility.

### **4.3 DISPOSAL OF WASTE STREAMS**

The preferred disposal method, whenever feasible, will be by a material recovery facility (i.e., recycling, bioremediation, thermal treatment, etc.) instead of landfilling. Water that may be present in the SVE equipment will be transported and disposed of at the Air Station's Industrial Wastewater Treatment Plant (IWTP). An IWTP disposal chit will be obtained from the EAD prior to disposal.

Off-site disposal of solid wastes will be completed by facilities permitted in accordance with applicable requirements. Note that scrap metal or petroleum products to be recycled or reused are not considered wastes. Documentation indicating permitted status for receiving wastes will be received from the facility prior to transporting any waste as follows:

- For off-site disposal facilities for non-hazardous solids, a copy of documentation indicating a permitted facility for the disposal/recovery of petroleum-contaminated special waste; and
- For hazardous wastes, a copy of documentation indicating a permit in accordance with 40 CFR 264.

The disposal facility will be responsible for providing a copy of the final waste manifest and for providing a certificate of disposal for each load of waste received. The contractor will be responsible for returning the disposal facility hazardous waste documentation in a timely manner per 40 CFR 264.71.

## **4.4 HANDLING AND TRANSPORTATION OF WASTE STREAMS**

### **4.4.1 Temporary Storage**

Wastes will be securely stored prior to transportation and disposal. Waste containers will be securely closed except when adding or removing contents. Storage containers will be clearly labeled prior to placement of waste. Labels will indicate the material to be a “Non-Hazardous Waste” (unless analytical data indicate hazardous) and include the site name, media (soil/groundwater), date, and contractor name. Empty containers will be labeled as such. Wastes will typically be stored as follows:

- Roll-offs for solids and debris will be provided with covers and disposable liners. Roll-offs will be inspected upon arrival on site and any roll-off arriving on site with contents will be rejected. Roll-offs will be maintained with covers in-place with all covers securely fastened at the end of each workday. Liners will be disposed of as contaminated debris. Roll-offs will be inspected by the transporter after removal of the liner and decontaminated (either by the transporter at the point of disposal or by returning the roll-off to the site for decontamination) in the event of evidence of liner failure;
- Stockpiles for solids and debris will be provided with liner, cover, and perimeter berm. Liner and cover will be a minimum of 10-mil polyethylene sheeting. The perimeter berm (typically hay bales placed beneath the liner) will be constructed to allow for collection of any free liquids draining from the stockpile. Covers and perimeter berms will be maintained in-place, with all covers and berms secured at the end of each workday. Construction materials for the stockpiles that contact waste will be disposed of as contaminated debris;
- Vehicles transporting stockpiled material will be lined and decontaminated prior to returning to the site;
- Drums for solids and liquids will be orderly arranged and stored in a single on site area whenever possible. Each drum will be provided with its own label. Drums will be maintained, with all covers secured at the end of each workday. Drums containing liquid will be stored with secondary containment.

- Storage tanks for liquids will be provided with covers. Tanks will be inspected upon arrival on site, and any tank arriving on site with contents will be rejected. Tanks will be decontaminated prior to leaving the site. Typically, decontamination will occur immediately following emptying of the tank with decontamination fluids disposed of with the waste. Vehicles transporting bulk waste liquids will be decontaminated (either by the transporter at the point of disposal with decontamination fluids disposed with the waste or by returning to the site for decontamination) following the final load for each vehicle each workday.

Containers and stockpiles will be visually inspected during the work week on a daily basis with prompt response taken in the event of any evidence of failure to contain the wastes. Decontamination of containers/vehicles completed at the point of disposal will be documented by the transporter on the final manifest for the waste. Decontamination of containers/vehicles completed by returning to the site after disposal will be documented on the Daily Contractor Production Report. Daily Contractor Production Reports will be available to the ConRep on a daily basis, and will also be forwarded to the NAVFAC RPM on a daily basis.

Containers and stockpiles will typically be managed so that wastes are stored on site for less than 45 days. In the event that wastes are hazardous, wastes will be stored on site for no longer than 45 days as required by 40 CFR 262 or per MCAS EAD direction. Trucks or roll-off containers used to transport wet soil waste shall be liquid tight or lined with 10 mil plastic sheeting. All trucks transporting waste must be covered before leaving the site.

#### **4.4.2 Transportation of Waste Streams**

Each load of waste will be manifested prior to leaving the site. The manifest form (with multiple carbon copies) will typically be provided by the transporter for the waste and accompany the waste to its final destination. The manifest form will typically identify the waste as non-hazardous. If the waste is hazardous, the manifesting will be completed in accordance with 40 CFR 262. Manifesting of hazardous wastes will be completed by personnel certified with the North Carolina Department of Transportation (USDOT) for

manifesting hazardous materials. Manifests will be signed by an EAD representative, who is trained in the NCDOT regulations regarding waste manifests. At a minimum, the manifest form will include the following information:

- Transporter information (include name, address, contact, and phone number);
- Generator information (include name, address, contact, and phone number);
- Site name (include street/mailling address);
- Description of waste (include reference to characterization form if available);
- Type of container; and
- Quantity of wastes (volumetric estimate).

A transporter licensed with the NCDOT commercial transportation will complete transportation of non-hazardous wastes. In the event wastes are hazardous, the transportation will be completed by a transporter licensed in accordance with 40 CFR 263 and 49 CFR 171-179. A copy of documentation indicating that the transporter has appropriate licenses will be received from the transporter prior to transport of any waste by the transporter. The transporter will be responsible for weighing loads on a scale certified by the North Carolina Department of Commerce, Bureau of Weights and Measures. Weights will be taken for the full and empty containers (or dump truck or tanker truck) for each load. Trucks transporting waste material shall be weighed before leaving MCAS Cherry Point. Disposal quantities will be based on the difference of weights of the full and empty containers (or dump truck or tanker truck). Weights will be denoted on the waste manifest. The transporter with the final manifest will provide copies of weight tickets. Trucks transporting waste will be covered before leaving the Air Station and may require bed liners if waste soil containing liquids or if the dump body could allow waste to escape during transport.

Transportation of wastes will be inventoried the day of transportation from the site using the "Transportation & Disposal Log" provided on Figure 4. A carbon copy of the initial manifest form for each load will be retained on site and attached to the Daily Production Report. Manifests for shipments of hazardous wastes must be returned to EAD indicating receipt of waste.

## **5.0 ENVIRONMENTAL PROTECTION PLAN**

### **5.1 INTRODUCTION**

The work to be performed at the site will incorporate features to protect the environment during system removal activities. All work will be performed in a manner that meets the intent of federal, state, and local regulations designed to protect the environment.

### **5.2 EROSION AND SEDIMENT CONTROL**

As indicated in section 2.3.2, the decommissioning of the AS/SVE system is largely non-intrusive; therefore it is anticipated that erosion and sediment controls will be minimal. Any erosion and sediment controls installed during the site work, will comply with the State of North Carolina Erosion and Sediment Control Regulations. If erosion and sediment control features are necessary, they will include inlet protection, protection of waste stockpile areas, and protection of cleared areas with silt fence. If necessary, silt fence will be installed in existing drainage swales, and catch basin filters will be installed in catch basin inlets to minimize sediment migration into the existing stormwater control system. Grass areas within the site will be graded, seeded, and mulched as soon as possible after removal activities to provide permanent erosion control.

### **5.3 CONSTRUCTION DEBRIS**

Construction activities will generate debris including concrete, pipefittings, galvanized steel pipe, PVC pipe, fiberglass well covers, and system monitoring devices. These materials will be collected during system removal and either disposed of at facilities licensed to accept construction debris, recycled through a material recovery facility, or staged at MEC's laydown area for potential reuse.

### **5.4 WATER POLLUTION CONTROL**

If any wastewater is generated during the system decommission activities, it will be collected and properly disposed of at the IWTP.

### **5.5 DUST CONTROL**

System removal activities will be performed in a manner that limits blowing dust and tracking of mud onto roads and vehicle parking areas. Dust control measures to be employed will include water spray, sweeping, or covering the source with plastic sheeting. Access roads will be swept or hose washed when system removal activities

track mud and dust producing materials onto the road surfaces. Water will only be used when it will not result in objectionable conditions such as, but not limited to, flooding or pollutant discharge.

## **5.6 SPILL CONTAINMENT**

Facilities and equipment will be provided and stored at the site to minimize the environmental impact of accidental fuel or oil spills during construction activities. Fuel for the construction equipment will be brought in by tanker, as needed, and will not be stored at the site. Sacks of petroleum/oil absorbent material will be provided and will be stored in the project trailer for accidental spills of fuel oil or hydraulic line failures.

In the event of a spill, the MCAS Cherry Point Fire Department will be notified by dialing 911 (from an on-base landline phone only) or 252-466-2241, the ROICC will be contacted, and the cleanup will commence immediately. All contaminated materials generated by the cleanup efforts will be packaged and disposed of in accordance with applicable federal, state, and local regulations. A Spill Report form (Figure 5) will be completed by the Site Superintendent and will be submitted to MCAS Cherry Point's EAD through the ROICC within 24 hours of the spill occurrence.

## **5.7 HAZARDOUS MATERIALS**

No hazardous materials will be brought on site for system removal activities.

## **6.0 QUALITY CONTROL PLAN**

### **6.1 SITE QUALITY ADMINISTRATOR**

Mr. Brad McCalla is the Rhēa Site Quality Administrator (SQA) for this demolition project. As the Rhēa Quality Control person assigned to this job, Mr. McCalla has the authority to perform and accept/reject those Quality Control (QC) activities required by the project.

The SQA is responsible for:

- Attending the coordination and mutual understanding meeting with the ROICC prior to the start of field activities, and preparing minutes of that meeting;

- Conducting QC meetings at the site once every two weeks or as appropriate. The SQA shall prepare minutes and provide a copy to the ROICC within seven days. The SQA will notify the ROICC at least 48 hours in advance of each meeting. Items to be covered at the meeting include:
  - Review of minutes of previous meeting;
  - Review of the schedule and status of work;
  - Review of the status of submittals;
  - Review next two weeks of work and documentation required;
  - Schedule three phases of control and testing for next two weeks;
  - Resolve QC and production problems; and
  - Address items that may require revising QC Plan.
  
- Maintaining current and complete records of on site and of site QC operations and activities including the following:
  - Updated Project Schedule;
  - Contractor Production Reports. This report form is included in this Work Plan as Figure 6; and
  - Contractor Quality Control Report that identifies the appropriate quality control phase. The report form is included in this Work Plan as Figure 7.
  
- Performing the three phases of control to determine that work performed complies with the project requirements;
  
- Participation in the development, review and approval (as appropriate) of contractually required submittals; and
  
- Overseeing the performance of testing laboratory or subcontractor activities required for O&M.

In addition to the SQA, Rhēa professional personnel will be on site to support the QC effort as required. The Rhēa support persons will possess the necessary training and experience in the particular area of construction to assist in on site QC.

## 6.2 INVOICE QUALITY ADMINISTRATOR

Ms. Erica DeLattre is the Rhēa Invoice Quality Control Administrator (IQCA) for this project. As the IQCA assigned, Ms. DeLattre has the responsibility to review the cost schedule and cost allocating for this project.

## 6.3 QUALITY CONTROL INSPECTIONS

Quality control inspections will be performed by the SQA. The types of inspections to be performed include preparatory, initial, follow-up, and completion inspections. Inspections will be documented in the Contractor Quality Control Report (CQCR), presented as Figure 7. The details of each of these types of inspections are as follows:

***Preparatory Phase:*** Prior to beginning a particular definable feature of work, drawings, specification requirements, submittal status, material requirements, and on site condition of materials, work methods, and schedule will be reviewed by the SQA. The ROICC will be notified at least two business days in advance of a preparatory inspection, and this notification will be made part of the written record.

***Initial Phase:*** This phase of inspection will document the completeness and acceptability of the particular definable feature of work after a representative portion of the work has been completed.

Deficiency reports and a Rework Items Lists will be completed as necessary. The ROICC will be notified at least two business days in advance of an initial inspection, and this notification will be made part of the written record.

***Follow-up Phase:*** This phase of inspection involves daily surveillance of the definable feature of work to verify conformance to the drawings and specifications. The inspection information will be documented on the daily CQCR. Any noncompliance will be documented on the Rework Items List.

***Completion:*** At the completion of a definable feature of work, the SQA will conduct a completion inspection to make sure all work and rework items are complete and in conformance with the drawings and specifications. The results of this inspection will be documented on the daily CQCR. The government will be invited to participate in each of these levels of inspections.

#### **6.4 DEFINABLE FEATURES OF WORK**

The following is a list of the Definable Features of work for the OU1 Site 16 AS/SVE System Removal:

- Pre-Construction Coordination;
- Setup Temporary Site Controls;
- Decommission of Wells and Piping;
- Remove AS/SVE Equipment; and
- Site Restoration.

#### **6.5 CONSTRUCTION CLOSE-OUT REPORT**

A construction closeout report will be prepared by Rhēa and may include the following sections:

- Introduction;
- Summary of Action;
- Health and Safety Summary;
- Summary of Field Changes;
- Contract Modifications;
- Final Documents;
- Well Abandonment and/or Construction Records;
- Off-Site Transportation and Treatment of Materials; and
- QC Summary Report.

Following the construction phase, the construction closeout report will be submitted to NAVFAC Mid-Atlantic RPM, EAD, and the ROICC.

## **FIGURES**

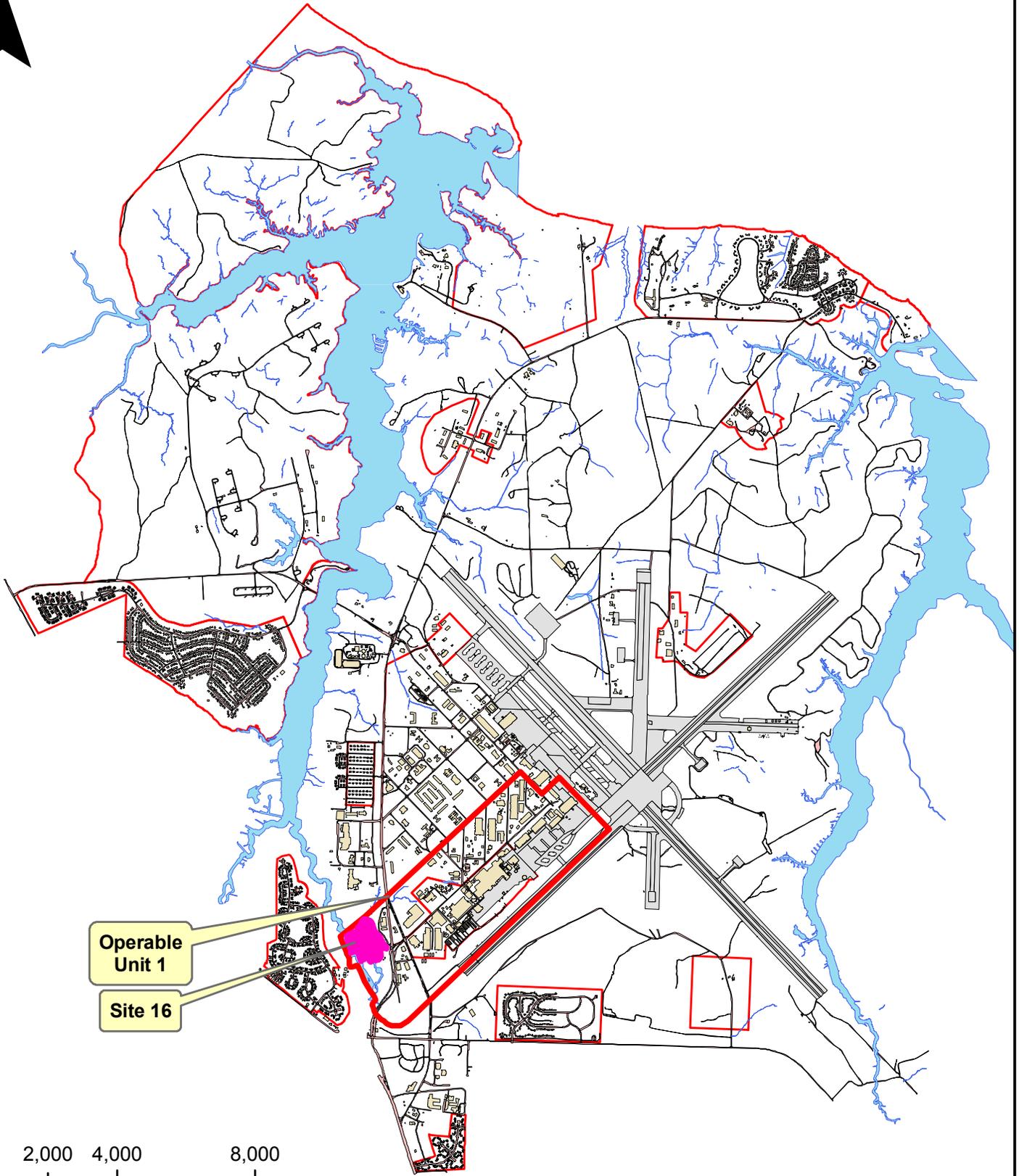


- Legend**
- MCAS Cherry Point
  - County Boundaries
  - Highway
  - Major Road
  - Local Road
  - Major Railroad Lines
  - Stream
  - Water Bodies



**Figure 1**  
**MCAS Cherry Point Location Map**  
**MCAS Cherry Point, North Carolina**

N



Operable Unit 1

Site 16



**Legend**

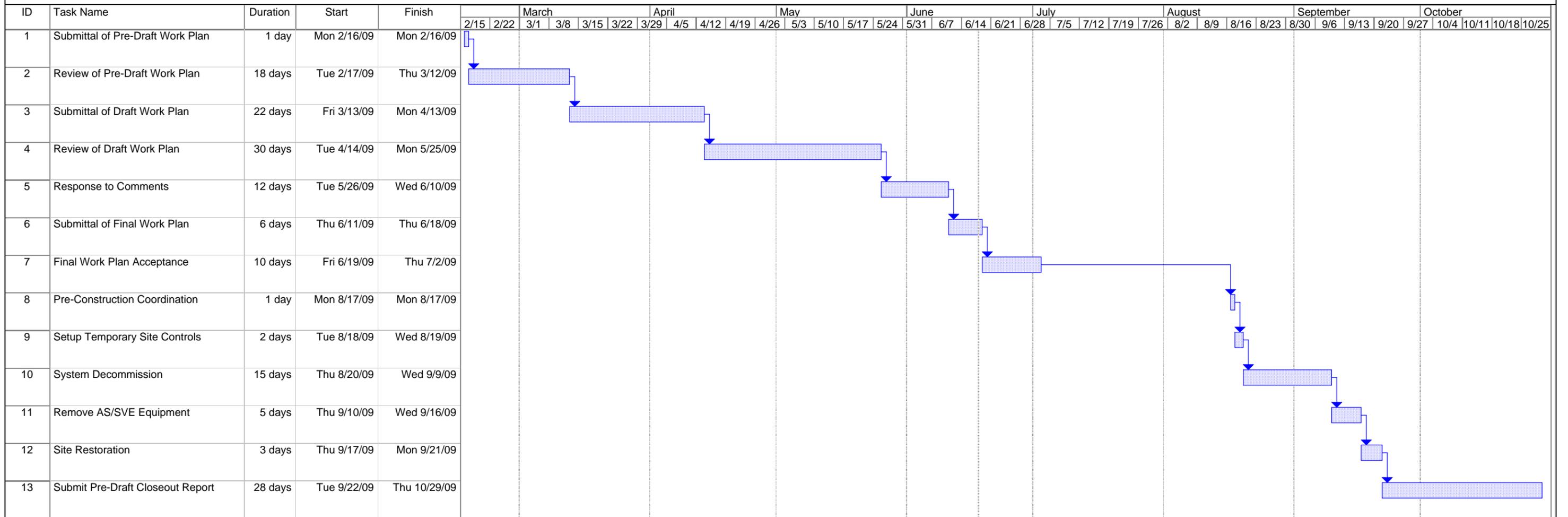
-  Site 16
-  Operable Unit 1
-  Water Bodies
-  Buildings
-  Base Boundary



**RHEA**  
Engineers & Consultants, Inc.

**Figure 2**  
**OU1 Location Map**  
**MCAS Cherry Point, North Carolina**

**Figure 3  
Construction Schedule  
OU1 Site 16 AS/SVE System Decommission**



Project: 397  
Date: Thu 6/18/09

Task		Progress		Summary		External Tasks		Split	
Split		Milestone		Project Summary		External MileTask			



FIGURE 5

AirStaO 5090.7  
21 Feb 2006

<b>SPILL REPORTING FORM (front)</b>			
<b>Unit responsible for spill:</b>		<b>Responder:</b> (circle)	
<b>Name:</b>		Fire Department / CFR	
<b>Phone No.:</b>		<b>Responder's POC:</b>	
<b>Spill location:</b> (pit #, bldg #, etc.)		<b>Reporting Individual signature:</b>	
<b>Date/Time of Spill:</b>		<b>Estimated amount:</b>	
<b>TYPE OF SPILL</b> Check appropriate box		<b>Did Spill Enter a Drainage System:</b> No <input type="checkbox"/> Yes <input type="checkbox"/> Amt: _____	
JP5	<input type="checkbox"/>	Hazardous Material	<input type="checkbox"/>
Used oil	<input type="checkbox"/>	Hazardous Waste	<input type="checkbox"/>
Antifreeze	<input type="checkbox"/>	Diesel fuel	<input type="checkbox"/>
Other		<b>PROCEDURE TO ELIMINATE SPILL</b> Check appropriate box	
		Shutoff pumps	<input type="checkbox"/>
		Over pack container	<input type="checkbox"/>
<b>CLEAN UP</b>		Close valves	<input type="checkbox"/>
		Upright container	<input type="checkbox"/>
Date/time started:		Nothing available	
Date/time ended:		Other	
<b>TYPE OF SURFACE SPILL WAS ON</b> Check appropriate box		<b>SPILL CAUSED BY:</b> Check appropriate box	
Water	<input type="checkbox"/>	Asphalt	<input type="checkbox"/>
Grass	<input type="checkbox"/>	Gravel	<input type="checkbox"/>
Soil	<input type="checkbox"/>	Concrete	<input type="checkbox"/>
Other		Equipment failure	
		Human error	
		Other	
		<b>Is this a recurring problem:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>NOTIFICATION</b>			
<b>Required:</b>		<b>Optional:</b>	
Fire Dept. (911/6-3333) ... <u>or</u> ...		EAD (6-4591) Safety (6-2730)	
Crash Crew (6-2420)		FMD (6-4363)	
Additional comments from the reporting activity:			
<b>EAD Representative:</b>			

FIGURE 5

AirStaO 5090.7  
21 Feb 2006

NOTIFICATION EAD USE ONLY (back)		
<b>Date:</b>	<b>TIME:</b>	<b>EAD Representative:</b>
AGENCY	PHONE #	PERSON CONTACTED
National Response Center (NRC)	1-800-424-8802	
State Emergency Response Center (SERC)	1-800-858-0368	
Local Emergency Planning Commission (LEPC)	252-636-6608	
<b>STATE</b>		
NC Division of Water Quality (Washington) All spills of oil or hazardous substances into or onto any surface waters or wetlands and or the land surface (excluding impervious surfaces) which does not enter surface waters or wetlands and any spills into ground waters	252-946-6481	
NC Division of Water Quality (Wilmington) All spills of oil or hazardous substances into or onto any surface waters or wetlands at MCALF Bogue	910-392-4966	
NC Division of Water Quality (Wilmington) All spills of oil or hazardous substances into the land surface (excluding impervious surfaces) which does not enter surface waters or wetlands and any spills into ground waters at MCALF Bogue	910-350-0800	
<b>EPA</b>		
<b>Other:</b>		
CERCLA HS:	EPCRA Manager:	
EPCRA EHS:		
<b>Additional comments from EAD:</b>		
SPILL RESPONSE DEBRIEF MEETING		
<b>DATE:</b>	<b>TIME:</b>	<b>LOCATION:</b>
ATTENDING MEETING MEMBERS		
DEPARTMENT	NAME	SIGNATURE
Environmental Affairs Dept.		
Fire Division		
Facilities Maintenance Dept.		
Industrial Hygiene		
Joint Safety Office		
NAVAIRDEPOT Representative		
Wing Representative		
Other		
<b>Meeting Recommendations:</b>		

ENCLOSURE ( 2 )



<b>FIGURE 7 - CONTRACTOR QUALITY CONTROL REPORT</b> (ATTACH ADDITIONAL SHEET IF NECESSARY)			SHEET ___ of ___	DATE
CONTRACT NO. N40085-08-D-1409		TASK ORDER NO. 0005		CONTRACTOR Rhea Engineers and Consultants, Inc.
PHASE	Y - YES, N- NO, SEE REMARKS BLANK - NOT APPLICABLE	IDENTIFY DEFINABLE FEATURES OF WORK, LOCATION, AND LIST PERSONNEL PRESENT		
P	THE PLANS AND SPECS HAVE BEEN REVIEWED			
R	THE SUBMITTALS HAVE BEEN APPROVED			
P	MATERIALS COMPLY WITH APPROVED SUBMITTALS			
R	MATERIALS STORED PROPERLY			
T	TESTING PLAN HAS BEEN REVIEWED			
O				
R	WORK METHOD AND SCHEDULE DISCUSSED			
Y				
I	PRELIMINARY WORK WAS DONE CORRECTLY		TESTING PERFORMED AND WHO PERFORMED TEST	
N	SAMPLE HAS BEEN PREPARED/APPROVED			
I	WORKMANSHIP IS SATISFACTORY			
A	TEST RESULTS ARE ACCEPTABLE			
L	WORK IS IN COMPLIANCE WITH THE CONTRACT			
F	WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE		TESTING PERFORMED AND WHO PERFORMED TEST	
O	COMPLETION INSPECTION			
L				
L				
O				
W				
U				
P				
REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)		REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)		
REMARKS:				
On behalf of the contractor, I certify that this report is complete and correct and equipment and materials used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.				
			_____ AUTHORIZED QC MANAGER AT SITE	_____ DATE
<b>GOVERNMENT QUALITY ASSURANCE REPORT</b>				
QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT				
			_____ GOVERNMENT QUALITY CONTROL MANAGER	_____ DATE

## **APPENDIX A**

### **AS/SVE SYSTEM RECORD DRAWINGS**

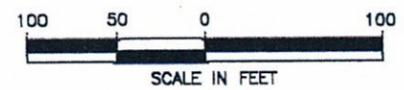
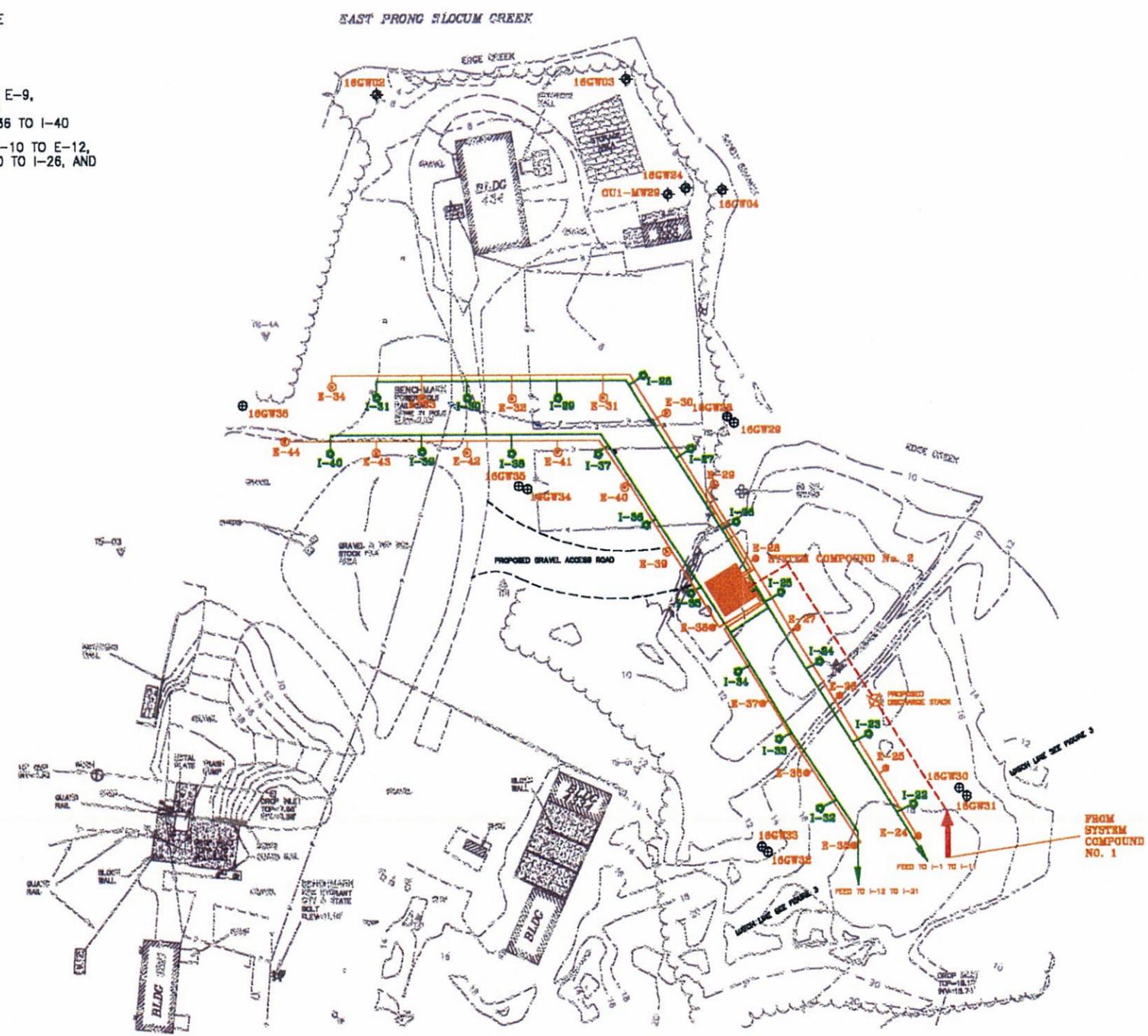
**NOTES:**

1. DISTRIBUTION PIPING IS ABOVE GROUND IN LANDFILL AREA.
2. PIPE ROUTING WILL BE FIELD MODIFIED TO MINIMIZE DISTURBANCE OF LANDSCAPE.
3. WELL LOCATION WILL BE FIELD MODIFIED TO MINIMIZE ENCROACHMENT ON ROADWAYS AND ENSURE ACCESS TO A TRUCK MOUNTED DRILL RIG.
4. ALL THE INJECTION WELLS ARE CONNECTED TO ONE AIR COMPRESSOR IN THE SYSTEM COMPOUND No.2.
5. BELOW GROUND WELL VAULTS ARE E-1, TO E-4, & E-9, E-13 TO E-20, E-29- TO 34 AND E-39 TO E-44 I-1 TO I-4, I-12 TO I-19, I-27 TO I-31 AND I-36 TO I-40
6. ABOVE GROUND WELL HOUSING ARE E-5 TO E-8, E-10 TO E-12, E-21 TO E-28, E-35 TO E-38, I-5 TO I-11, I-20 TO I-26, AND I-32 TO I-35.
7. READY MIX CONCRETE 4000 psi MIX.



**LEGEND:**

- VE DISCHARGE PIPE
- VE HEADER PIPE
- AIR SPARGE HEADER PIPE
- PROPOSED MONITORING WELL
- EXISTING MONITORING WELL
- SOIL BORING
- AIR INJECTION WELL
- VE VERTICAL WELL
- VE HORIZONTAL WELL
- STORM DRAINAGE LINE
- TELEPHONE PEDISTAL
- POST INDICATE VALVE
- CONCRETE
- PIPE W/ HEADWALL
- EDGE OF CREEK
- EDGE OF WETLANDS
- WETLANDS



RECORD DRAWING

918828 VAS-BUILT figure2R.dwg

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

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SR. PROJECT ENGINEER

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DEPT. MANAGER

AT FULL SCALE (OF NOT 1"=SCALE ACCORDINGLY)		REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE	APP.	
	1	FINAL RAMP		12/14/97		
	2	RECORD DRAWING		1/26/98		

CADD FILE: \_\_\_\_\_  
 DRAWN: J. COLLINS  
 DESIGNED: F. HASS  
 CHECKED: G. GILLES  
 CHECKED: \_\_\_\_\_

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

**ATLANTIC DIVISION**

NAVAL STATION NORFOLK, VIRGINIA

CONTRACT N68470-93-D-3032 DELIVERY ORDER NO. 0079

OHM PROJECT No. 918828 MARINE CORPS AIR STATION, CHERRY POINT, N.C.

FIGURE 2

**VE AND AIR SPARGING UNIT No. 2**

**WELL AND PIPING LAYOUT**

FOR OU1, SITE 16

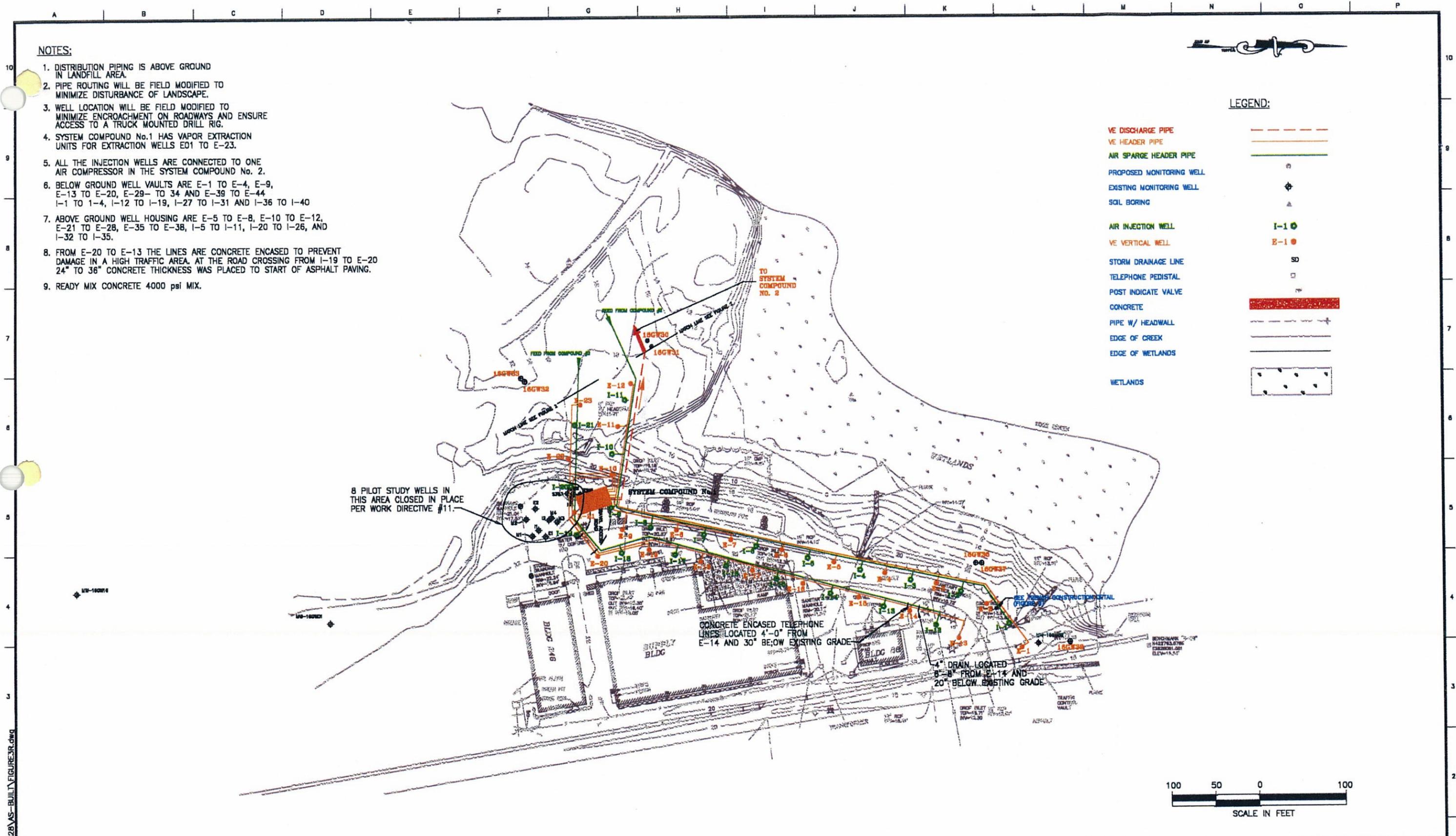
DRAWING NUMBER:	—
SHEET NUMBER:	of
DATE:	12/19/97

**NOTES:**

1. DISTRIBUTION PIPING IS ABOVE GROUND IN LANDFILL AREA.
2. PIPE ROUTING WILL BE FIELD MODIFIED TO MINIMIZE DISTURBANCE OF LANDSCAPE.
3. WELL LOCATION WILL BE FIELD MODIFIED TO MINIMIZE ENCROACHMENT ON ROADWAYS AND ENSURE ACCESS TO A TRUCK MOUNTED DRILL RIG.
4. SYSTEM COMPOUND No.1 HAS VAPOR EXTRACTION UNITS FOR EXTRACTION WELLS E01 TO E-23.
5. ALL THE INJECTION WELLS ARE CONNECTED TO ONE AIR COMPRESSOR IN THE SYSTEM COMPOUND No. 2.
6. BELOW GROUND WELL VAULTS ARE E-1 TO E-4, E-9, E-13 TO E-20, E-29- TO 34 AND E-39 TO E-44 I-1 TO I-4, I-12 TO I-19, I-27 TO I-31 AND I-36 TO I-40
7. ABOVE GROUND WELL HOUSING ARE E-5 TO E-8, E-10 TO E-12, E-21 TO E-28, E-35 TO E-38, I-5 TO I-11, I-20 TO I-26, AND I-32 TO I-35.
8. FROM E-20 TO E-13 THE LINES ARE CONCRETE ENCASED TO PREVENT DAMAGE IN A HIGH TRAFFIC AREA. AT THE ROAD CROSSING FROM I-19 TO E-20 24" TO 36" CONCRETE THICKNESS WAS PLACED TO START OF ASPHALT PAVING.
9. READY MIX CONCRETE 4000 psi MIX.

**LEGEND:**

- VE DISCHARGE PIPE
- VE HEADER PIPE
- AIR SPARGE HEADER PIPE
- PROPOSED MONITORING WELL
- EXISTING MONITORING WELL
- SOIL BORING
- AIR INJECTION WELL
- VE VERTICAL WELL
- STORM DRAINAGE LINE
- TELEPHONE PEDISTAL
- POST INDICATE VALVE
- CONCRETE
- PIPE W/ HEADWALL
- EDGE OF CREEK
- EDGE OF WETLANDS
- WETLANDS



8 PILOT STUDY WELLS IN THIS AREA CLOSED IN PLACE PER WORK DIRECTIVE #11.

CONCRETE ENCASED TELEPHONE LINES LOCATED 4'-0" FROM E-14 AND 30" BELOW EXISTING GRADE

4" DRAIN LOCATED 6'-8" FROM E-14 AND 20" BELOW EXISTING GRADE

**OHM Remediation Services Corp.**  
Norcross, Georgia

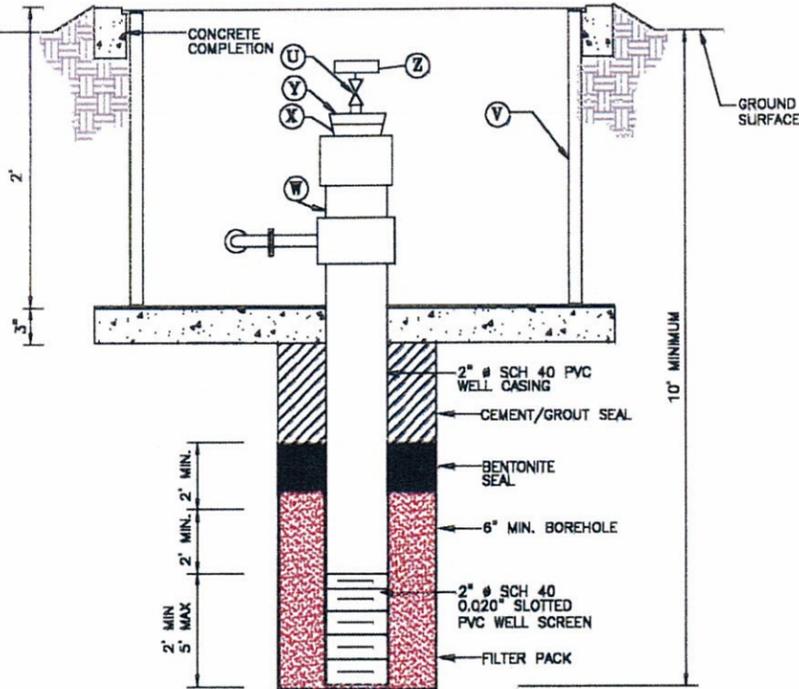
SUBMITTED: \_\_\_\_\_ PROJECT MANAGER DATE: \_\_\_\_\_  
APPROVED: \_\_\_\_\_ SR. PROJECT ENGINEER DATE: \_\_\_\_\_  
APPROVED: \_\_\_\_\_ DEPT. MANAGER DATE: \_\_\_\_\_

AT FULL SCALE (IF NOT 1"=50' ACCORDINGLY)		ZONE	REV.	DESCRIPTION	BY	DATE	APP.
CADD FILE:			1	FINAL RAMP		1/18/97	
DRAWN: J. COLLINS			2	RECORD DRAWING		1/28/98	
DESIGNED: F. HAAS							
CHECKED: G. GILLES							
CHECKED:							

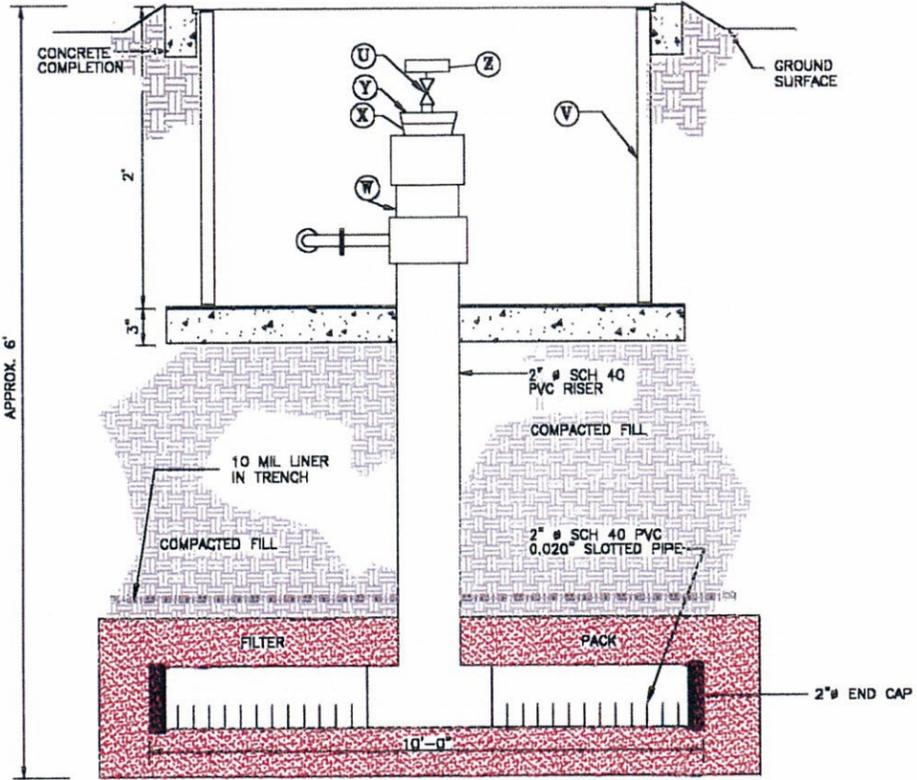
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**ATLANTIC DIVISION**  
NAVAL STATION NORFOLK, VIRGINIA  
CONTRACT N62470-93-D-3032 DELIVERY ORDER NO. 0079  
OEM PROJECT No. 918828 MARINE CORPS AIR STATION, CHERRY POINT, N.C.

**FIGURE 3**  
VE AND AIR SPARGING UNIT No. 1  
WELL AND PIPING LAYOUT  
FOR OU1, SITE 16

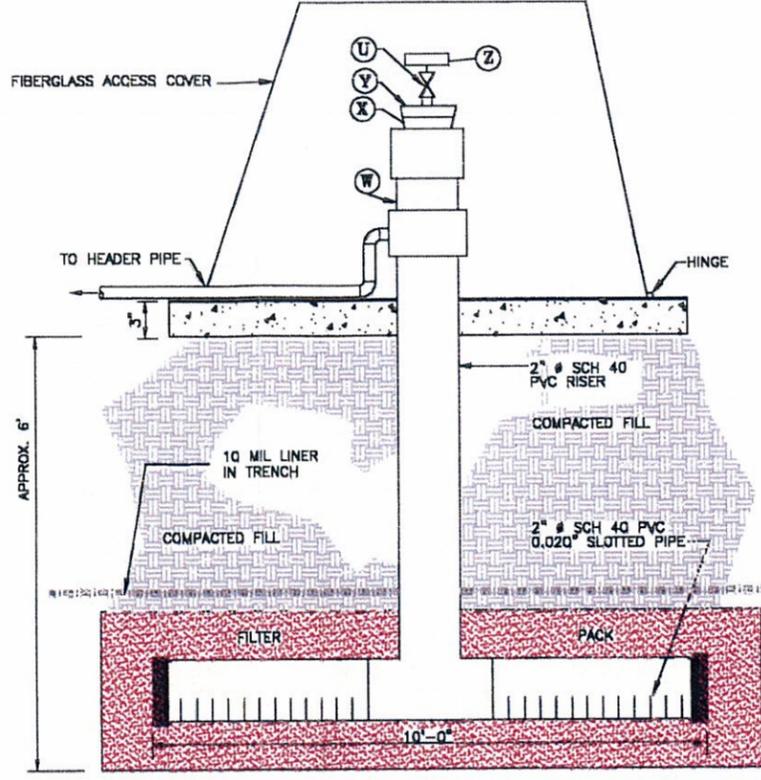
DRAWING NUMBER:	—
SHEET NUMBER:	of
DATE:	12/19/97



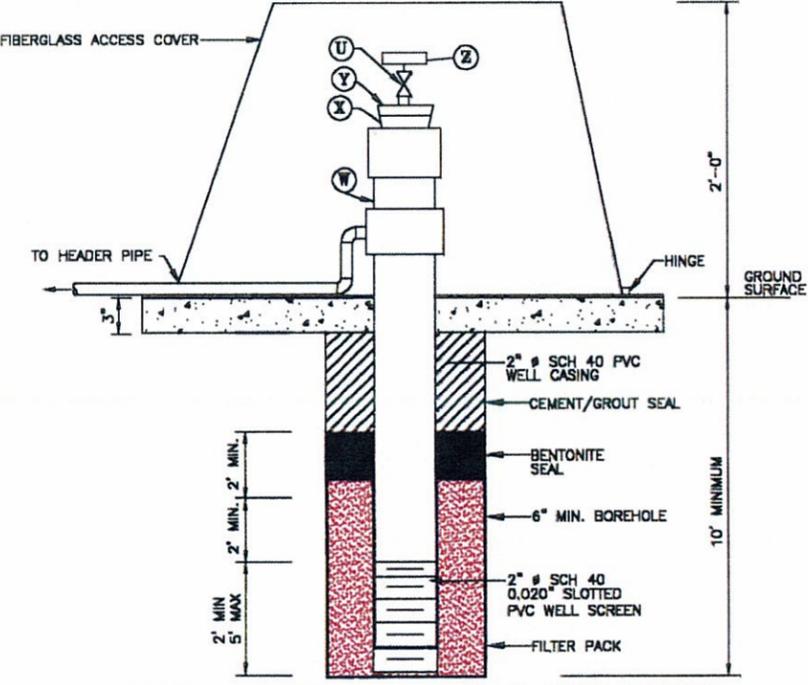
**VERTICAL VAPOR EXTRACTION WELL DETAIL  
BELOW GROUND COMPLETION**  
TYP. OF WELLS 1 THRU 4, 9, & 13 THRU 20  
NOT TO SCALE



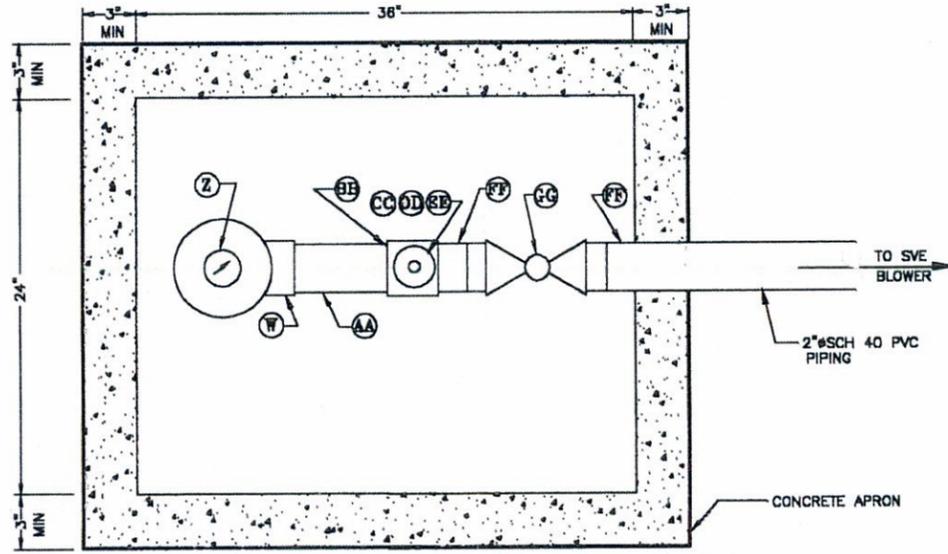
**(DETAIL 1) HORIZONTAL VAPOR EXTRACTION WELL  
BELOW GROUND COMPLETION**  
TYP. OF WELLS 29 THRU 34 & 39 THRU 44  
NOT TO SCALE



**(DETAIL 3) HORIZONTAL VAPOR EXTRACTION WELL  
ABOVE GROUND COMPLETION**  
ABOVE GROUND WELL COMPLETION IN THE NON  
TRAFFIC AREAS TO BE FIELD DETERMINED  
NOT TO SCALE



**VERTICAL VAPOR EXTRACTION WELL DETAIL  
ABOVE GROUND COMPLETION**  
TYP. OF WELLS 5 THRU 8, 10 THRU 12, 21 THRU 28  
AND 35 THRU 38  
NOT TO SCALE



**(DETAIL 2) VERTICAL VAPOR EXTRACTION WELL VAULT  
PLAN VIEW**  
NOT TO SCALE

**PIPING LEGEND**

(A) 1" HOPE FEMALE TRANSITION FITTING	(N) 1" TEE	(AA) SCH 40 CLEAR PVC
(B) 1"x 2" PIPE NIPPLE *	(O) 1"x 1/4" REDUCING BUSHING	(BB) 2 X 2 X 1/2 (S X S X FPT) REDUCING TEE
(C) 1" BALL VALVE	(P) PRESSURE GAUGE (0-80 psid)	(CC) 1/2 X 1/4 (MPT X FPT) REDUCER BUSHING
(D) 1" CHECK VALVE	(Q) 1"x 10" PIPE NIPPLE	(CD) 1/4 X 2" SCH 80 PVC PIPE NIPPLE
(E) 1 X 1/2" REDUCING BUSHING	(R) 1" 150 LB. THREADED FLANGE	(DE) 1/4" BRONZE BALL VALVE
(F) 1/2" CLOSE NIPPLE *	(S) 150 LB PVC FLANGE	(FF) 2" SCH 40 PVC
(G) 1/2" UNION	(T) 1/4" 30 psid SAFETY VALVE	(GG) 2" SCH 80 BALL VALVE
(H) 1/2" REGULATOR	(U) 1/4" GAUGE VALVE	
(I) 1/2" X 3" NIPPLE	(V) STEEL VAULT BOX	
(J) 1/2" TEE	(W) 4 X 4 X 2 (S X S X S) PVC TEE	
(K) 1/2"x 2" NIPPLE	(X) 4 X 2 (SPIG X SOCC) PVC ADAPTER SCH 40 PVC	
(L) 1/2" STREET ELBOW	(Y) 2 X 1/4 (SPIG X FPT) REDUCER BUSHING SCH 40 PVC	
(M) 0-30" SCFM FLOW METER WITH VALVE	(Z) 0-200 IN H2O VACUUM GAUGE	

\* LENGTH TO BE DETERMINED DURING ASSEMBLY

J:\ANTIDIV\CHERRY\918828\AS-BUILT\FIG7R.DWG

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

SUBMITTED: \_\_\_\_\_ PROJECT MANAGER DATE: \_\_\_\_\_  
APPROVED: \_\_\_\_\_ BRJ PROJECT ENGINEER DATE: \_\_\_\_\_  
APPROVED: \_\_\_\_\_ DEPT. MANAGER DATE: \_\_\_\_\_

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
	1	CHANGE PIPE DIAMETER			
	2	FINAL RAWP		12/19/97	
	3	RECORD DRAWING		1/20/98	

AT FULL SCALE (IF NOT 1"=SCALE ACCORDINGLY)	CADD FILE:	DRAWN: J. COLLINS	DESIGNED: F. HAAS	CHECKED: G. GILLES	CHECKED: _____
--	------------	-------------------	-------------------	--------------------	----------------

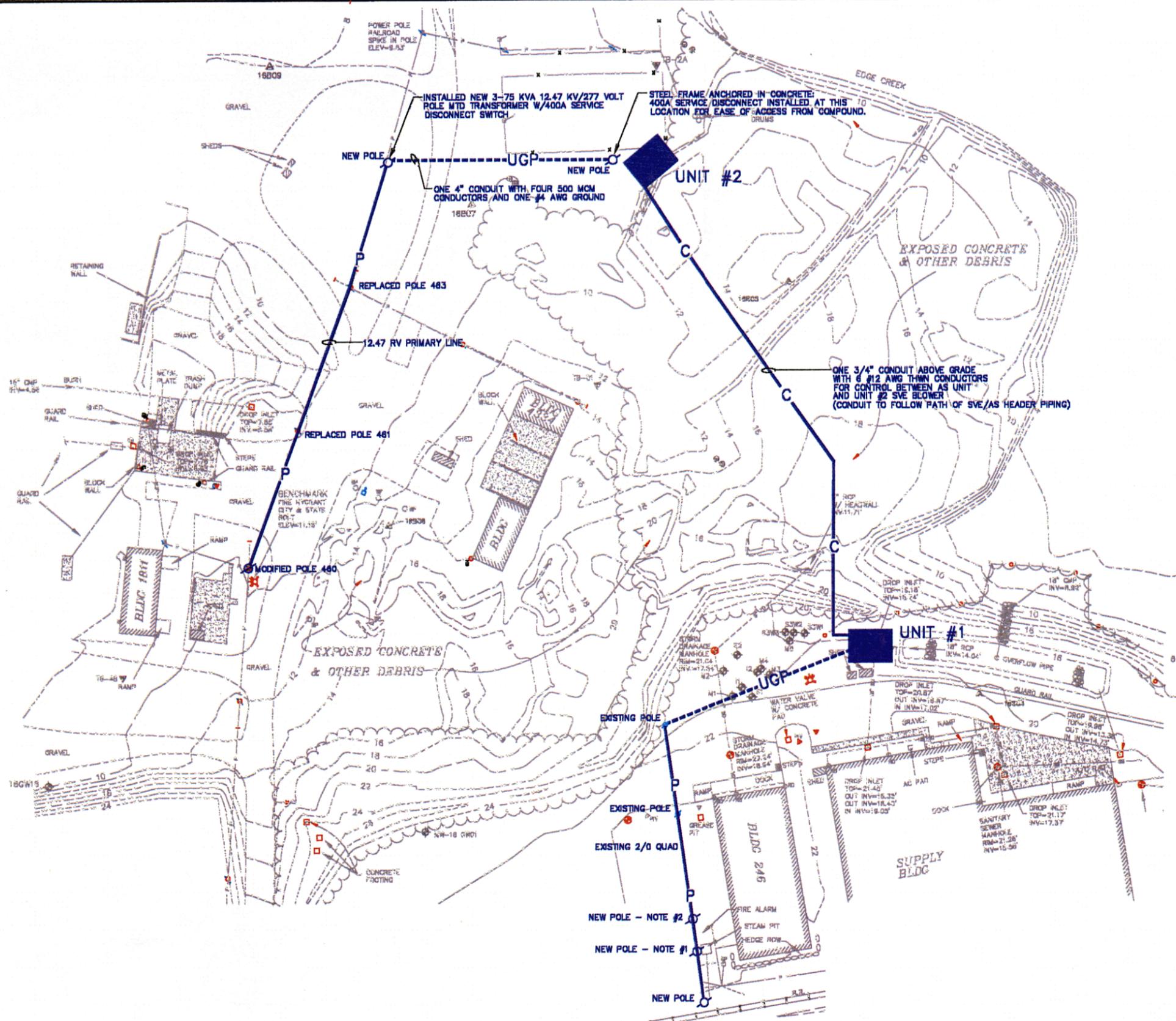
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND  
**ATLANTIC DIVISION**  
NAVAL STATION NORFOLK, VIRGINIA  
CONTRACT N68470-83-D-3032 DELIVERY ORDER NO. 0079  
OHM PROJECT No. 918828 MARINE CORPS AIR STATION, CHERRY POINT, N.C.

**RECORD DRAWING**

**FIGURE 7**  
**VAPOR EXTRACTION WELL DETAILS**  
**OUI SITE 16**

DRAWING NUMBER: \_\_\_\_\_  
SHEET NUMBER: \_\_\_\_\_ of \_\_\_\_\_  
DATE: 12/19/97





- NOTES:
- 40/4 POLE XFB (2)  
 (3) 37.5 Kva TRANSFORMER  
 (3) CUTOUTS (3) ARRESTORS  
 25' - 2/0 QUAD  
 FURNISHED BY GOVERNMENT
  - 40/4 POLE FDE 3-N X-FB  
 (3) 37.5 Kva TRANSFORMER 1240/7200 y 277/480  
 (3) CUTOUTS (3) ARRESTORS  
 METER EXISTING SERVICE GUY & ANCHOR

LEGEND:

- LIGHT POLE
- ELECTRIC BOX
- SUPPORT POLE
- WATER METER
- WATER VALVE
- SIGN
- HOSE BIB
- WOOD POST
- WOODLINE
- BOLLARD
- POWER POLE W/ GUY WIRE
- MONITOR WELL
- SOIL BORING
- TEST BORING
- PROPOSED AIR INJECTION WELL
- PROPOSED VAPOR EXTRACTION WELL
- PROPOSED MW CLUSTERS (SEE FIGURE 3-6 FOR DETAILS)
- FENCE W/ GATE POST
- SILT FENCE
- OVERHEAD POWER
- UNDERGROUND POWER
- SPOT ELEVATION
- GUY POLE
- ROOF DRAIN
- RIP-RAP
- SANITARY SEWER LINE
- STORM DRAINAGE LINE
- TELEPHONE PEDISTAL
- POST INDICATE VALVE
- CONCRETE



RECORD DRAWING

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

SUBMITTED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PROJECT MANAGER

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SR. PROJECT ENGINEER

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DEPT. MANAGER

REVISIONS						
ZONE	REV.	DESCRIPTION	BY	DATE	APP.	
	1	FINAL RAMP		12/19/93		
	2	RECORD DRAWING		1/20/94		

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

**ATLANTIC DIVISION**

NAVAL STATION NORFOLK, VIRGINIA

CONTRACT N62470-93-D-3032 DELIVERY ORDER NO. 0154

OHM PROJECT No. 018528 MARINE CORPS AIR STATION, CHERRY POINT, N.C.

FIGURE 11

**ELECTRICAL SITE LAYOUT FOR OU1, SITE 16**

DRAWING NUMBER: \_\_\_\_\_

SHEET NUMBER: \_\_\_\_\_ of \_\_\_\_\_

DATE: 12/19/93

J:\ANTIDIV\CHERRYPT\018528\AS-BUILT\FIG11R.DWG

**APPENDIX B**

**WELL ABANDONMENT RECORD**



# WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

## WELL CONTRACTOR CERTIFICATION # \_\_\_\_\_

### 1. WELL CONTRACTOR:

Well Contractor (Individual) Name \_\_\_\_\_

Well Contractor Company Name \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

City or Town State Zip Code

( ) - \_\_\_\_\_  
Area code - Phone number

### 2. WELL INFORMATION:

SITE WELL ID # (if applicable) \_\_\_\_\_

STATE WELL PERMIT # (if applicable) \_\_\_\_\_

COUNTY WELL PERMIT # (if applicable) \_\_\_\_\_

DWQ or OTHER PERMIT # (if applicable) \_\_\_\_\_

WELL USE (Circle applicable use): **Monitoring** Residential  
Municipal/Public Industrial/Commercial Agricultural  
Recovery Injection Irrigation  
Other (list use) \_\_\_\_\_

### 3. WELL LOCATION:

COUNTY \_\_\_\_\_ QUADRANGLE NAME \_\_\_\_\_

NEAREST TOWN: \_\_\_\_\_

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

#### TOPOGRAPHIC / LAND SETTING:

Slope Valley Flat Ridge Other \_\_\_\_\_  
(Circle appropriate setting)

LATITUDE \_\_\_\_\_

LONGITUDE \_\_\_\_\_

May be in degrees,  
minutes, seconds, or in a  
decimal format

Latitude/longitude source: **GPS** Topographic map  
(Location of well must be shown on a USGS topo map and  
attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b.  
(If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID #(if applicable) \_\_\_\_\_

NAME OF FACILITY \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

City or Town State Zip Code

### 4b. CONTACT PERSON/WELL OWNER:

NAME \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

City or Town State Zip Code

( ) - \_\_\_\_\_  
Area code - Phone number

### 5. WELL DETAILS:

a. Total Depth: \_\_\_\_\_ ft. Diameter: \_\_\_\_\_ in.

b. Water Level (Below Measuring Point): \_\_\_\_\_ ft.

Measuring point is \_\_\_\_\_ ft. above land surface.

### 6. CASING: Length Diameter

a. Casing Depth (if known): \_\_\_\_\_ ft. \_\_\_\_\_ in.

b. Casing Removed: \_\_\_\_\_ ft. \_\_\_\_\_ in.

### 7. DISINFECTION: \_\_\_\_\_

(Amount of 65%-75% calcium hypochlorite used)

### 8. SEALING MATERIAL:

#### Neat Cement

Cement \_\_\_\_\_ lb.  
Water \_\_\_\_\_ gal.

#### Sand Cement

Cement \_\_\_\_\_ lb.  
Water \_\_\_\_\_ gal.

#### Bentonite

Bentonite \_\_\_\_\_ lb.  
Type: Slurry Pellets  
Water \_\_\_\_\_ gal.

#### Other

Type material \_\_\_\_\_

Amount \_\_\_\_\_

### 9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

### 11. DATE WELL ABANDONED \_\_\_\_\_

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL \_\_\_\_\_ DATE \_\_\_\_\_  
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

PRINTED NAME OF PERSON ABANDONING THE WELL \_\_\_\_\_

## **APPENDIX C**

### **SITE HEALTH AND SAFETY PLAN**

# **SITE HEALTH AND SAFETY PLAN**

## **OU1 SITE 16 AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM DECOMMISSION MCAS CHERRY POINT, NORTH CAROLINA**

**CONTRACT No.: N40085-08-D-1409**

**CTO: 0005**

**JUNE 2009**

**Rhēa Project No: 397**

***Prepared for:***

NAVFAC Mid-Atlantic  
NC IPT, Code OPCEV  
C/O LRA Building C  
6526 Hampton Boulevard  
Norfolk, VA 23508

***Prepared by:***

Rhēa Engineers & Consultants, Inc.  
4975 William Flynn Highway, Suite 14  
Gibsonia, Pennsylvania 15044

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# **OU1 SITE 16 AIR SPARGE / SOIL VAPOR EXTRACTION SYSTEM DECOMMISSION**

## **MCAS CHERRY POINT, NORTH CAROLINA**

### **SITE HEALTH AND SAFETY PLAN**

#### **1.0 INTRODUCTION**

Rhēa Engineers & Consultants, Inc. (Rhēa) is pleased to submit this Site Health and Safety Plan (HASP) for the air sparge/soil vapor extraction system decommission at OU1 Site 16 on the Marine Corps Air Station (MCAS) Cherry Point, North Carolina. This HASP contains procedures and protocols pertaining to personnel and public health and safety issues at the site. It is through the implementation of this HASP that site hazards and risks with regard to the air sparge system removal will be controlled and minimized.

Rhēa has a thorough Health and Safety Program that contains many health and safety procedures that are referenced in this HASP. The Rhēa Health and Safety Procedures applicable to this project will be available at the MCAS site trailer.

This HASP will allow a consistent approach to protect personnel and the public from potential safety and health problems. It will enable site personnel involved with the product remediation system installation project to be familiar with health and safety requirements and procedures. The text describes the controls, policies, and procedures to be followed, and identifies the responsible personnel and their functions in the performance of the HASP.

This plan has been prepared in accordance with OSHA's "Hazardous Waste Operations and Emergency Response" standard contained in 29 Code of Federal Regulations (CFR) 1910.120 and the U.S. Army Corps of Engineer's (USACE's) Safety and Health Requirements Manual (COE EM-385-1-1, November 2003).

#### **1.1 HEALTH AND SAFETY PROGRAM MAINTENANCE**

The Rhēa Team recognizes that health and safety concerns continually change; therefore, this plan will be reviewed periodically as needed. The Site Health and Safety Officer (SHSO) will conduct safety audits to check HASP compliance and to determine if the HASP requires additional revisions. In the event of an emergency response, the response will be evaluated as to its effectiveness, and revisions to the Emergency Response (Section 13.0) will be made, if necessary.

## 1.2 PLAN ACCEPTANCE

Rhēa personnel and subcontractors engaged in site activities involving contact with or handling of potentially contaminated materials will be required to review this HASP prior to the commencement of work. These individuals will be required to sign their names, indicating that they have read this plan and will comply with the rules, practices, and procedures contained herein. The HASP Acceptance form is included here as Figure 1-1.

## 1.3 TERMINOLOGY

The following is a list of the terminology that is used throughout this HASP:

ANSI	American National Standards Institute
ASTM	American Standards of Testing Methods
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
ConRep	Construction Representative
CPR	Cardiopulmonary Resuscitation
EC	Emergency Coordinator
EAD	Environmental Affairs Department
EMR	Experience Modification Rating
EMS	Emergency Response Services
°F	Degrees Fahrenheit
FRCE	Fleet Readiness Center East
HASP	Site Health and Safety Plan
HPP	Hurricane Preparation Plan
HSM	Health and Safety Manager
LEPC	Local Emergency Planning Committee
MCAS	Marine Corps Air Station
MEC	Military Environmental Construction Corp.
MSDS	Material Safety Data Sheet

NADEP	Naval Air Depot
NAVFAC	Naval Facilities Engineering Command
NIOSH	National Institute of Occupational Safety and Health
NOSC	Navy On-Scene Coordinator
NRC	National Response Center
OSHA	Occupational Safety and Health Administration
OT	Oral temperatures
OVA	Organic Vapor Analyzer
PM	Project Manager
PEL	Permissible Exposure Limit (8-hour time weighed average)
POL	Petroleum, Oil, and Lubricant
PPE	Personal Protective Clothing and Equipment
ppm	Parts per million
PRECON	Pre-construction Meeting
Rhēa	Rhēa Engineers & Consultants, Inc.
ROICC	Resident Officer in Charge of Construction
SHSO	Site Health and Safety Officer
SS	Site Superintendent
STEL	Short-Term Exposure Limit
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USCG	U.S. Coast Guard
USMC	U.S. Marine Corps
USN	U.S. Navy

#### 1.4 REFERENCES

The following documents were used as references in the preparation of this HASP:

- Standard First Aid Manual, American Red Cross;
- Occupational Safety and Health Administration (OSHA) Safety and Health Standards, 29 CFR 1910 and 1926 (specifically 1926.65);

- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health (NIOSH)/ (OSHA)/United States Coast Guard (USCG)/United States Environmental Protection Agency (USEPA);
- A Guide to Industrial Respiratory Protection, NIOSH;
- Standard Operating Safety Guides, USEPA;
- Occupational Health Guidelines for Chemical Hazards, NIOSH/OSHA;
- Threshold Limit Values and Biological Exposure Indices, ACGIH;
- Safety and Health Requirements Manual, EM-385-1-1, November 2003, US Army Corps of Engineers;
- Hazardous Chemicals Desk Reference, Third Edition, Van Nostrand-Reinhold; and
- Rhēa Corporate Health and Safety Procedures Manual.

## 2.0 SIGNATURE SHEETS

Plan Prepared By:

Name: Erica L. S. DeLattre  
 Title: Project Manager  
 Company: Rhēa Engineers & Consultants, Inc.  
 Telephone: (724) 443-4111  
 Fax: (724) 443-4187

This Site Health and Safety Plan has been prepared by:

Signature:   
 \_\_\_\_\_  
 Erica L. S. DeLattre, Project Manager

Plan Approved By:

Name: Erica L. S. DeLattre  
 Title: Corporate Health and Safety Manager  
 Company: Rhēa Engineers & Consultants, Inc.  
 Telephone: (724) 443-4111  
 Fax: (724) 443-4187

I hereby acknowledge that I have reviewed and approve the tenets of this Site Health and Safety Plan:



Signature:

Erica L. S. DeLattre, Corporate Health and Safety Manager

Plan Concurrence:

Name: Brad McCalla  
Title: Construction Site Superintendent (SS), Site Health and Safety Officer (SHSO)  
Company: Rhēa Engineers & Consultants, Inc.  
Telephone: (724) 443-4111  
Fax: (724) 443-4187

I hereby acknowledge that I have reviewed and concur with the tenets of this Site Health and Safety Plan:



Signature:

Brad A. McCalla, SS, SHSO

Plan Concurrence:

Name: Zach Wicks  
Title: Alternate Construction Site Superintendent, Alternate Site Health and Safety Officer (SHSO)  
Company: Rhēa Engineers & Consultants, Inc.  
Telephone: (724) 443-4111  
Fax: (724) 443-4187

I hereby acknowledge that I have reviewed and concur with the tenets of this Site Health and Safety Plan:



Signature:

Zachary D. Wicks, Alternate SS, Alternate SHSO

### **3.0 BACKGROUND INFORMATION**

Rhēa will be decommissioning the air sparge/soil vapor extraction system at the OU1 Site 16 at the MCAS Cherry Point, North Carolina. This work will be performed under Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, Contract No. N40085-08-D-1409 CTO-0005.

#### **3.1 SITE HISTORY AND DESCRIPTION**

MCAS Cherry Point is a 13,164-acre military reservation located north of the town of Havelock in southeastern Craven County, North Carolina. The boundaries of MCAS Cherry Point include the Neuse River to the north, Hancock Creek to the east, North Carolina Highway 101 to the south, and an irregular boundary approximately  $\frac{3}{4}$ -mile west of Slocum Creek to the west.

OU1 is an industrial area in the southern portion of the Air Station, and covers an area of over 565 acres. Much of the area is covered with buildings and pavement, including portions of the flight line. The East Prong of Slocum Creek (EPSC) forms the western boundary of OU1. The other boundaries include C Street and Sandy Branch to the northwest and portions of the flight line and runways to the northeast and southeast.

Site 16 has been under investigation since the earliest stages of environmental work conducted at MCAS Cherry Point. Site 16 was identified in the Initial Assessment Study (IAS) in 1983 and was listed in the 1988 RCRA Facility Assessment (RFA). Site 16 is also identified as SWMU I-16 in the MCAS Cherry Point RCRA Part B Permit. According to the IAS and RFA, the site covered approximately 11 acres.

Site 16 was one of the groundwater “hot spots” previously addressed in the Remedial Investigation (RI) report. The RI report presented the analytical results for groundwater samples collected from the surficial aquifer underlying Site 16. These samples indicated the presence of elevated concentrations of VOCs. Groundwater flow at Site 16 is generally from east to west. Groundwater in the surficial aquifer underlying Site 16 flows predominately towards Sandy Branch. The source of the surficial aquifer groundwater contaminants at Site 16 has not been identified, but is suspected to be associated with the up-gradient industrial areas of OU1.

#### **3.2 CONSTRUCTION ACTIVITIES**

The objective of the project is to decommission the existing Site 16 AS/SVE system. The project will be completed through the following definable features of work:

- Pre-Construction Coordination;
- Setup Temporary Site Controls;
- Decommission of Wells and Piping;

- Remove AS/SVE Equipment; and
- Site Restoration

The definable features of work are described in more detail in Section 2 of the Work Plan.

### **3.3 EMR RATING**

Rhēa’s Experience Modification Rating (EMR) is included as Attachment A.

### **3.4 POTENTIAL HEALTH HAZARDS**

The following section outlines the primary potential health hazards that have been identified at the site. Presented in subsequent sections are the areas in which the potential health hazards may be found, along with the form(s) in which the potential contaminant may be found. Particular attention will be paid during site-specific training to discuss the potential health hazards associated with the activities to be carried out at the site. These hazards will be reaffirmed in the daily safety meetings.

#### **3.4.1 Potential Physical Safety Hazards**

During site activities, Rhēa workers will obey the rules and regulations developed by the United States Navy (USN) and United States Marine Corps (USMC), as well as those presented in this HASP. Of special concern, with respect to site safety, are preventative measures and safe working practices that can minimize the risk of injury to site personnel. The following is a list of preventive measures that can be taken to complete site activities in a safe manner:

- Back strain can be prevented by employing proper lifting techniques when moving supplies, equipment, and tools. Site personnel will be instructed in proper lifting procedures during site-specific training;
- Slipping on wet surfaces can be minimized by using an absorbent material in a wet area, as well as wearing boots with a deep tread;
- Heavy equipment hazards can be minimized by posting signs that notify site personnel as to the existence of such equipment in the area. Additionally, those individuals operating pieces of heavy machinery should know their surroundings and the existence of workers in their respective areas;

- Live electrical lines and/or bare wires will be avoided at all times;
- Eye and hearing protection will be worn at all times;
- Site personnel will be instructed regarding the location and use of fire suppression equipment;
- Debris will be collected and properly containerized, so that flying debris does not become a safety hazard;
- Site personnel will be familiar with the proper use of small tools; and
- In areas of potential traffic hazards, barricades, or other appropriate traffic control devices will be used.

Additionally, the following sections describe procedures to be followed by site workers for: heavy and bulky loads; flame, heat and spark producing operations; slip, trip and fall hazards; head and back injuries; equipment and hand tools; and noise.

***Heavy and Bulky Loads:*** Back injury prevention should be given high priority when performing work activities. Individuals should exercise good judgment before heavy and bulky loads are lifted or handled manually. Mechanical equipment such as forklifts, wheelbarrows, hand trucks, loaders, and cranes should be used whenever possible. If a task involves lifting an object, which is heavier than the individual can lift on his/her own, the individual should seek assistance and/or use mechanical equipment to assist in the lifting.

***Flame, Heat, or Spark Producing Operations:*** Because of the possibilities of flammable materials being present, flame, heat, or spark producing operations will be limited. If a case arises where hot work is necessary, workers will follow the “Rhēa Hot Work Procedure” available at the site trailer and will obtain a Hot Works Permit from the Fire Department.

***Slip/Trip/Fall Hazards:*** Some areas may have wet surfaces, which will greatly increase the possibility of inadvertent slips. Caution must be exercised when using steps and stairs due to slippery surfaces in conjunction with fall hazards. Use of handrails when climbing stairs will be enforced, and handrails will remain secure until the support itself is removed and lowered to ground level. Good housekeeping practices are essential to minimize trip hazards.

The work area shall be kept clean and orderly. Tools and debris must be picked up and placed in the proper place to prevent a tripping hazard. Walkways and grating shall be kept in good condition. Spills will be cleaned up immediately. Personnel shall not walk or climb on piping, valves, fittings, or any other equipment not designed as walking surfaces.

Rhēa personnel should be constantly aware of the possibility of slips, trips, and falls due to poor and possibly slippery footing in the work areas before crossing either in front of or behind a piece of heavy equipment. Rhēa personnel will signal the operator and receive confirmation before moving.

***Head and Back Injuries:*** As minimum requirements, hard hats and safety glasses will be donned prior to performing work activities. This requirement will minimize minor injuries caused by a worker's head being impacted by hard objects while working around and under piping and other process related structures. At the daily safety meeting, personnel are instructed in proper lifting techniques and reminded not to lift heavy items without assistance.

***Equipment and Hand Tools:*** Hand tools and power tools will be in good repair and will be used only for the task for which they were designed. Damaged tools will be tagged "out of service." Tools will be kept clean. Sharp tools will not be carried in pockets. When working, overhead tools will be placed in a receptacle or secured when not in use. Tools cannot be dropped from heights. Only non-sparking tools will be used in flammable or explosive atmospheres. Cheater pipes will not be used.

### **3.4.2 Potential Environmental Hazards**

Environmental factors such as weather, wild animals, insects, and irritant plants pose a hazard when performing outdoor work. The SHSO will take all necessary measures to alleviate these hazards should they arise.

#### ***Hazardous Flora***

An incidence of contact by individuals to poisonous/thorny plants is high while working in wooded areas. Bare skin should be covered (i.e., long pants and shirt, steel toe boots, leather or cotton gloves, safety glasses, and head protection) as much as practical when working in forested or densely vegetated areas. Personnel should avoid entering an area in the direct path of known poisonous flora (i.e., poison ivy, poison oak, or poison sumac); a secondary route should be selected. Care should also be taken when walking in such areas as uneven terrain or vines may present a tripping hazard.

## *Hazardous Fauna*

Mosquitoes and gnats pose a nuisance and physical hazard to field personnel; they distract workers, leading to accidents, and pose a physical threat by transmitting live microorganisms. Avoiding the use of perfumes and scented deodorants and donning light colored clothing is preferable. The use of an insect repellent is encouraged and will be provided, as needed.

Poisonous snakes such as the rattlesnake, copperhead, and cottonmouth (water moccasin), all known as pit vipers, are common to the eastern United States. Snakes typically do not attack people but will bite when provoked, angered, or accidentally injured (as when stepped on). If a snake is encountered, quick/jerky motions and loud noises should be avoided. The snake should not be provoked and the individual is to retreat slowly; do not provoke the snake.

In the event of a snakebite injury, the following procedures will be followed:

Look for signs and symptoms such as the characteristic appearance of two small holes, usually about a half-inch apart, with surrounding discoloration, swelling, and pain. Systemic signs (such as, may or may not occur) include weakness, sweating, faintness, and signs of shock.

Provide treatment as follows:

1. Calm the victim and keep affected area still.
2. Contact ambulance if you cannot provide victim with transportation to the nearest hospital.
3. Wash the wound.
4. Keep the affected area below the level of the heart if bite is on the arm or leg.
5. Treat for shock.
6. Monitor airway, breathing, and circulation.
7. Obtain physical description of snake, if possible.
8. Provide the emergency medical responder (either the ambulance attendant or the emergency room at the hospital) with all pertinent information such as how long

ago the bite occurred, the type of snake (if known), any known allergic conditions (if known), etc.

9. Inform the SHSO as soon as possible.

There are two spiders commonly found in the United States whose bite can be serious: the black widow and the brown recluse spider. These bites may be serious, even life threatening. Many other spiders will bite, but they usually do not produce serious complications.

The black widow spider measures approximately 1 inch long with its legs extended. It is glossy black in color and has a distinctive yellow-orange marking in the shape of an hourglass on its belly. On its back, however, there is no marking, and unless you happen to turn the spider over, you cannot see this mark. The danger of the black widow spider bite lies in its systemic manifestations. The venom from this spider attacks the nervous system, resulting in severe muscle cramps with board like rigidity of the abdominal muscles, tightness in the chest, and difficulty in breathing. Sweating, nausea, and vomiting will also occur.

The emergency treatment for the black widow spider bite is basic life support. Sometimes the individual is not even aware of having been bitten, or where. Apply cold to the site of the bite if it can be identified. There is a specific antivenin for this spider bite that must be administered by a physician. It is particularly important to identify the spider, and bring it in, if you can.

The brown recluse spider is a little bit smaller than the black widow spider and is dull brown in color. It has a violin-shaped mark on its back, which can be seen when you are looking at the spider from above. The spider gets its name because it tends to live in dark areas, corners, and old unused buildings. The bite from this spider typically produces local effects rather than systemic manifestations. The venom of the brown recluse spider causes severe local tissue damage and can lead to an ulcer and gangrene. The bitten area becomes red, swollen, and tender within a few hours after the bite. A small blister forms, and several days later, this may form a large scab, covering a deep ulcer. Death is rarely reported.

The emergency treatment for the brown recluse spider is similar to that for the black widow spider except that these bites need local surgical treatment. Spider bite victims should be brought to the hospital. Again, if possible, identification of the spider should be carried out.

There is also a potential to contact other dangerous insects; these include fire ants, chiggers, bees, wasps, hornets, mites, fleas, and ticks. Personnel should perform checks

periodically and at the end of the work shift, especially when working in grassy or forested areas. Insect bites must be reported to the SHSO.

Before initiating site activities, each individual will be questioned as to any known sensitivities to the previously mentioned organisms or agents.

**Heat Stress Disorders:** The following is a summary of signs and symptoms of heat stress disorders.

- **Heat rash** – characteristic rash that may develop on the skin in areas that may be chapped by clothing. Frequent clothing changes help to prevent chapping from contact with wet clothes.
- **Heat cramps** – caused by heavy sweating and inadequate electrolyte replacement. Provide frequent breaks with fluid replacement. Cramps are usually relieved when victim is moved to a cool resting place and provided fluids every 15 minutes for approximately 1 hour.
- Symptoms include:
  - Muscle spasms; and
  - Pain in hands, feet, or abdomen.
- **Heat exhaustion** – caused by increased stress of various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Immediately remove the victim from the hot environment and provide rest while lying the victim down with feet elevated, and care for shock. Attempt to cool the victim by fanning or applying wet towels. Provide fluid replacement every 15 minutes and refer for medical evaluation if not improved within 30 minutes. Symptoms include:
  - Pale, cool, moist skin;
  - Heavy sweating;
  - Dizziness;
  - Nausea; and
  - Fainting.
- **Heat stroke** – temperature regulation fails and the body core temperature rises to critical levels. Immediate action must be taken to cool the body. Competent medical care must be

obtained immediately because this is a life threatening disorder. Symptoms include:

- Hot, dry skin, usually red and mottled;
- 104° F temperature;
- Confusion and/or dizziness;
- Loss of consciousness;
- Convulsions; and
- Strong rapid pulse.

It is recommended that workers break at least every two hours for 10 to 15 minute rest periods when temperatures rise above 72.5 degrees F and personal protective clothing is worn (PPE), i.e., Modified Level D PPE). Ambient temperatures will be determined from a thermometer shielded from radiant heat. In addition, workers are encouraged to take rests whenever they feel any adverse effects that may be heat-related. The frequency of breaks may need to be increased upon worker recommendation. Heat stress can be prevented by assuring an adequate work/rest schedule. Guidelines are printed below.

<b>Ambient Temperature</b>	<b>Level D Personal Protective Clothing and Equipment (PPE)</b>	<b>Modified Level D PPE</b>
90 °F or above	After 45 minutes of work	After 15 minutes of work
87.5 – 90 °F	After 60 minutes of work	After 30 minutes of work
82.5 – 87.5 °F	After 90 minutes of work	After 60 minutes of work
77.5 – 82.5 °F	After 120 minutes of work	After 90 minutes of work
72.5 – 77.5 °F	After 150 minutes of work	After 120 minutes of work

The work/rest schedule can be calculated based on heat stress monitoring results. Monitoring consists of taking the radial pulse of a worker for 30 seconds immediately after exiting the work area. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 110 beats per minute at the next rest period, decrease the work period by one-third. The initial rest period should be at least 10 minutes.

Monitoring for heat stress will begin when the ambient temperature reaches or exceeds 80 °F. Monitoring will include pulse rate, weight loss, oral temperature and signs and symptoms of heat stress. The employee’s radial pulse will be monitored for 30 seconds to determine heart rate. When monitored, oral temperatures (OT) will be obtained using

a clinical thermometer or equivalent. If the employee OT exceeds 99.6 °F, the work period will be reduced by one-third. If after this work period, the oral temperature still exceeds 99.6 °F, the work period will again be shortened by one-third. If the employee OT exceeds 100.6 °F, the employee will not be permitted to work at the site during hot weather.

***Exposure to Cold:*** With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Protective clothing greatly reduces the possibility of hypothermia. However, personnel will be instructed to wear warm clothing and to stop work should conditions become excessively cold. Employees will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation. Since wind chill temperatures take into account the potential for loss of body heat through convection, the wind-chill adjusted temperature will be used to evaluate for potential cold stress occurrence.

In cold weather, the potential for frostbite exists, especially in body extremities. Personnel will be instructed to pay particular attention to hands, feet, and any exposed skin when dressing. Personnel will be advised to obtain additional clothing if they begin to experience loss of sensation due to cold exposure.

Employees will be encouraged to move into the heated areas such as a vehicle or adjacent building on site at regular intervals depending upon the severity of ambient temperatures. When temperatures are less than 20 degrees F (actual or wind chill) workers should break regularly (every 45 minutes at a minimum). Since cold weather does cause significant water loss as a result of the dryness of the air, fluid intake will be encouraged to prevent dehydration, which directly affects blood volumes and flow to the extremities. Warm, sweet, caffeine-free, nonalcoholic drinks and soup offer the best fluid replacement and provide calorie energy. Symptoms of cold stress, including heavy shivering, excessive fatigue, drowsiness, irritability, or euphoria, necessitate immediate medical attention.

***Hearing Conservation:*** Working with and around the operation of heavy equipment, as well as in the vicinity of heavy equipment or air powered hand tools, typically results in employee noise exposure equal to or in excess of an 8-hour time weighted average of 85 decibels. The SHSO will monitor noise periodically with an audio dosimeter or sound level meter. Time weighted averages will be calculated automatically by the instrument or manually. Such exposure requires the implementation of a hearing conservation program in compliance with 29 CFR 1910.95. The SHSO is responsible for providing employees working with or near heavy equipment or aircraft with appropriate hearing protection and verifying that the protection is properly worn. The SHSO will follow the procedures outlined in the “Rhēa Hearing Conservation Procedure” posted at the MCAS site trailer. Site personnel will be provided with both in-ear and out-of-ear protection

devices (in compliance with American National Standards Institute (ANSI) 512.6-1984 and ANSI 53.19-1974, respectively).

#### **4.0 RESPONSIBILITIES AND LINES OF AUTHORITY**

##### **4.1 CORPORATE HEALTH AND SAFETY PERSONNEL**

Rhēa’s Project Manager, Ms. Erica DeLattre is the Health & Safety Manager to be accountable to monitor and enforce the policies and procedures as set forth in this HASP.

The following listed Rhēa Corporate personnel shall have the authority to intervene and suspend work in the interest of safety policy compliance:

**PROJECT MANAGER, HEALTH & SAFETY  
MANAGER**

**Ms. Erica DeLattre (Rhēa)**

(724) 443-4111 (Office)

(724) 316-6593 (Cell)

(724) 443-4187 (Fax)

**SITE SUPERINTENDENT, SITE HEALTH AND  
SAFETY OFFICER**

**Mr. Brad A. McCalla (Rhēa)**

(724) 443-4111 (Office)

(724) 462-4202 (Cell)

(724) 443-4187 (Fax)

Site safety is accomplished through an integrated team effort. The health and safety personnel, supervisors, site workers, and administrative team all perform essential safety roles. The following sections outline the work team’s respective responsibilities and training requirements and identify key personnel.

##### **4.2 SITE HEALTH AND SAFETY PERSONNEL**

The following individuals share responsibility for health and safety at the site:

**RHĒA CONSTRUCTION SITE SUPERINTENDENT &  
SITE HEALTH AND SAFETY OFFICER**

**Brad McCalla**

(252) 447-1700 (Site Trailer Phone)

(724) 831-7705 (Cell)

**RHĒA ALTERNATE CONSTRUCTION SITE HEALTH  
AND SAFETY OFFICER**

**Zach Wicks**

(252) 447-1700 (Site Trailer Phone)

(717) 580-7511 (Cell)

#### **4.2.1 Project Manager**

The Rhēa Project Manager (PM) has the overall responsibility for the project and verifies that the remediation goals are attained in a manner consistent with the HASP requirements. The PM will coordinate with the SHSO to confirm that the remedial action goals are completed in a manner consistent with the HASP.

#### **4.2.2 Site Health and Safety Officer**

The SHSO has the responsibility for administering the HASP relative to site activities, and will be available full-time on site or at the MCAS site trailer while site activities are in progress. The SHSO's primary operational responsibilities include personal and environmental monitoring, coordination of job safety analyses, personal protective equipment maintenance, and assignment of protection levels. The SHSO will direct field activities involved with safety and is authorized to stop work when an imminent health or safety risk exists. The SHSO is responsible for informing on-site personnel of safety requirements.

Mr. McCalla of Rhēa will be the acting SHSO. He possesses remedial action experience and a working knowledge of the state and federal occupational safety and health regulations. He has completed the required 40-hour health and safety training in accordance with 29 CFR 1910.120.

In addition, Mr. McCalla and at least one additional on-site professional employee will be trained in standard first aid and Cardiopulmonary Resuscitation (CPR). All training certificates and certifications will be retained at the site during the project. Mr. McCalla possesses demonstrable experience and has received specialized training in the use and selection of PPE and is familiar with the PPE implementation program. Furthermore, he has experience in the proper use of air monitoring instrumentation and sampling procedures relevant to the activities that will be performed at the site.

Mr. McCalla will contact the MCAS Fire Station (911), police, and ambulance services, as well as the nearest poison control center. He will communicate to these groups the following information: type of work being conducted, potential health and safety hazards present at the site, and duration of the project.

The SS/SHSO will be in direct communication with the Resident Officer in Charge of Construction (ROICC), Construction Representative (ConRep), MCAS Environmental Affairs Department (EAD), Rhēa and MEC personnel, and other site workers. It will be his responsibility to coordinate with these individuals regarding the health and safety aspects of the work activities.

#### **4.2.3 Site Labor Forces**

Site labor forces will be comprised of personnel within appropriate trade categories who possess the training and experience to work at a remedial site. Those who may be exposed to hazardous substances and/or potential health and safety hazards will have completed the 40-hour OSHA training and the required refresher training.

### **5.0 SUBCONTRACTORS AND SUPPLIERS**

When it is necessary for Rhēa to hire subcontractors, subcontractor personnel will adhere to policies and procedures outlined in this HASP. Subcontractors that provide on-site services are encouraged to develop and submit to the SHSO, for approval, their own project specific HASP. Such plans must meet or exceed the requirements of the Rhēa HASP.

In lieu of a formal plan submitted by a subcontractor, the subcontractor or supplier must subscribe to the tenets of the HASP. Subcontractor and supplier personnel that work or visit the project site shall be required to review the HASP and accept the Rhēa Superintendent/SHSO as the governing site authority. These individuals will be required to sign their name, indicating that they have read this plan and will comply with the rules, practices, and procedures contained herein. The Site Health and Safety Plan Acceptance Form is included as Figure 1-1.

Rhēa is responsible for informing its lower tier subcontractors and suppliers of these requirements, for directing and supervising the work of subcontractors, and for assuring that its subcontractors adhere to the requirements herein. Rhēa may request the subcontractor to provide proof of its subcontractors' adherence to all rules and regulations and will prohibit access to Rhēa property or job site or our client's property for those contractors not in compliance.

It is also the responsibility of Rhēa subcontractors to work in a manner so as not to endanger themselves, fellow employees, Rhēa Team employees, authorized work site visitors and customers, the general public, the environment, and Rhēa equipment or property.

## **5.1 GENERAL REQUIREMENTS**

Where the Rhēa SHSO deems appropriate, the subcontractor will provide a safety representative to monitor work practices. The subcontractor's safety representative may be required to remain on site at all times while work is in progress. Subcontractors noting any unsafe practices, dangerous situations, or unsafe conditions, must immediately report the information to the Rhēa SHSO, before commencing or continuing work.

Subcontractors and their employees working at the site are required to comply with the Rhēa Contractor/Subcontractor Procedures, HASP, and their own site-specific approved accident prevention plan, whichever is most stringent.

## **5.2 HAZARD COMMUNICATION (29 CFR 1910.1200)**

Each subcontractor must have a Hazard Communication Program in compliance with 29 CFR 1910.1200 or 29 CFR 1926.59. Subcontractors will provide Rhēa with Material Safety Data Sheets (MSDSs) for all chemicals or otherwise hazardous materials they introduce to Rhēa facilities and work locations.

The Rhēa SHSO will be responsible for hazard communication training for the subcontractor as part of the site safety orientation.

Rhēa will provide the following information to the subcontractor's supervisor who will be responsible for his/her crew's training:

- A description of hazardous materials, in any, that exist in the area in which they will be working;
- A copy of the MSDSs for the hazardous materials in the work area;
- Training on the MSDS and the hazardous material labeling system in effect at the location; and
- Training on the local emergency response procedures.

## **6.0 TRAINING REQUIREMENTS**

This section details the requirements for training of personnel assigned to work at the project site.

## **6.1 OSHA 1910.120 TRAINING**

Rhēa employees and subcontractors working on the site who may potentially be exposed to hazardous substances and/or potential health and safety hazards will have completed the 40-hour health and safety training and 8-hour refresher training as required by OSHA regulations, 29 CFR 1910.120. The SHSO and alternate SHSO will have completed the additional 8-hour supervisory training.

Rhēa will maintain a record of training and refresher courses for on-site Rhēa and subcontractor personnel and a record of site personnel experience under the direction of a skilled supervisor (24 hours minimum). Also, a log of visitors to the site, including name, company name/organization, date, and activities conducted will be maintained at the site. Individuals visiting the site will be required to sign the log. Rhēa will retain these and other health and safety records after project activities have been completed. The standard form used for sign-in and sign-out of visitors is included as Figure 6-1.

## **6.2 SITE-SPECIFIC TRAINING**

Site-specific training will be provided to site personnel involved in the work activities. The training will address potential hazards found at the site and safety measures that must be followed on certain areas of the site where health and safety hazards may exist. Procedures regarding the buddy system, spill response, fire prevention/suppression techniques, levels of protection, recognition of potential hazards, overexposure to chemical hazards, and air monitoring will also be covered as part of the training. Further, the training will include a discussion of general site conditions.

## **6.3 DAILY SAFETY MEETING**

Project personnel will be given briefings by the SHSO daily or additionally, as determined by the SHSO. These daily meetings will further assist site personnel in conducting their activities in a safe manner and provide workers with information on new operations, changes in work practices, or changes in environmental conditions at the work site. Briefings will also be given to facilitate conformance to prescribed safety practices when performance deficiencies are identified during routine, daily activities or as a result of safety audits.

A summary form that will be completed to document topics discussed during each Daily Safety Meeting is included as Figure 6-2. The completed summary form will be provided daily to the ConRep.

## **6.4 EMERGENCY FIRST AID TRAINING**

The SHSO and at least one additional on-site Rhēa professional employee will be trained in American Red Cross Standard First Aid, CPR, and the OSHA Bloodborne Pathogens Standard. This training has been provided so that in the event of an emergency or other incident, primary care can be given to an individual in need before professional response providers arrive.

## **6.5 SPILL RESPONSE TRAINING**

Spills will be reported to the MCAS Fire Station (911) immediately. Site personnel will be trained to respond to spills at the site. The SHSO will offer this spill response training during the site-specific training. The training will range from awareness of spill potential to responding to spill situations. Personnel will learn how to prevent spills from occurring, how to look for and identify spills, and the location and proper use of the portable spill containment kit. Specifically, spill response training will include the following:

- Control of an area where a spill has occurred, including setup of barriers to keep personnel not involved in cleanup efforts out of the area;
- Training in the proper use of sorbent, and other cleanup materials; and
- Training in the proper notification and documentation of a spill occurrence.

The portable spill containment kit will include absorbent pads and vermiculite. In the event of a spill, these materials will be used to contain and clean up the spill. Once used, these materials will be containerized and disposed of at a facility licensed to accept such contaminated material.

## **7.0 HEALTH AND SAFETY INSPECTIONS**

### **7.1 SAFETY INSPECTIONS**

The Rhēa Health and Safety Manager (HSM), PM, and/or SHSO may conduct periodic inspections of the site. The SHSO will discuss necessary corrective actions with the PM and/or the HSM and review new procedures.

The HSM or their designated representative may periodically conduct site visits and perform Site Safety Assessments. These Site Safety Assessments will be kept on file at Rhēa's office in Gibsonia, Pennsylvania.

## **7.2 EXTERNAL INSPECTIONS / CERTIFICATIONS**

Rhēa does not anticipate, but may consider, the use of outside sources to provide safety inspections on an as-needed basis.

As required, Rhēa safety equipment will comply with appropriate NIOSH, American Society for Testing and Materials (ASTM), and US Coast Guard or other recognized certification organizations.

## **8.0 SAFETY AND HEALTH EXPECTATIONS AND COMPLIANCE**

### **8.1 GOALS AND OBJECTIVES**

The goals and objectives of the Rhēa Team are to provide a safe and healthful work environment for all employees. The Rhēa Team considers no phase of operations or administration to be of greater importance than injury and illness prevention. Safety takes precedence over expediency and shortcuts. At Rhēa, it is believed all accidents and injuries are preventable. The Rhēa Team will take every reasonable step to reduce the possibility of injury, illness, or accident.

### **8.2 SAFETY PROCEDURES / NON-COMPLIANCE**

Employees and supervisors are informed through training and administrative correspondence that safe behaviors and practices are required on jobs and during Rhēa work activities. Failure to work safely could affect the offending individual, coworkers, the environment, and/or Rhēa assets, and supervisors are authorized to discipline workers who compromise safety by ignoring or attempting to circumvent safety requirements. The Health and Safety department along with superintendents are authorized to stop unsafe work practices, if necessary, until risks of severe injury or illness are adequately mitigated.

## **9.0 ACCIDENT REPORTING**

### **9.1 EXPOSURE DATA (MANHOURS WORKED)**

The HSM and Rhēa Personnel Department track and maintain incident records at the Rhēa Gibsonia, Pennsylvania office.

## 9.2 ACCIDENT INVESTIGATIONS, REPORTS, AND LOGS

Site personnel will report accidents or unusual incidents to the SHSO. The SHSO is responsible for conducting the emergency response in an efficient and safe manner. It will be the responsibility of the SHSO to determine whether off-site assistance and/or medical treatment are required. The SHSO is responsible for completing the Supervisor's Accident Investigation Report. If an employee is injured, an employee injury report will be completed. A Supervisor's Accident Investigation Report is provided as Figure 9-1. Copies of Employee Injury Reports (Figure 9-2) will be submitted to the EAD, ROICC, and the Rhēa HSM.

## 9.3 IMMEDIATE NOTIFICATION OF MAJOR INCIDENTS

Rhēa will immediately notify EAD and the ROICC of any major incident, including injury, fire, equipment/property damage, and environmental incident. A full report will be provided within 24 hours.

## 9.4 RESPONSE REQUIREMENTS

The American Red Cross or other approved agency shall certify the SHSO and at least one other on-site employee in Adult CPR and First Aid. The trained individuals will be available to provide first aid in the event of an emergency. The following procedure will be followed in response to any major personal injury:

1. The nearest workers will immediately assist a person who shows signs of medical distress or who is involved in an accident. The SS will be summoned.
2. The SS will immediately determine the following:
  - Location of the victim at the work site;
  - Nature of the emergency;
  - Whether the victim is conscious; and
  - Specific conditions contributing to the injury, if known.
3. The following actions will be taken depending on the severity of the incident:
  - ***Life-Threatening Incident:*** If an apparent life-threatening condition exists, the SS will immediately contact local Emergency Response Services (EMS) and the SHSO. An on-site person will be appointed who will meet the EMS

and have him/her quickly taken to the victim. Rhēa personnel will evacuate injured personnel, injury permitting, within the active work zone to a clean area for treatment by EMS personnel.

- ***Non Life-Threatening Incident:*** If it is determined that no threat to life is present, the SS will immediately contact the SHSO who will direct the injured person through procedures appropriate to the nature of the illness or accident. Appropriate first aid or medical attention will be administered.

**\*Note:** The area surrounding an accident site must not be disturbed until the SHSO has cleared the scene.

Personnel requiring emergency medical attention will be evacuated from active work areas if doing so would not endanger the life of the injured person or otherwise aggravate the injury. Personnel will not enter the area to attempt a rescue if their own lives would be threatened.

## **10.0 MEDICAL SUPPORT**

### **10.1 FIRST AID**

First aid will be administered by the closest, certified individual to the accident/incident. This assistance will be coordinated by the SHSO and will be conducted in a manner so that those rendering assistance are not placed in a situation of unacceptable risk. The primary concern will be to avoid placing a greater number of individuals in jeopardy.

***Bloodborne Pathogens Program:*** In regard to first aid procedures, Rhēa will follow the “Bloodborne Pathogens Procedure” (in accordance with 29 Code of Federal Regulations (CFR) 1910.1030), found in the *Rhēa Corporate Safety Procedures*. A copy of the procedure will be retained at the site, and will be reviewed during site-specific training.

### **10.2 OFF-SITE MEDICAL ARRANGEMENTS**

Prior to the start of work, Rhēa shall arrange for medical facilities personnel to provide timely attention to any injured person at the work sites. Primary Emergency attention will be conducted by Craven Regional Medical Center with the secondary medical facility being Carteret General Hospital. A detailed map with directions to and contact numbers of the primary and secondary medical facilities is provided as Figures 10-1 and 10-2. Addresses, phone numbers, and directions are as follows:

**PRIMARY MEDICAL FACILITY**  
**Craven Regional Medical Center**

Non-Emergency Phone No.: (252) 633-8111  
2000 Neuse Blvd.  
P.O. Box 12157  
New Bern, NC 28561

Directions to Medical Center: From the main gate, turn right (west) onto SR 101 (Fontana Blvd.), bear right onto RT US 70 West (W. Main St.), follow 70 West to SR 1200 (Pembroke Road), turn left onto 1<sup>st</sup> Street, turn left onto US 17 (US 70 Bus/SR 55/Neuse Blvd.), turn right onto Hospital Drive, hospital is on the left.

Emergency Phone No.: 911 (see note below)

**Important Note:** If dialing 911 from a cell phone, the 911 call center in New Bern (or Carteret) will be contacted. Dialing 911 on a base phone will contact the MCAS Cherry Point 911 operator.

**SECONDARY MEDICAL FACILITY**  
**Carteret General Hospital**

Non-Emergency Phone No.: (252) 808-6000  
3500 Arendell Street  
P.O. Drawer 1619  
Morehead City, NC 28557

Directions to Carteret General Hospital: From the main gate, turn right (west) onto SR 101 (Fontana Blvd.), turn left onto RT US 70 East (E. Main St.), follow 70 East to North 35<sup>th</sup> Street, turn left into the hospital.

**The Emergency Telephone Number List is provided as Figure 10-3.** Other state and federal employee notices such as, but not limited to, Right to Know, Equal Opportunity is the Law, Minimum Wage, and Workers Compensation Carrier Identification, will be posted at the MCAS site trailer along with other data required for emergency response.

## **11.0 PERSONNEL PROTECTION**

Individuals entering work areas will be advised of and protected from potential hazards. The purpose of PPE is to shield or isolate individuals from the potential health and safety hazards that may be encountered at the site. PPE for this project was selected based on the potential health hazards expected at the site, the work tasks to be performed at the

site, and previous project experience. It is understood that site workers have learned the proper donning and doffing, maintenance, and inspection of PPE; however, Rhēa will review these topics during site-specific training.

## **11.1 POTENTIAL HEALTH HAZARD PROTECTION**

This section describes the site-specific requirements for levels of protection (Level D through Level C). The required PPE to be worn at the specific protection levels and air-monitoring requirements are also discussed.

### **11.1.1 Level D**

The following criteria determine Level D protection:

- Air monitoring readings up to 5 ppm above background as detected by an Organic Vapor Analyzer (OVA) sustained for one minute in the breathing zone; and
- Remote potential exists for physical contact or inhalation of petroleum hydrocarbons or inhalation of organic vapors during work operations.

### **11.1.2 Level C**

The following criteria determine Level C protection:

- Air monitoring readings up to 10 ppm above background as detected by an OVA sustained for one minute in the breathing zone; and
- Potential exists for physical contact or inhalation of petroleum hydrocarbons or inhalation of organic vapors during work operations.

## **11.2 PERSONAL PROTECTION EQUIPMENT**

The following would be the personal equipment for each level of protection as a minimum requirement:

### **11.2.1 Level D**

- Coveralls or other appropriate clothing;

- Gloves (discretionary);
- Safety glasses;
- Leather or chemical resistant boots or shoes with steel toe and shank;
- Hard hat; and
- Ear protection (based on noise monitoring).

### **11.2.2 Level C**

- Tyvek clothing;
- Chemical-resistant gloves;
- Full-face or half-face air-purifying canister equipped respirator (MSHA/NIOSH approved) available at work area;
- Safety glasses;
- Leather or chemical resistant boots or shoes with steel toe and shank;
- Hard hat; and
- Ear protection (based on noise monitoring).

### **11.3 LEVELS OF PROTECTION FOR WORK ACTIVITIES**

Level D attire will be worn during the majority of the site work and where the potential exists for workers to contaminated groundwater, soil, or be exposed to organic vapors at the site.

Upgrading and downgrading of PPE will result if air monitoring results warrant and/or at the discretion of the SHSO. The SHSO will monitor the use and effectiveness of PPE during site work, as well as require that site workers inspect their PPE for proper fit and performance. Level D attire is the highest level of worker protection expected to be warranted during work activities.

### **12.0 DECONTAMINATION**

Elements of the decontamination process and the decontamination area have been designed so as to minimize adverse environmental impacts. The procedures found in this section will be implemented under the direct supervision of the SHSO. The SHSO will monitor the decontamination practices of site personnel and evaluate effectiveness. The decontamination procedures that follow have been chosen based on the contaminants of concern, tasks to be completed, and previous experience.

## 12.1 PERSONNEL DECONTAMINATION

Personnel in Level D and Level C attire will be required to dispose of any gloves (cloth or chemical resistant), Tyveks (if applicable), and/or boot covers, and wash their hands before leaving the site. Gloves and/or boot covers will be disposed of by the SHSO.

### 12.1.1 Level C Decontamination Steps

Step 1	Outer Glove Wash
Step 2	Outer Glove Rinse
Step 3	Tape Removal
Step 4	Outer Glove Removal
Step 5*	Inner Glove Rinse*
Step 6	Tyvek Removal
Step 7	Safety Boot Wash
Step 8	Safety Boot Rinse
Step 9*	Inner Glove Removal*
Step 10	Remove Respirator if Worn
Step 11	Thoroughly Wash Hands and Face

### 12.1.2 Level D Decontamination Steps

Step 1	Remove Outer Garments (i.e., coveralls)
Step 2	Remove Outer Gloves
Step 3*	Remove Inner Gloves*
Step 4	Thoroughly Wash Hands and Face

**\*Note:** Inner gloves will be included as a part of these respective PPE ensembles if the SHSO so warrants.

Wastewater generated during personnel decontamination will be collected and stored on site in drums or other appropriate containers with contents identified and dated. This water will be shipped for treatment through the nearest groundwater remediation treatment system.

## 12.2 EQUIPMENT DECONTAMINATION

Monitoring equipment will be decontaminated with a phosphate-free soap and water. Wastewater generated during equipment decontamination will be collected and stored on site in drums or other appropriate containers labeled with the site name, media (soil/groundwater), date, and contractor name.

### **12.3 WASTEWATER DISPOSAL**

Upon completion of all necessary personnel and equipment decontamination at the site, the decontamination fluids will be treated through the IWTP.

### **13.0 EMERGENCY RESPONSE**

The following section provides information on personnel roles, lines of authority, and communications; safe distances and places of refuge; evacuation routes and procedures; and procedure for containing/collecting spills. A list of emergency phone numbers is provided on Figure 10-3. This list will be posted and updated as necessary in the MCAS site trailer.

#### **13.1 PERSONNEL ROLES, LINES OF AUTHORITY, AND COMMUNICATIONS**

The primary Emergency Coordinator (EC) for this site is the SS. In the event an emergency occurs, the SS or the highest-ranking employee on site will serve as the EC. The EC will determine the nature of the emergency and take appropriate action.

##### **13.1.1 Responsibilities and Duties**

It is recognized that the structure of the “Incident Command System” will change as additional response organizations are added. The Rhēa Team will follow procedures as directed by the fire department, Local Emergency Planning Committee (LEPC), and state and federal agencies, as required. The Rhēa Team will defer to the first on-scene local Fire Department individual with responsibility of taking command of the incident scene.

##### **13.1.2 On-Site Emergency Coordinator Duties**

The on-site EC is responsible for implementing and directing the emergency procedures. The EC will immediately contact outside authorities for assistance in the event of a spill or release.

Initially, emergency personnel and their communications will be coordinated through the EC. Specific duties of the EC are as follows:

- Identify the source and character of the incident, type, and quantity of release. Assess possible hazards to human health or the environment that may result directly from the problem or its control;

- Discontinue operations in the vicinity of the incident if necessary to minimize the potential that fires, explosions, or spills recur or spread to other parts of the site. While operations are dormant, monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment, where appropriate;
- Notify the Navy On-Scene Coordinator (NOSC) if outside emergency response help is necessary to control the incident;
- Direct on-site personnel to control the incident until, if necessary, outside help arrives;
- Verify that the building or area where the incident occurred and the surrounding area are evacuated, and shut off possible ignition sources, only if shut off can be achieved safely and is appropriate;
- If fire or explosion is involved, notify Local Fire Department, (911);
- Notify the ROICC;
- Notify the Rhēa PM.; and
- Notify the MCAS EAD and NAVFAC RPM.

If the incident may threaten human health or the environment outside of the site, the EC should immediately determine whether evacuation of the area outside of the site might be necessary and, if so, notify the Police Department and the on-site fire, safety, and rescue offices (See Figure 10-3).

When required (as determined by the NOSC), notify the National Response Center (NRC). The following information should be provided to NRC:

- Name and telephone number;
- Name and address of facility;
- Time and type of incident;
- Name and type of materials involved, if known;
- Extent of injuries; and
- Possible hazards to human health or the environment outside of the facility.

The emergency number for the NRC is **800-424-8802**.

If hazardous waste has been released or produced through control of the incident, the following steps shall occur:

- Waste is collected and contained;
- Containers of waste are removed or isolated from the immediate site of the emergency;
- Treatment or storage of the recovered waste, contaminated soil or surface water, or any other material that results from the incident or its control is provided;
- Check that no waste that is incompatible with released material is treated or stored at the site until cleanup procedures are completed;
- Check that all equipment used is decontaminated, recharged, and fit for its intended use before operations are resumed;
- Notify the USEPA Regional Administrator that cleanup procedures have been completed and that all emergency equipment is fit for its intended use before resuming operations in the affected area of the facility;
- Record time, date, and details of the incident, and submit a written report to the USEPA Regional Administrator. Report is due to USEPA within 15 days of the incident; and
- Perform the post-incident evaluation and response critique and submit a written report to the USEPA Regional Health and Safety Director within 30 days of the incident conclusion.

### **13.2 EMERGENCY RESPONSE EQUIPMENT**

Before work activities begin, the following emergency equipment will be stored at the MCAS site trailer and tested to verify working order:

- First aid kit (16-unit);
- Air horn;

- Emergency eyewash station (Compliant with ANSI Standard Z358.1-1990);
- 20 pound fire extinguisher (ABC-type);
- Additional Tyvek and other PPE, safety glasses, hard hats, hearing protection, and respirators;
- Water for washing hands and face; and
- Emergency Response Equipment including oil sorbent pads and 4 sacks of petroleum/oil absorbent material.

Other equipment used for the routine implementation of the worker health and safety protection and monitoring programs will be made available as needed to support emergency response activities.

### **13.3 SAFE DISTANCES AND PLACES OF REFUGE**

No single recommendation can be made for evacuation or safe distances because of the wide variety of emergencies that could occur. Safe distances will be determined at the time of the emergency based on a combination of site and incident-specific criteria. The following measures are established to serve as general guidelines.

In the event of minor hazardous materials releases (small spills of low toxicity), workers in the affected area will initially evacuate at least 50 feet in all directions to allow for cleanup and to prevent exposure. After initial assessment of the extent of the release and potential hazards, the EC or his designee will determine the specific boundaries for evacuation. Appropriate steps such as caution tape, rope, traffic cones, barricades, or personal monitors will be used to secure the boundaries.

In the event of a major hazardous materials release (large spills of high toxicity/greater than 55 gallons), workers will be evacuated from the site. If there are individuals in the area other than Rhēa employees, site personal will meet at the site entrance for a head count and to wait further instructions.

If the incident may threaten the health or safety of the surrounding community, the public will be informed and, if necessary, evacuated from the area. The EC, or his designee, will inform the proper agencies in the event that an evacuation is necessary. Places of refuge will be established prior to the commencement of activities. These areas must be identified for the following incidents:

- Chemical Release;
- Fire/explosion;

- Power loss;
- Medical emergency; and
- Hazardous weather.

## **13.4 EVACUATION ROUTES AND PROCEDURES**

Emergencies require prompt and deliberate action. In the event of an emergency, it will be necessary to follow an established set of procedures. Such established procedures will be followed as closely as possible. In specific emergency situations, the EC may deviate from the procedures to provide a more effective plan for bringing the situation under control. The EC is responsible for determining which situation requires site evacuation.

### **13.4.1 Evacuation Signals and Routes**

Two-way radio communications and an air horn will be used to notify employees of the necessity to evacuate an area or building involved in a release/spill of a hazardous material.

### **13.4.2 Evacuation Procedures**

In the event evacuation is necessary, the following actions will be taken:

- The emergency signal will be activated;
- No further entry of visitors, contractors, or trucks will be permitted. Vehicle traffic within the site will cease in order to allow safe exit of personnel and movement of emergency equipment;
- Shut off machinery and equipment if safe to do so;
- Rhēa on-site personnel, visitors, and contractors on site will assemble at the entrance to the site for a head count and await further instruction from the SHSO;
- Contract personnel and visitors will be accounted for. A final tally of persons will be made by the SHSO or designee. No attempt to find persons not accounted for will involve endangering lives of Rhēa or other employee's by reentry into emergency areas;

- The security guard will aid in accounting for visitors, contractors, and truck drivers by reference to sign-in sheets available from the site trailer;
- The SHSO or a designee will be assigned to be available at the entrance to direct and brief emergency responders; and
- Reentry into the site will be made only after clearance is given by the SHSO. At his direction, a signal or other notification will be given for reentry into the site.

### **13.5 PROCEDURE FOR CONTAINING / COLLECTING SPILLS**

The initial response to a spill or discharge will be to protect human health and safety, and the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

If a chemical spill is not contained within a dike or sump area, an area of isolation will be established around the spill. The size of the area will generally depend on the size of the spill and the materials involved. If the spill is large (greater than 55 gallons) and involves a tank or a pipeline rupture, an initial isolation of at least 100 feet in all directions will be used. Small spills (less than or equal to 55 gallons) or leaks from a tank or pipe will require evacuation of at least 50 feet in all directions to allow cleanup and repair and to prevent exposure. When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazard area. If possible, the area will be roped or otherwise blocked off.

If the spill results in the formation of a toxic vapor cloud (by reaction with the surrounding materials or by outbreak of fire) and its release (due to high vapor pressures under ambient conditions), further evacuation will be enforced. In general an area at least 500 feet wide and 1,000 feet long will be evacuated downwind if volatile materials are spilled.

If an incident may threaten the health or safety of the surrounding community, the public will be informed and possibly evacuated from the area. The on-site EC will inform the proper agencies in the event that this response is necessary.

### **13.6 FIRES**

Rhēa personnel and subcontractors are not trained professional firefighters. Therefore, if there is any doubt that a fire can be quickly contained and extinguished, personnel will vacate the area and immediately contact the MCAS Fire Department.

The following procedures will be used to prevent the possibility of fires and resulting injuries:

- Sources of ignition will be kept away from where flammable materials are handled or stored;
- The air will be monitored for explosive atmospheres before and during hot work and periodically where flammable materials are present. Hot work permits will be required and displayed for all such work;
- “No Smoking” signs will be conspicuously posted in areas where flammable materials are present;
- Fire extinguishers will be placed in all areas where a fire hazard may exist; and
- Before workers begin operations in an area, the EC will give instructions on egress procedures and assembly points.

The following procedures will be used in the event of a fire:

- Workers who see a fire will notify the EC who will contact the local Fire Department;
- When the emergency horn sounds, workers will disconnect electrical equipment in use (if possible) and proceed off site; and
- When a small fire has been extinguished by a worker, the EC will be notified.

***Small Fires:*** In the event of a small fire at the site, the EC will, at a minimum, take the following actions:

- Immediately notify the MCAS Fire Department;
- Evacuate all unnecessary personnel from the area to an upwind location, if possible;

- Attempt, using properly protected personnel, to extinguish fire using portable fire extinguishers or by smothering; and
- Request emergency response assistance (ambulance, fire, hospital, poison control center) as needed for any injuries or exposures to hazardous chemicals.

**Large Fires:** In the event of a large or small fire that cannot be extinguished, the SS/SHSO or EC will undertake the following actions:

- Immediately notify the MCAS Fire Department;
- Evacuate all personnel from the area of the fire, preferably to an upwind location;
- Order the appropriate level of protective clothing; and
- Notify the fire department and other emergency response agencies.

**Evacuation Procedures:** In the event that the EC should declare an evacuation, all personnel would be required to exit the defined work area to an upwind location near the site perimeter or beyond. Moreover, the evacuation procedures will be reviewed during site-specific training.

### **13.7 INCLEMENT WEATHER CONDITIONS**

Inclement weather conditions may occur without warning. It will be the responsibility of the EC to halt work due to eminent dangers. The EC will also be responsible for ordering the commencement of work once the danger has passed.

Work activities will not be started or continued when the following hazardous weather conditions are present:

- Lightning;
- Heavy rains; and
- High winds.

Personnel working in hazardous weather conditions will move to safe refuge. The EC will determine when it is necessary to evacuate the area and will coordinate these efforts with fire, police, and other agencies.

The EC will be responsible for assessing hazardous weather conditions and notifying personnel of specific contingency measures. Notifications will include:

- Rhēa PM;
- Rhēa Corporate Safety Manager;
- EAD and ROICC; and
- Local Civil Defense Organization (if necessary).

In the event of the potential for a hurricane to impact the work activities, the EC will implement the requirements of the Hurricane Preparation Plan (HPP), provided in Attachment B.

#### **14.0 HAZARD COMMUNICATION PROGRAM**

The Rhēa Hazard Communication Program complies with 29 CFR 1926.59/1910.1200. The MSDS sheets pertaining to materials known or suspected to be encountered at the project site can be obtained from the SHSO. A MSDS station is located at the MCAS site trailer. Most MSDS sheets were obtained from the Internet (not the manufacturer of the actual spilled contaminant) and are considered “generic.” MSDS sheets for more common materials typically used at project site (WD-40, motor oils, and cleaning surfactants) can be found in the General MSDS binder located at the MCAS site trailer.

Chemical and hazardous material containers will be properly labeled or tagged. Chemicals and hazardous materials transferred to other containers will be properly labeled to indicate the product stored within.

Site personnel will be provided training in reading and interpreting MSDS and labels. Personnel working with chemicals and/or hazardous materials will consult the MSDS and labels prior to using these materials.

Each subcontractor will be responsible for maintaining its Hazard Communications Program, list of chemicals and hazardous products, MSDS, and training.

#### **15.0 MEDICAL SURVEILLANCE PROGRAM**

In accordance with 29 CFR 1910.120(f), Rhēa is responsible for instituting a medical surveillance program for the following personnel:

- Employees who are or may be exposed to hazardous substances or health hazards at or above permissible exposure limits or, if there is no permissible limit, above the published

exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;

- Employees who will wear a respirator for 30 days or more a year as required by 29 CFR 1910.134; and
- Employees who are injured, become ill, or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation.

In addition, site workers (i.e., Rhēa employee or subcontractor employee) exhibiting symptoms relating to heat/cold stress or other work related physical disorder will be examined by his/her firm's licensed occupational physician as soon as practicable upon exhibiting these symptoms.

The Rhēa medical surveillance program is designed and will be implemented by a licensed occupational physician in accordance with 29 CFR 1910.120(f). Medical surveillance will include, at a minimum, the following procedures:

- Complete medical and work histories;
- Physical examination;
- Dermatology examination;
- Pulmonary function tests;
- Eye examination;
- Audiometric;
- Qualitative respirator fit test; and
- Urinalysis; and
- Blood chemistry.

## **FIGURES**



**FIGURE 6-1  
SIGN - IN LOG**

**RHEA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA**

<b>VISITOR NAME</b>	<b>COMPANY NAME</b>	<b>DATE</b>	<b>TIME IN</b>	<b>TIME OUT</b>	<b>PURPOSE OF VISIT</b>

**FIGURE 6-2  
DAILY SAFETY MEETING LOG**

**RHEA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA**

Date: \_\_\_\_\_ Time: \_\_\_\_\_ HSO: \_\_\_\_\_

**Safety Topics Presented**

<i>Issue</i>	<i>Today's Work Areas</i>			
<b>Chemicals of Concern</b>				
<b>Physical Hazards of Concern</b>				
<b>Special Concerns</b>				

**Attendees (Please Print)**

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**FIGURE 9-1**  
**SUPERVISOR'S ACCIDENT INVESTIGATION REPORT**

**RHEA ENGINEERS AND CONSULTANTS, INC.**  
**OUI SITE 16 AS/SVE SYSTEM DECOMMISSION**  
**MCAS CHERRY POINT, NORTH CAROLINA**

Check all that apply:  Injury/Illness       Fatality       Complaint  
 Not Work Related       Auto Liability       Auto Physical Damage  
 General Liability       Property Damage       Environmental

Exact Date, Day, and Time of Incident: \_\_\_\_\_  am  pm

Shift:  1st  2nd  3rd

TMS: \_\_\_\_\_  
(Employee's Home Division/Regional Office/Subsidiary)

Address: \_\_\_\_\_  
City State Zip

**PROJECT IDENTIFICATION (Project Related Incidents Only)**

Regular Full Time       Regular Part Time       Temporary       Non-Employee

Address: \_\_\_\_\_  
City State Zip

Birth Date: \_\_\_\_\_ Age: \_\_\_\_\_ Social Security No.: \_\_\_\_\_ Sex: \_\_\_\_\_

Job Title: \_\_\_\_\_ Department: \_\_\_\_\_ Date Hired: \_\_\_\_\_

Length of Employment:  In Training       Months       Years

Time in Job Class:  In Training       Months       Years

Name of Employee's Direct Supervisor: \_\_\_\_\_

Supervision at time of accident:  Directly Supervised       Indirectly Supervised       Not Supervised

Specific location where accident occurred: \_\_\_\_\_

\_\_\_\_\_  MEC Facility       Project Site       Not Supervised       Other \_\_\_\_\_

**FIGURE 9-1 (continued)**

**SUPERVISOR'S ACCIDENT INVESTIGATION REPORT**

To whom was incident reported?: \_\_\_\_\_ When?: \_\_\_\_\_

Witness Name/Address: \_\_\_\_\_

Witness Job Title/Reason in Area: \_\_\_\_\_

Describe Employee's job duties being performed when injured: \_\_\_\_\_

Describe fully the events which resulted in the accident/injury/illness: \_\_\_\_\_

Describe the injury/illness in detail; indicate part of body affected: \_\_\_\_\_

Name of object/substance which directly injured employee: \_\_\_\_\_

Has/will employee seek treatment?:  Yes  No      Did Employee Die?  Yes  No

Name/Address of Hospital/Doctor: \_\_\_\_\_

Describe treatment given: \_\_\_\_\_

Was employee able to return to work?:  Yes  No

If YES:  Regular Work  Work with restricted activities

Restriction: \_\_\_\_\_

If NO: Date lost time began: \_\_\_\_\_ Date/Est. Date to Return: \_\_\_\_\_

**FIGURE 9-1 (continued)**

**SUPERVISOR'S ACCIDENT INVESTIGATION REPORT**

Specify personal protective equipment used by injured employee: \_\_\_\_\_

What training or instruction had been given?: \_\_\_\_\_

How could this accident have been prevented? \_\_\_\_\_

Corrective Action: \_\_\_\_\_

Signature \_\_\_\_\_ (Supvr/Manager) Date \_\_\_\_\_

Signature \_\_\_\_\_ (Safety Officer) Date \_\_\_\_\_

Signature \_\_\_\_\_ (Project Manager) Date \_\_\_\_\_

**DISTRIBUTION**

Original to: Division Secretary at Employee's Home Office

- Copy to:  Corporate Health & Safety  Regional Health & Safety Manager  
 Project Manager  Site Safety File

**FIGURE 9-2  
EMPLOYEE INJURY REPORT**

**RHĒA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA**

Check all that apply:  Injury/Illness       Fatality       Complaint  
 Not Work Related       Auto Liability       Auto Physical Damage  
 General Liability       Property Damage       Environmental

Date, Day, and Time of Incident: \_\_\_\_\_  am  pm

Your Name: \_\_\_\_\_ Your Employee No.: \_\_\_\_\_

Home Address: \_\_\_\_\_ Home Phone No.: ( ) \_\_\_\_\_

Birth Date: \_\_\_\_\_ Age: \_\_\_\_\_ Social Security No.: \_\_\_\_\_ Sex: \_\_\_\_\_

Accident location (if project related, give Project No., Client, Address, and Phone No.):  
\_\_\_\_\_  
\_\_\_\_\_

On premises?  Yes  No

Business Name/Address: \_\_\_\_\_

How did accident occur?: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Was medical attention required?:  Yes  No

Did you return to work?:  Yes  No      Your usual job?:  Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_

Was the accident reported to a supervisor?:  Yes  No

Supervisor's Name: \_\_\_\_\_

\_\_\_\_\_  
Employee's Signature

\_\_\_\_\_  
Date

# FIGURE 10-1 ROUTE TO PRIMARY MEDICAL FACILITY

RHĒA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA

Craven Regional Medical Center

2000 Neuse Blvd.

P.O. Box 12157

New Bern, NC 28561

**Emergency # 911**

Non-Emergency # (252) 633-8111

**Directions to hospital:**

From the main gate, turn west onto SR 101 (Fontana Blvd.), bear right onto RT US 70 West (W. Main St.), follow 70 West to SR 1200 (Pembroke Road), turn left onto 1<sup>st</sup> Street, turn left onto US 17 (US 70 Bus/SR 55/Neuse Blvd.), turn right onto Hospital Drive, hospital is on the left.

**Travel Time:** Approx. 32 min.



## FIGURE 10-2 ROUTE TO SECONDARY MEDICAL FACILITY

RHĒA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA

### Carteret General Hospital

3500 Arendell Street

P.O. Drawer 1619

Morehead City, NC 28557

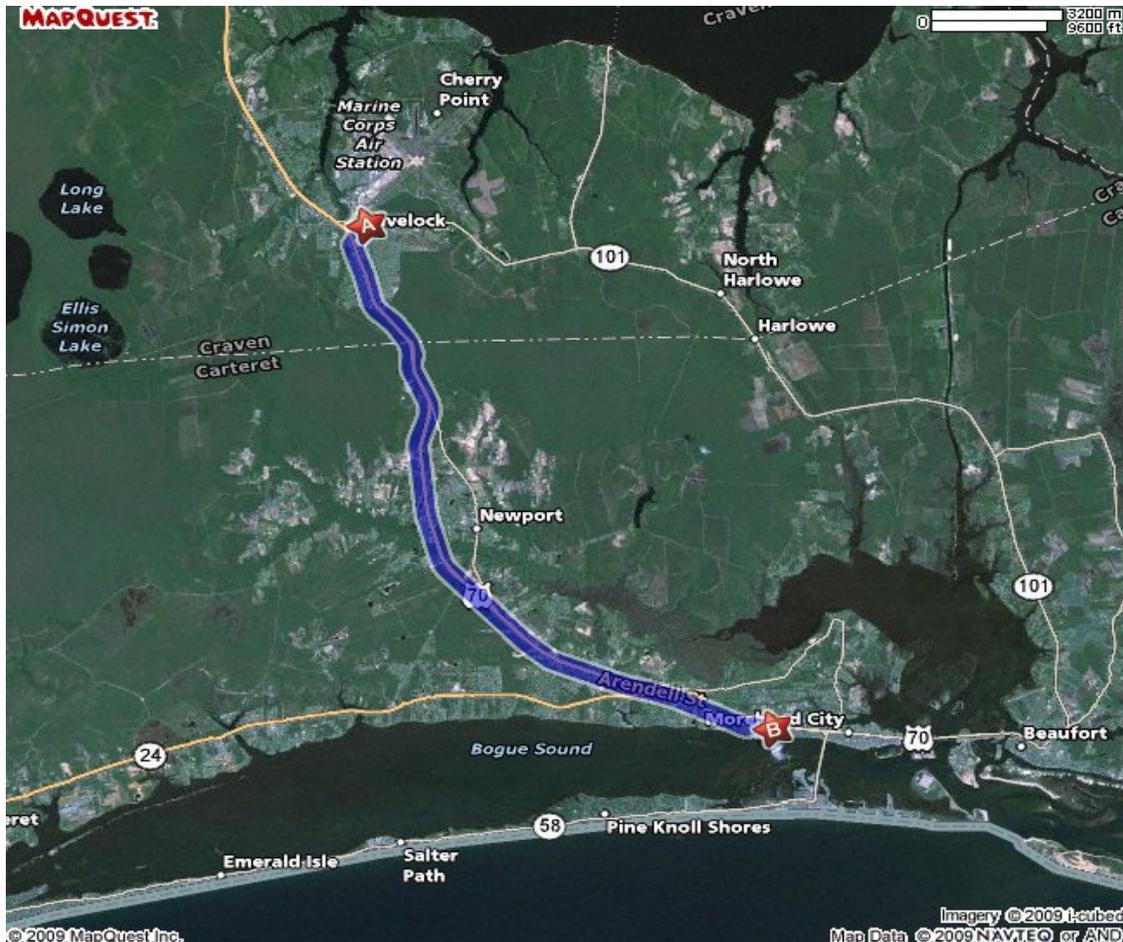
**Emergency # 911**

Non-Emergency # (252) 808-6000

### **Directions to hospital:**

Directions to Carteret General Hospital: From the main gate, turn west onto SR 101 (Fontana Blvd.), turn left onto RT US 70 East (E. Main St.), follow 70 East to North 35<sup>th</sup> Street, turn left into the hospital

**Travel Time:** Approx. 37 min.



**FIGURE 10-3  
EMERGENCY TELEPHONE NUMBERS**

**RHEA ENGINEERS AND CONSULTANTS, INC.  
OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION  
MCAS CHERRY POINT, NORTH CAROLINA**

<b>MCAS Cherry Point On-Site Emergency Telephone Numbers</b>
--

<b>Fire</b>	<b>252-466-3333</b>
<b>Security</b>	<b>252-466-3615</b>
<b>Safety</b>	<b>252-466-0102</b>
<b>ROICC (Karen Boyd)</b>	<b>252-466-4731</b>

<b>Off-Site Emergency Telephone Numbers</b>
---

<b>Site Superintendent / SHSO (Cell)</b>	<b>724-462-4202</b>
<b>Project Manager (Cell)</b>	<b>724-316-6593</b>
<b>Craven Regional Medical Center</b>	<b>252-633-8111</b>
<b>Carteret General Hospital</b>	<b>252-808-6000</b>
<b>Rescue Squad</b>	<b>911</b>
<b>Fire</b>	<b>911</b>
<b>Police</b>	<b>911</b>
<b>Poison Control</b>	<b>(800) 848-6946</b>
<b>ChemTrec/Spill Response</b>	<b>(800) 424-9300</b>
<b>National Response Center</b>	<b>(800) 424-8802</b>

**Important Notes:**

**If dialing 911 from a cell phone, the 911 call center in New Bern (or Carteret) will be contacted.**

**Dialing 911 on a base phone will contact the MCAS Cherry Point 911 operator.**

**To report a spill or fire, the MCAS Cherry Point 911 operator should be contacted.**

**The 911 call center can redirect cell phone calls to the MCAS Cherry Point 911 operator.**

**ATTACHMENT A**

**EXPERIENCE MODIFICATION RATING**



RATING AND UNDERWRITING REFERENCE

PA Merit Adjustment

DATA SEARCHES

- Rating Values and Classes
- Experience Rating/ Merit Rating
- Underwriting Guide
- Switch to DE
- Return to UL
- Log Out

Bureau File Number: 3080670

County: ALLEGHENY

Employer Name: RHEA ENGINEERS & CONSULTANTS

Address: 4951 WILLIAM FLYNN HWY SUITE 1  
GIBSONIA PA 15044

Governing Class: 955

Effective Date: 11/01/2008

Issue Date: 10/19/2008

Expiration Date: 11/01/2009

Card Number: 000001

XREF: 9885

Class	Rating Value	Description
9885		MERIT ADJUSTMENT - 5 % CREDIT

Merit History	Effective Date
9885 - Credit	01/28/2008
9885 - Credit	01/28/2007
9885 - Credit	01/28/2006
9885 - Credit	01/28/2005

[Back](#) | [View Bureau History/Authorized Classes](#)



**ATTACHMENT B**

**HURRICANE PREPARATION PLAN**

# **HURRICANE PREPARATION PLAN**

## **OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION MCAS, CHERRY POINT, NORTH CAROLINA**

**CONTRACT NO. N40085-08-D-1409**

**CTO: 0005**

**JUNE 2009**

**Rhēa Project No: 397**

*Prepared for:*

NAVFAC Mid-Atlantic  
NC IPT, Code OPCEV  
C/O LRA Building C  
6526 Hampton Boulevard  
Norfolk, VA 23508

*Prepared by:*

Rhēa Engineers & Consultants, Inc.  
4975 William Flynn Highway, Suite 14  
Gibsonia, Pennsylvania 15044

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# **OU1 SITE 16 AS/SVE SYSTEM DECOMMISSION MCAS CHERRY POINT, NORTH CAROLINA**

## **HURRICANE PREPARATION PLAN**

### **1.0 PURPOSE AND SCOPE**

Rhēa Engineers and Consultants, Inc. (Rhēa) has prepared this Hurricane Preparation Plan (HPP) to establish the standard operating procedures to follow in the event that impending hurricane weather conditions may affect site activities. Our goal is to provide for the safety of personnel and minimize financial loss caused by severe weather conditions.

Hurricanes are most likely to occur along the North Carolina coastline between June 1 and November 30 of each year. Since meteorologists are unable to accurately forecast hurricane storm speed, direction, or intensity, it is important to develop a plan of action to prepare for such events. The emergency procedures described herein apply to all Rhēa team personnel, subcontractors, and visitors associated with this project.

### **2.0 DEFINITIONS**

#### **2.1 TROPICAL DISTURBANCES**

Powerful cyclones characterized by destructive sustained winds, water spouts, heavy rain, and flooding are caused by depressions over tropical waters. Tropical disturbances are typically categorized by maximum surface wind velocity. The following describes the various degrees of tropical disturbances:

- Tropical Depression - Maximum surface winds of 38 miles per hour (mph);
- Tropical Storm - Maximum surface winds of 39 to 73 mph; and
- Hurricane - Maximum surface winds 74 mph or greater.

## 2.2 CONDITIONS OF READINESS

Commander, Naval Base Norfolk, has established five Conditions of Readiness (CORs) for hurricanes and other potentially dangerous tropical storms. The following describes each COR:

- **Condition V** - Destructive winds are possible at the Marine Corp Air Station (MCAS) Cherry Point within 96 hours;
- **Condition IV** - Destructive winds are possible at the MCAS Cherry Point within 72 hours;
- **Condition III** - Destructive winds are possible at the MCAS Cherry Point within 48 hours;
- **Condition II** - Destructive winds are possible at the MCAS Cherry Point within 24 hours; and
- **Condition I** - Destructive winds are possible at the MCAS Cherry Point within 12 hours.

## 2.3 HURRICANE NOTIFICATION

The National Weather Service will issue either a “watch” or a “warning” depending on the potential time of impact of the storm. These terms are described below:

- **Hurricane Watch** - A hurricane watch means that there is a threat of hurricane or tropical storm conditions in the coastal North Carolina area in the next 36 hours.
- **Hurricane Warning** - A hurricane warning is issued when a hurricane or tropical storm is expected to affect coastal North Carolina within 24 hours.

The National Weather Service classifications are described here only for reference. Official notification of upgrade or downgrade of condition of readiness will be provided by the Resident Officer In Charge of Construction (ROICC). The Rhēa team will be prepared to commence site security response action for condition upgrade within two hours of notification from the ROICC, regardless of time of day. For a listing of emergency telephone numbers please see the Site Health and Safety Plan (HASP).

### **3.0 RESPONSIBILITIES**

Worker safety during a hurricane requires the dedicated team effort from all Navy and Rhēa personnel. The proper organization and coordination of personnel will result in a smooth transition from execution of routine activities to completion of securing operations. Rhēa's Project Manager (PM), Site Health and Safety Officer (SHSO), and site labor forces each have specific responsibilities critical to the execution of this plan.

The ROICC will have the authority to direct the implementation of this plan. The ROICC will also be responsible for authorizing work to commence after the storm event.

#### **3.1 PROJECT MANAGER**

The PM is responsible for overall management of site activities. The PM's role in hurricane preparation is to verify that the field crews are adequately trained in the procedures outlined in this plan. The PM will verify that the field staff has adequate funding for resources (i.e., personnel, materials, and equipment) required to perform the response preparation actions. The PM will be supplied with or have record of inventory deemed irreplaceable and will make arrangements for its proper protection.

#### **3.2 SITE HEALTH AND SAFETY OFFICER**

As described in the HASP for this Project, the SHSO is the Site Superintendent (SS), and he will serve as the emergency coordinator (EC). In this role, the EC will be responsible for assuring the proper execution of this HPP in the field. The EC will be responsible for the coordination of personnel, supplies, and equipment necessary to begin securing operations within two hours of notification of condition upgrade from the ROICC. The EC will be the primary liaison between the ROICC, PM, and the site labor forces.

The EC will continue to monitor safety activities during execution of this plan and will retain authority to stop work due to impending weather conditions if, in his opinion, worker safety may be jeopardized.

#### **3.3 SITE LABOR FORCES**

Site laborers will be responsible for the actual performance of the site preparation at the direction of the EC. Laborers should also offer suggestions and alert the EC of any changing conditions.

## **4.0 RESPONSE ACTIONS**

The following sections describe the requirements expected during each of the five conditions of readiness. The action items described in this plan should be used for guidance only since it is impossible to develop contingency plans for each activity associated with a field project. The handling of specific field situations that are not described in the following action lists will be at the discretion of the EC.

### **4.1 CONDITION V (DESTRUCTIVE WINDS WITHIN 96 HOURS)**

The following activities will be performed at a minimum when Condition V response is required by the ROICC:

- Continue routine work activities;
- Perform normal daily job site cleanup and maintain good housekeeping practices, including containerizing waste materials and maintaining clear walkways to prevent tripping hazards;
- Notify site labor about impending dangers and train site workers on the content of this plan. Refresh work crews on general emergency response procedures (i.e., evacuation routes) as outlined in the HASP;
- Take inventory of emergency supplies such as first aid kits, sorbent material, polyethylene sheeting, security fencing, sand bags, and drums. Replenish supplies as necessary;
- Inspect the integrity of existing erosion and sedimentation controls (i.e., silt fence, hay bales, and erosion matting) and existing drainage receptor facilities. Make arrangements to repair deficient items;
- Inspect the office and/or storage trailer tiedowns for wear, pullout, or other damage. Make arrangements to repair deficient workmanship;

- Arrange to either transport contaminated materials off site or temporarily stage materials in competent containers (i.e., drums, roll-off boxes);
- Review requirements for Condition IV; and
- Contact ROICC for COR updates and completion of required actions.

#### **4.2 CONDITION IV (DESTRUCTIVE WINDS WITHIN 72 HOURS)**

The following activities will be performed at a minimum when Condition IV response is required by the ROICC:

- Continue Condition V preparations, if necessary;
- Continue routine work activities that do not affect preparation requirements described in this plan;
- Perform normal job site cleanup and maintain good housekeeping practices;
- Place lumber, piping, and other job materials in neat piles (less than four feet high) in a designated laydown area;
- Remove and store debris that may become “missile” hazards (i.e., any object that may become airborne in high winds);
- Review requirements for Condition III; and
- Contact ROICC for COR updates and completion of required actions.

#### **4.3 CONDITION III (DESTRUCTIVE WINDS WITHIN 48 HOURS)**

The following activities will be performed at a minimum when Condition III response is required by the ROICC:

- Maintain Condition IV requirements;
- Cease work activities that cannot be completed within 18 hours. Schedule work to minimize open excavations and other low-lying depressions that may collect water;
- Cease other work activities that interfere with securing operations;

- Begin stowing and securing portable equipment. Gasoline-powered portable equipment should be placed in a storage trailer when possible to prevent overturning;
- Secure portable sanitation facilities;
- Consolidate drums in drum storage area. Where possible, affix content label to the inside lid of the drum before tightening lid brackets. Arrange drums against permanent structure if possible. If this arrangement is not practical, arrange heavier drums around the perimeter of the drum staging area;
- Dismantle decontamination area and secure supplies;
- Review requirements for Condition II; and
- Contact ROICC for weather and COR updates and completion of required actions.

#### **4.4 CONDITION II (DESTRUCTIVE WINDS WITHIN 24 HOURS)**

The following activities will be performed at a minimum when Condition II response is required by the ROICC. Cease routine work activities until securing operations are completed.

- Cease routine work activities until securing operations are completed. Do not begin new scope of work tasks;
- Consolidate wood and piping piles and secure to ground using soil/concrete anchors and cables. As an alternative, excess building materials may be stored in an empty roll-off box or other suitable enclosed container sufficiently anchored to the ground surface;
- If off-site transportation of waste materials is not practical, cover contaminated waste stockpiles with 10-mil minimum plastic sheeting. Anchor sheeting using sandbags at a rate of one bag per 20 square feet of liner and one bag per five lineal feet of stockpile perimeter. Do not use scrap lumber, piping or

jagged rocks for this purpose. If practical, park heavy equipment in the anticipated upwind position in front of the waste material stockpile;

- Band drums together to form a single unit using steel banding equipment or heavy-duty ropes;
- Refuel heavy equipment. Fuel may be in short supply in the days following a hurricane. Secure temporary fuel storage tank if applicable;
- Pack all monitoring equipment, fax machine, computers, printers for transport to safe storage;
- Record storage inventory of all supplies, materials, drums, equipment remaining at the site; and
- Contact ROICC for weather updates and completion of required actions.

#### **4.5 CONDITION I (DESTRUCTIVE WINDS WITHIN 12 HOURS)**

The following activities will be performed at a minimum when Condition I response is required by the ROICC:

- Perform all remaining actions associated with the previous CORs;
- Secure tarps on roll-off containers;
- Arrange heavy equipment in a manner to protect other supplies, equipment, and/or stockpiles;
- Collect site files, plans, records, and drawings and transport to safe storage location;
- Personnel lodging in a hotel shall be provided with non-perishable food and drinking water for three days; also provide flashlight, batteries, transistor radio, personal hygiene supplies, and first aid supplies including bandages, pain relievers and special medications;

- Unplug all electrical components and switch external power supply to the OFF position;
- Document secured site with photographs;
- Notify ROICC of date and time of departure and anticipated date of return; and
- Lock all doors, account for all personnel, and leave site.

## **5.0 RESUMPTION OF WORK**

The ROICC will retain the authority to commence work activities. Before work begins, the ROICC and EC shall visit the site and assess damages. Inventory of supplies, materials, drums, and equipment will be verified at this time. Scope of work activities will commence as soon as practical after notice to proceed is directed by the ROICC.

A written damage assessment will be prepared by the EC, reviewed and approved by the ROICC, and forwarded to the PM.