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LETTER REGARDING TRANSMITTAL OF CHANGE PAGES FOR FINAL HEALTH AND
SAFETY PLAN FOR SITE ASSESSMENT AT BRONSON FIELD NAS PENSACOLA FL
1/31/2001
TETRA TECH

03800322



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TtNUS/TAL-01-081/0380-3.2

January 31, 2001

Project Number 0380

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Mr. Byas Glover (Code 18410)
Remedial Project Manager
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: Clean Contract No. N62467-94-D0888
Contract Task Order No. 0106

Subject: Final Health and Safety Plan for Supplemental Site Assessment at Outlying
Landing Field Bronson, Pensacola, Florida

Dear Mr. Glover:

Tetra Tech NUS is pleased to submit page inserts for the Final Health and Safety Plan for Supplemental Site Assessment at Outlying Landing Field Bronson, Pensacola, Florida. Please insert these pages in your draft copy of the Plan. If you have any questions regarding this plan or require further information, please contact me at (904) 385-9899.

Sincerely,

A handwritten signature in cursive script that reads "Gerald Walker".

Gerald Walker, P.G.
Task Order Manager

GW/gw

Enclosures (1)

cc: Ms. D Wroblewski, TtNUS (Cover letter only)
Mark Perry/file, TtNUS (unbound)

Health and Safety Plan
for
Supplemental Site Assessment
at
Outlying Landing Field Bronson
Pensacola, Florida



Southern Division
Naval Facilities Engineering Command
Contract No. N62467-94-D-0888
Contract Task Order 0106

January 2001

**HEALTH AND SAFETY PLAN
FOR
SUPPLEMENTAL SITE ASSESSMENT
AT**

**OUTLYING LANDING FIELD BRONSON
PENSACOLA, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION-NAVY (CLEAN) CONTRACT**

**Submitted to:
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406**

**Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Pittsburgh, Pennsylvania 15222**

**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0106**

JANUARY 2001

**PREPARED UNDER THE
SUPERVISION OF:**



**GERALD WALKER
TASK ORDER MANAGER
TETRA TECH NUS, INC.
TALLAHASSEE, FLORIDA**

APPROVED FOR SUBMITTAL BY:



**MATTHEW M. SOLTIS, CIH, CSP
CLEAN HEALTH & SAFETY MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA**

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1.0 INTRODUCTION

Authorization: This Health and Safety Plan (HASP) and the work described within are completed under the authorization of:

Contract: Comprehensive Long-Term Environmental Action Navy (CLEAN III)

Contract Number: N62467-94-D-0888

Contract Task Order: 0106

Proposed Dates of Work: To be determined

Application: This Health and Safety Plan (HASP) has been written to encompass site activities that are to be conducted at properties associated with the Outlying Landing Field (OLF) Bronson, located west of Pensacola, Florida as part of Contract Task Order (CTO) 0106. Specifically, this HASP addresses the remedial investigation activities to be conducted at Site 1140-NW former Boat Shed and Pier.

Site activities to be conducted at OLF Bronson include the following (see Section 4.0 for a detailed description):

- Mobilization/demobilization
- Soil boring activities (Direct Push Technology [DPT])
- Multi-media sampling, including:
 - Soil
 - Groundwater
 - Investigative-Derived Waste (IDW)
- Decontamination of sampling and heavy equipment
- IDW management
- Geophysical and geographical surveying.

Compliance: The elements of this HASP are intended to be in compliance with the requirements established by:

- OSHA 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response" (HAZWOPER)
- Applicable sections of 29 CFR 1926 "Safety and Health Regulations For Construction."
- Tetra Tech NUS Health and Safety Program

Modifications/Changes: The following conditions are considered sufficient basis for change and will serve as triggers to institute review and possible changes to this document

- The addition of activities outside of those specified in Section 4.0, Scope of Work.
- Task Modifications to those activities specified within Section 4.0, Scope of Work.
- New information becomes available through the course of the investigation and/or from outside sources.

All changes to this HASP will be requested through the Task Order Manager (TOM) to the Tetra Tech NUS Health and Safety Manager (HSM) using the Tetra Tech NUS, Inc. Field Task/Health & Safety Plan Modification Request Form. It is the responsibility of the TOM to notify all affected personnel of all changes to this HASP. Changes to the HASP will be documented using a Document Review Record.

1.1 KEY PROJECT PERSONNEL AND ORGANIZATION

This section defines responsibility for site safety and health for TtNUS and subcontractor employees engaged in onsite activities. Personnel assigned to these positions will exercise the primary responsibility for all onsite health and safety. These persons will be the primary points of contact for any questions regarding the safety and health procedures and the selected control measures that are to be implemented for on-site activities.

- The TtNUS TOM is responsible for the overall direction of health and safety for this project. This includes but is not limited to, the following duties
 - i. Prepares background review - Results from past investigation activities at OLF Bronson, Pensacola, Florida (pertinent data - peak concentrations/exceedances by site media for each contaminant at each location of the investigation).
 - ii. Defines the specific scope of work to be performed.
 - iii. Determines the appropriate points of contact within OLF Bronson (i.e., Base Contact, Base Security, Utilities, Emergency notification procedures, closest hospital, Facility Emergency Response capabilities, etc.)
 - iv. Obtains site access, not only to the base, but also to files and records that may have some bearing or pertinence pertaining to this project.

- The Project Health and Safety Officer (PHSO) is responsible for developing this HASP in accordance with internal and external requirements. Specific responsibilities include:
 - i. Providing information regarding site contaminants and physical hazards associated with the site.

- ii. Establishing air monitoring and decontamination procedures.
 - iii. Assigning personal protective equipment based on task and potential hazards.
 - iv. Determining emergency response procedures.
 - v. Stipulate training and appropriate medical surveillance requirements for Tetra Tech NUS and subcontractor personnel.
 - vi. Providing standard work practices to minimize potential injuries and exposures associated with the project scope of work.
 - vii. Modifies this HASP, if/as necessary.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed Site Safety Officer. The FOL manages field activities, executes the work plan, and enforces safety procedures as applicable to the work plan.
 - The Site Safety Officer (SSO) supports site activities by advising the FOL on all aspects of health and safety on-site. These duties may include:
 - i. Coordinating all health and safety activities with the FOL.
 - ii. Selecting, applying, inspecting, and maintenance of personal protective equipment.
 - iii. Establishing work zones and control points in areas of operation.
 - iv. Implementing air monitoring program for onsite activities.
 - v. Verifies training and medical clearance of on-site personnel status in relation to site activities.
 - vi. Implementing Hazard Communication and other associated health and safety programs, as they may apply to site activities.
 - vii. Coordinating emergency services.
 - viii. Providing site-specific training for all onsite personnel.
 - ix. Investigating all accidents and injuries (see Attachment I - Illness/Injury Procedure and Report Form)
 - x. Providing input to the PHSO regarding the need to modify this HASP, or applicable health and safety associated documents.
 - Compliance with the requirements stipulated in this HASP are monitored by the SSO and coordinated through the TtNUS CLEAN HSM and PHSO.

Note: In some cases one person may be designated responsibilities for more than one position. For example, at OLF Bronson the FOL may also be responsible for the SSO duties. This action will be performed only as credentials, experience, and availability permits.

1.2 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: OLF Bronson **Address:** Pensacola, Florida

U.S. Navy
Remedial Project Manager/Engineer-In-Charge: Byas Glover **Phone Number:** (843) 820-5651

U.S. Navy
Environmental Coordinator: Ron Joyner **Phone Number:** (850) 452-4611 Ext. 103

U.S. Navy Underground Storage Tank
Program Manager: Greg Campbell **Phone Number:** (850) 452-4611 Ext. 103

Purpose of Site Visit: This activity is divided into a multi-task operation (see Section 4.0), including Direct Push Technology [DPT] soil borings multi-media sampling, and other related activities.

Proposed Dates of Work: January 2001 until completed

Project Team:

Tetra Tech NUS Personnel:	Discipline/Tasks Assigned:	Phone No.#
<u>Gerald Walker</u>	<u>Task Order Manager</u>	<u>(850) 385-9899</u>
<u>Matthew M. Soltis, CIH, CSP</u>	<u>CLEAN Health and Safety Manager</u>	<u>(412) 921-8912</u>
<u>Thomas M. Dickson, CSP</u>	<u>Project Health and Safety Officer</u>	<u>(412) 921-8457</u>
<u>TBD</u>	<u>Project Geologist</u>	<u></u>
<u>TBD</u>	<u>Field Operations Leader (FOL)</u>	<u></u>
<u>TBD</u>	<u>Site Safety Officer (SSO)</u>	<u></u>
<u>Tom Patton</u>	<u>Equipment Manager</u>	<u>(412) 262-4583</u>

Non-Tetra Tech NUS Personnel	Affiliation/Discipline/Tasks Assigned	
<u>TBD</u>	<u>Analytical Laboratory</u>	<u></u>
<u>TBD</u>	<u>Surveyor (Geographical)</u>	<u></u>
<u>TBD</u>	<u>DPT Subcontractor</u>	<u></u>
<u>FedEx</u>	<u>Sample/Parcel Delivery</u>	<u>1(800)463-3339</u>

Hazard Assessments (for purposes of 29 CFR 1910.132) and HASP preparation conducted by:

Thomas M. Dickson, CSP

2.0 EMERGENCY ACTION PLAN

2.1 INTRODUCTION

This section is part of a preplanning effort to direct and guide field personnel in the event of an emergency. All site activities will be coordinated with NAS Pensacola Fire Protection and Emergency Services, prior to commencement. In the event of an emergency, which cannot be mitigated using onsite resources, personnel will evacuate to a safe place of refuge and the FOL will contact "Station 911", to report the emergency. Site personnel may transport ill workers or those who have non-serious injuries to medical facilities, provided that such transport can be done safely. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of site operations, which ensures adequate emergency response time. NAS Pensacola Emergency Dispatch will be notified anytime outside response agencies are contacted. This Emergency Action Plan conforms to the requirements of 29 CFR 1910.38(a), as allowed in 29 CFR 1910.120(I)(1)(ii).

TtNUS will, through necessary services, include initial response measures for incidents such as:

- Initial fire-fighting support and prevention
- Initial spill control and containment measures and prevention
- Removal of personnel from emergency situations
- Provision of initial medical support for injury/illness requiring only first-aid level support
- Provision of site control and security measures as necessary

2.2 PRE-EMERGENCY PLANNING

Through the initial hazard/risk assessment effort, injury or illness resulting from exposure to chemical or physical hazards or fire are the most probable emergencies that could potentially be encountered during site activities. To minimize and eliminate these potential emergency situations, pre-emergency planning activities associated with this project include the following. The SSO and/or the FOL are responsible for:

- Coordinating response actions with NAS Pensacola Emergency Services personnel to ensure that TtNUS emergency action activities are compatible with existing facility emergency response procedures.

- Establishing and maintaining information at the project staging area (Support Zone) for easy access in the event of an emergency. This information includes the following:
 - Chemical Inventory (for substances used onsite), with Material Safety Data Sheets.
 - Onsite personnel medical records (medical data sheets).
 - A logbook identifying personnel onsite each day.
 - Emergency notification phone numbers in all site vehicles
- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site, and providing early recognition and prevention, where possible.

It is the responsibility of the TtNUS FOL to ensure that this information is available and present at the site.

2.3 EMERGENCY RECOGNITION AND PREVENTION

The primary focus of this section is the ability to recognize and control factors, that could contribute to an emergency situation/conditions. The FOL and/or the SSO will preview all site work location prior to committing personnel or resources. Their actions will be as follows:

- Identify, remove, and/or barricade physical hazards within the estimated work area. Ensure that approach paths into the work area have established access and control points to ensure pedestrian traffic is not impacted by the heavy equipment operation or other installation activities.
- Provide the necessary equipment to control potential emergencies (i.e., safety cans for flammable liquid storage, spill containment equipment, PPE, and emergency equipment such as portable fire extinguishers).
- Evaluate operations to ensure that necessary measures are taken to control and/or minimize the impact of emergency situations/conditions. This includes actions such as, but not limited to,
 - Securing the necessary permits and clearances such as Utility and Excavation Clearances provided by the Base Public Works and Sunshine (Florida One-Call Utility Locating System).
 - Ensure emergency equipment and resources are at the ready, should they be needed for incidental response measures.

- Ensure all personnel are adequately trained in the provisions of this HASP and this Emergency Action Plan.
- Complete site characterization for all predetermined work in contaminated areas to quantify and qualify the hazards associated with those areas. Based on the results obtained the areas will be demarcated and restricted to only approved personnel.

Field Crew shall:

- At the FOL and/or the SSO's direction remove, or barricade physical hazards within the estimated work area identified by the FOL and/or the SSO.
- Follow the guidelines for control of emergency conditions.
- Report any potential emergency situation to the FOL and/or the SSO.

It is recognized through the following activities that an emergency has the potential to occur and prevention will be initially directed to control those situations.

2.3.1 Drilling Activities

The potential emergencies that could result during this activity are primarily physical in nature. They include being struck by the equipment, entanglement into rotating machinery (coring operation), striking an underground utility, and associated traffic hazards. The control measures to be put in place to minimize these occurrences are as follows:

Traffic Patterns in and around the drilling area – Traffic for heavy equipment and pedestrians shall be separated by flow patterns. All heavy equipment (drill rigs and support vehicles) shall be routed in a singular direction to minimize backing, U-turns and other maneuvers that could result in an accident. A demarcation area shall be established in plain view, so all personnel recognize the boundary of potential physical hazards, which is the height of the mast plus five feet or 25-feet, whichever is greater. All personnel not directly supporting this operation shall remain outside of this designated/demarcated area.

Entanglement in Rotating Equipment – This is not a significant hazard as this activity is primarily associated with using the DPT's coring capabilities when proceeding through concrete, asphalt, or other dense material. It is addressed here only as a reminder. Other hazards of this nature shall be avoided through strict adherence to the safe work practices described in Section 5.2.

Contact with Underground Energized Systems - Hazards of this nature shall be avoided through the use of Attachment II, Standard Operating Procedure (SOP) for Utility Locating and Excavation Clearance.

2.3.2 Fire

There is limited potential for fire during this operation and most associated with resource deployment (fueling equipment and decontamination solvents). Fire protection and prevention methods will be followed as specified in Section 2.9.2.

2.4 SAFE DISTANCES AND PLACES OF REFUGE

2.4.1 Safe Place of Refuge Selection

The FOL and/or the SSO shall identify a safe place of refuge (in the event of an emergency) on the Safe Work Permit (See Attachment IV). This location will be selected and conveyed to the Field Crew as part of issuing the Safe Work Permit at the beginning of each field task and at each location, where the primary and alternate safe place of refuge may change. Selection will be based on the following considerations:

- A location providing telephone communications and/or shelter.
- A location from which the field crews can provide site security restricting access to the emergency area, however, a point from which the field crew may direct emergency response personnel (i.e., intersection or gate, etc.).

In all cases this location should be positioned a sufficient (safe) distance from the operation whereas not to be impacted by the emergency. This distance is impacted by a number of conditions (i.e., tasks being conducted; chemical, physical, and toxicological properties; potential for fire and explosion; meteorological conditions; terrain). Based on the level of reported contaminants and the types of contaminants, it is not anticipated that the area to be secured in the event of an emergency will extend above those specified in Section 9.1.1 (Exclusion Zone).

2.4.2 Critical Operations

There are no operations being conducted under this scope of work that are considered critical and would require an individual or individuals to man during an emergency. Therefore in the event of an emergency all personnel will cease all operations and report to the safe place of refuge.

2.5 DECONTAMINATION PROCEDURES/EMERGENCY MEDICAL TREATMENT

During an evacuation, decontamination procedures will be performed only, if doing so does not further jeopardize the welfare of site workers. However, it is unlikely that an emergency would occur which would require workers to evacuate the site without first performing decontamination procedures. Decontamination of medical emergencies will proceed in the following manner.

2.5.1 Non-Life Threatening Medical Incident (Bruises, Cuts, Scrapes, Etc.)

The area of clothing or suit penetration will be isolated from the decontamination procedure by removing the protective garments or clothing surrounding the area of the injury and applying a light gauze wrap and plastic cover. Decontamination for unaffected areas will proceed as per Table 5-1 of this HASP.

2.5.2 Life Threatening

- Notify off-site response agencies.
- If it will not endanger the injured individual (i.e., spinal cord injury, etc.) remove any outer PPE. Removal may require the use of bandage scissors to remove the outer garments.
- Begin life saving techniques as appropriate (CPR, cooling or warming regimens, etc.).
- Wrap the injured in a blanket for transport to the hospital.
- Engage Emergency Notification Sequence
- Follow instructions provided in Figure 2-1.

Note: One person from the field team will accompany the injured to the hospital with his/her medical data sheet, appropriate MSDSs (if applicable), a copy of this HASP, and the incident forms. This person will collect as much information as possible and transfer that information to the HSM and Work Care as per the Incident Response Protocol provided in Figure 2-1. All other personnel will engage site control/site security measures.

The SSO upon insuring care for the injured party will engage an investigation of the incident to gather as much information as possible. This includes as a minimum Who? What? Where? When? Why? and How?. This information will then be communicated to the PM and the HSM. Attachment I Tetra Tech NUS, Inc. Injury/Illness Procedure will be used to accomplish this task

2.5.3 Emergency Medical Treatment

Tetra Tech NUS and subcontractor personnel are only permitted to provide treatment to the level of their First-Aid Training. It should also be noted all first-aid administered is based on voluntary provision. First aid provided will incorporate the following protective measures:

Emergency medical treatment will be initiated under the following guarded restrictions:

- Notify the FOL and/or the SSO of the incident.

- Take the necessary precautions to prevent direct contact with the injured person's body fluids. This may be accomplished through the employment of the following measures:
 - Use surgeons gloves when handling cuts, abrasions, bites, punctures, etc. or any part of the injured person. The use of safety glasses and surgeons masks maybe necessary, if there is the potential for uncontrolled spread of body fluids. In situations where contact occurs with non-intact skin, eyes, mouth, or other mucous membranes should be immediately reported to the PHSO.

 - Should Cardio-Pulmonary Resuscitation (CPR) be required, use a CPR Micro-Shield mouthpiece when administering CPR to prevent contact with the injured party's body fluids.

In order to engage these protective measures the FOL shall insure that these items are part of their first-aid kit.

2.6 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES

Since TtNUS personnel will not always be working in the proximity of each other, hand signals, voice commands, air horns, and/or two-way radios may comprise the mechanisms to alert site personnel of an emergency.

If an incident occurs, site personnel will initiate the following procedures:

- Initiate incident alerting procedures (if needed) verbally, by air horn, or using two-way radios.
- Evacuate non-essential personnel.
- Initiate initial response procedures.
- Describe to the FOL (who will serve as the Incident Commander) what has occurred in as much detail as possible.

In the event that site personnel cannot control the incident through offensive and/or defensive measures, the FOL and/or the SSO will enact emergency notification procedure to secure additional outside assistance in the following manner:

- Call 911 for outside emergency service and report the emergency to the NAS Pensacola Emergency Dispatch (See Table 2-1)
- Give the emergency operator the location of the emergency and a brief description of what has occurred.
- Stay on the phone follow the instructions given by the operator
- The appropriate agency will be notified and dispatched

If an incident occurs at outside of our designated operating areas impacting field personnel, the following procedures are to be initiated:

- Initiate an evacuation (if needed) by voice commands, hand signals, air horns, or two-way radio.
- Call Navy On-Site Representative
- Proceed to the assembly points as directed by OLF Bronson or other Navy personnel.

2.7 EMERGENCY CONTACTS

Prior to performing work at the site, all personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an incident. A mobile phone shall be available on site. Table 2-1 provides a

list of emergency contacts and their corresponding telephone numbers. This table must be posted on site where it is readily available to all site personnel.

**TABLE 2-1
EMERGENCY CONTACTS
NAS PENSACOLA (OLF BRONSON)**

AGENCY	TELEPHONE
EMERGENCY (outside services) (Police, Fire, and Ambulance Services)	911
NAS Pensacola - Emergency Dispatch	(850) 452-3333
U.S. Navy Remedial Project Manager/Engineer-in-Charge – Mr. Byas Glover	(843) 820-5651
U.S. Navy Environmental Coordinator – Mr. Ron Joyner	(850) 452-4611
U.S. Navy Underground Storage Tank Program Manager – Mr. Greg Campbell	(850) 452-4611 Ext. 103
Navy Hospital	(850) 505-6600/6601
Baptist Hospital	(850) 469-2313
TtNUS Tallahassee Office/Task Order Manager (Gerry Walker)	(850) 385-9899
CLEAN Health and Safety Manager (Matthew M. Soltis)	(412) 921-8912
Project Health and Safety Officer (Thomas M. Dickson)	(412) 921-8457
WorkCare (TtNUS Healthcare Provider)	(800) 229-3674

2.8 ROUTE TO HOSPITALS

For emergency care only, non-Navy personnel are permitted to go to the Navy Hospital.

Navy Hospital
6000 West Highway 98
(850) 505-6600/6601

Proceed out of Main Gate (Navy Blvd) heading north to US Highway 98. Turn left (heading west) on US 98 and proceed approximately 1 mile. Hospital will be on the right (Building 2268).

Baptist Hospital will be used for all non-emergency care services.

Baptist Hospital
1000 West Morino Street
(850-469-2313)

Proceed out of Main Gate of OLF Bronson, turning north on State Route (SR) 293. Continue on SR 293 approx. 7.5 miles, then turn right (heading south) on SR 295. Proceed approx. 0.5 miles to SR 292. Turn left (heading east) on Highway 292 and continue until it turns into Garden Street (approx. 3 miles). Take Garden Street to intersection with "E" Street. Turn left onto "E" Street and proceed approx. 1 mile to Hospital on left.

A map indicating the travel route from the site to the Navy Hospital will be inserted as Figure 2-1.

2.9 PPE AND EMERGENCY EQUIPMENT

A first aid kit, eye wash units (as necessary), and fire extinguishers will be maintained on-site at an easily accessible location and shall be immediately available for use in the event of an emergency. Based on the hazards anticipated, these incident response abatement items may be maintained at the exclusion zone of on-going operations as determine and communicated to the field crew through the Safe Work Permit. This will be at the discretion of the SSO.

The FOL and/or the SSO should ensure the First-Aid Kits are provided stocked with the necessary equipment. All first-aid kits purchased for the job-site shall be American National Standards Institute (ANSI) Z308.1 approved for industrial applications. Additional provisions, if not included in the First-Aid Kit such as a Micro-Shield CPR mask identified within this plan will have to be secured in addition to the kit. The SSO will determine the number of kits necessary based on the number of personnel and the number of remote operations being conducted under the scope of work. It is the SSO's responsibility to assess work site applications for specific first-aid needs based on operations being conducted and the vicinity to one another these tasks are being conducted.

PPE levels to be used in an emergency will not exceed those items used in the completion of identified tasks. These anticipated levels of PPE are indicated below.

2.9.1 PPE Requirements - Incidental Spill of Investigative Derived Wastes (IDW)

- PVC Rain-Suits or Tyvek based on the potential for soiling work clothes during clean-up
- PVC or Neoprene Over-boots (Pant legs on the outside of the over-boots)
- Nitrile inner surgeons gloves with Nitrile outer gloves over top
- Hard hat as conditions or overhead hazards exist
- Safety Glasses
- Splash Shields as necessary

Spill equipment (identified in Section 10.0) will be maintained in the investigative derived waste storage and/or the resource deployment area to support rapid response.

2.9.2 Fire Fighting

Standard field attire will be used to combat incipient stage fires, from a sufficient distance as not to endanger field personnel. Fire extinguishers will be maintained at the following locations:

- Support trailer (As applicable)
- On each piece of equipment in excess of 1 ton rating (i.e., trucks, excavator, drill rig, etc.)
- At all locations which store, dispense or otherwise handle flammable or combustible liquids.

It will be the responsibility of the SSO to ensure enough fire extinguishers are available to support on-site operations in the vulnerable locations stated above.

All personnel will be trained in the proper use and inspection of the fire extinguishers provided by their employer for use. The training information to be provided during site-specific training may be found in Attachment VII of this document.

2.10 INJURY/ILLNESS REPORTING

If any TtNUS personnel are injured or develop an illness as a result of working on site, the TtNUS "Injury/Illness Procedure" (Attachment I) must be followed. Following this procedure is necessary for documenting all of the information obtained at the time of the incident. Also, as soon as possible the Base Contact must be informed of any incident or accident that requires medical attention.

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed on-site. If an exposure to hazardous materials has occurred, provide information on the chemical, physical, and toxicological properties of the subject chemical(s) to medical service personnel.

FIGURE 2-1 EMERGENCY RESPONSE PROTOCOL

The purpose of this protocol is to provide guidance for the medical management of injury situations.

In the event of a personnel injury or accident:

- Rescue, when necessary, employing proper equipment and methods.
- Give attention to emergency health problems -- breathing, cardiac function, bleeding, and shock.
- Transfer the victim to the medical facility designated in this HASP by suitable and appropriate conveyance (i.e. ambulance for serious events)
- Obtain as much exposure history as possible (a Potential Exposure report is attached).
- If the injured person is a Tetra Tech NUS employee, call the medical facility and advise them that the patient(s) is/are being sent and that they can anticipate a call from the WorkCare physician. WorkCare will contact the medical facility and request specific testing which may be appropriate. WorkCare physicians will monitor the care of the victim. Site officers and personnel should not attempt to get this information, as this activity leads to confusion and misunderstanding.
- Call WorkCare at 1-800-455-6155 and enter Extension 109, or follow the voice prompt after hours and on weekends and be prepared to provide:
 - Any known information about the nature of the injury.
 - As much of the exposure history as was feasible to determine in the time allowed.
 - Name and phone number of the medical facility to which the victim(s) has/have been taken.
 - Name(s) of the involved Tetra Tech NUS, Inc. employee(s).
 - Name and phone number of an informed site officer who will be responsible for further investigations.
 - Fax appropriate information to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) at 1-800-245-2730.

As data is gathered and the scenario becomes more clearly defined, this information should be forwarded to WorkCare.

WorkCare will compile the results of all data and provide a summary report of the incident. A copy of this report will be placed in each victim's medical file in addition to being distributed to appropriately designated company officials.

Each involved worker will receive a letter describing the incident but deleting any personal or individual comments. A personalized letter describing the individual findings/results will accompany this generalized summary. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

**FIGURE 2-1 (continued)
POTENTIAL EXPOSURE REPORT**

Name: _____ Date of Exposure: _____
Social Security No.: _____ Age: _____ Sex: _____
Client Contact: _____ Phone No.: _____
Company Name: _____

I. Exposing Agent

Name of Product or Chemicals (if known): _____

Characteristics (if the name is not known)

Solid Liquid Gas Fume Mist Vapor

II. Dose Determinants

What was individual doing? _____

How long did individual work in area before signs/symptoms developed? _____

Was protective gear being used? If yes, what was the PPE? _____

Was there skin contact? _____

Was the exposing agent inhaled? _____

Were other persons exposed? If yes, did they experience symptoms? _____

III. Signs and Symptoms (check off appropriate symptoms)

Immediately With Exposure:

Burning of eyes, nose, or throat
Tearing
Headache
Cough
Shortness of Breath

Chest Tightness / Pressure
Nausea / Vomiting
Dizziness
Weakness

Delayed Symptoms:

Weakness
Nausea / Vomiting
Shortness of Breath
Cough

Loss of Appetite
Abdominal Pain
Headache
Numbness / Tingling

IV. Present Status of Symptoms (check off appropriate symptoms)

Burning of eyes, nose, or throat
Tearing
Headache
Cough
Shortness of Breath
Chest Tightness / Pressure
Cyanosis

Nausea / Vomiting
Dizziness
Weakness
Loss of Appetite
Abdominal Pain
Numbness / Tingling

Have symptoms: (please check off appropriate response and give duration of symptoms)

Improved: _____ Worsened: _____ Remained Unchanged: _____

V. Treatment of Symptoms (check off appropriate response)

None: _____ Self-Medicating: _____ Physician Treated: _____

FIGURE 2-2
HOSPITAL LOCATION MAP

3.0 SITE BACKGROUND AND DESCRIPTION

3.1 OLF BRONSON

OLF Bronson is located in Escambia County, in Florida's northwest coastal area, approximately 5 miles west of the Pensacola City limits. The 950-acre installation was constructed in the early 1940s. Prior to construction, the site was undeveloped and sparsely vegetated. Several unpaved roads or airstrips were visible at the site leading to the paved circular area. The original name of the airfield, Tarklin Field, was changed to OLF Bronson during the installation construction activities. The base was used a training base for Naval aviators during World War II and the Korean War. The western portion of OLF Bronson was also used to maintain sea planes and train sea plane pilots. OLF Bronson was closed as an active airfield in 1950, but the runways were still used for touch-and-go landing for helicopter training. After 1950, base dismantling activities were conducted. By 1968, all buildings located at OLF Bronson were razed. Aerial photographs identify areas to the south, east, and north of the facility as undeveloped with the exception of some residential properties along U.S. Highway 98, and Perdido Bay (0.5 miles north of the facility).

3.1.1 Site 1140-NW

Site 1140 is located on the northwest corner of the remains of Building 1140. Maps of OLF Bronson show Building 1140 was designated as a boat shed and pier. South of the site is a guard shack and flag pole; to the north is the MWR boat pier, MWR building, and Country Store; to the east is a main road running north to south and one of the base compounds; and 300 feet to the west is Perdido Bay. Petroleum contamination was discovered at the site in 1994 during the removal of an UST (1,000-gallon capacity) previously used to store heating fuel oil.

3.1.2 Previous Site Investigation (10/99)

On-going efforts to qualify and quantify chemical contamination at OLF Bronson was continued in October of 1999. Groundwater Monitoring Wells were installed and samples were collected quarterly, thereafter.

Sample results indicated various Poly-Aromatic Hydrocarbons (PAHs) were detected within the groundwater. Of those detected the following contaminants exceeded groundwater clean-up criteria. These compounds are as follows:

Summary of Maximum Detection in Site 1140-NW Groundwater Samples

PAH	1140-MW3-01 10/99; 05/00;06/00	1140-MW6-01 10/99; 05/00;06/00	1140-MW8-01 10/99; 05/00;06/00	1140-MW9-01 10/99; 05/00;06/00
1-Methylnaphthalene (µg/L)	190; 240; 300	210; NS; NS	ND; 33; 29	ND
2-Methylnaphthalene (µg/L)	130;110; 190	140; NS; NS	ND; 25; ND	ND
Naphthalene (µg/L)	66; 44; 64	72; NS; NS	ND; 37/24	ND

NS – Not sampled

ND – Not detected above clean-up criteria

Note: Only those samples that have exceeded the clean-up goals have been included.

4.0 SCOPE OF WORK

The following is a list of activities that are covered in this HASP for the CTO 0106 Supplemental Site Assessment at OLF Bronson:

- Mobilization/demobilization
- Soil boring activities (Direct Push Technology [DPT])
- Multi-media sampling, including:
 - Soil
 - Groundwater
 - Investigative-Derived Waste (IDW)
- Decontamination of sampling and heavy equipment
- IDW management
- Geographical Surveying

The above listing represents a summarization of the tasks as they may apply to the scope and application of this HASP. For more detailed description of the associated tasks, refer to the Sampling and Analysis Plan (SAP). Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. The TOM or a designated representative will submit all requested modifications to this document to the HSM.

5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION

Table 5-1 of this section serves as the primary portion of the site-specific HASP and identifies the tasks that are to be performed as part of the scope of work. This table will be modified and incorporated into this document as new or additional tasks are performed at the site. The anticipated hazards, recommended control measures, air-monitoring recommendations, required Personal Protective Equipment (PPE), and decontamination measures for each site task are discussed in detail. This table and the associated control measures shall be changed, if the scope of work, contaminants of concern, or other conditions change.

The FOL/SSO will utilize this table as the primary reference for completion of the task-specific Safe Work Permits. The Safe Work Permit is the primary tool for accomplishing safety and health reviews with field personnel prior to the initiation of any tasks. These permits are to be completed by the FOL/SSO and reviewed with all field personnel at the beginning of each day's activities.

5.1 GENERAL SAFE WORK PRACTICES

In addition to the task-specific work practices identified on Table 5-1, the following general safe work practices (SWP) are to be employed when conducting work on-site. These SWPs establish a pattern of general precautions and measures for reducing risks associated with hazardous site operations. This list is not inclusive and may be amended as necessary.

- Do not eat, drink, chew gum or tobacco, take medication, or smoke in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.
- Avoid contact with potentially contaminated substances. Do not walk through puddles, pools, mud, or other such areas. Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment. Do not place monitoring equipment on potentially contaminated surfaces.
- Be familiar with, knowledgeable of, and adhere to all instructions in the site-specific HASP.
- Be aware of the location of the nearest telephone and all emergency telephone numbers. See Section 2.0, Table 2-1.

- Attend briefings on anticipated hazards, equipment requirements, SWPs, emergency procedures, and communication methods before going on site.
- Plan and delineate entrance, exit, and emergency escape routes. See Section 2.0.
- Rehearse unfamiliar operations prior to implementation.
- Use the “buddy system” whenever respiratory protection equipment is in use. Buddies should establish hand signals or other means of emergency communication in case radios break down or are unavailable.
- Buddies should maintain visual contact with each other and with other on-site team members by remaining in close proximity to assist each other in case of emergency.
- Establish appropriate Safety Zones including Support, Contamination Reduction, and Exclusion Zones.
- Minimize the number of personnel and equipment in contaminated areas (such as the Exclusion Zone). Non-essential vehicles and equipment should remain within the Support Zone.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report all injuries, illnesses, and unsafe conditions, practices, and equipment to the Site Safety Officer (SSO).
- Matches and lighters are restricted from entering in the Exclusion Zone or Contamination Reduction Zone.
- Observe coworkers for signs of toxic exposure and heat or cold stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

5.2 DIRECT PUSH TECHNOLOGIES SAFE WORK PRACTICES

The following Safe Work Practices are to be followed when working in or around Direct Push Rig Operations.

5.2.1 Before Drilling

- Identify all underground utilities and buried structures before drilling. Use the Utility Locating and Excavation Clearance Standard Operating Procedure provided in Attachment II.
- All direct push rigs will be inspected by a Competent Person (the SSO or designee), prior to the acceptance of the equipment at the site and prior to the use of the equipment. All repairs or deficiencies identified will be corrected prior to use. The inspection will be accomplished using the Equipment Inspection Checklist provided in Attachment III. Inspection frequencies will be once every 10-day shift or following repairs.
- The work area around the point of operation will be graded to the extent possible to remove any trip hazards near or surrounding rotating or percussion equipment.
- The drillers helper will establish an equipment staging and lay-down plan. The purpose of this is to keep the work area clear of clutter and slips, trips, and fall hazards. Mechanisms to secure heavy objects such as Macro-Core Samplers and drive rods will be provided to avoid the collapse stacked equipment.
- All potentially contaminated tooling will be wrapped in polyethylene sheeting for storage and transport to the centrally located decontamination unit.

5.2.2 During Drilling

- Secure frayed or loose clothing, hair, and jewelry when working with rotating equipment.
- Minimize contact to the extent possible with contaminated tooling and environmental media.
- Support functions (sampling and screening stations) will be maintained a minimum distance from the direct push rig of the height of the mast plus five feet or 25-feet, whichever is greater, to remove personnel involved in these activities from within physical hazard boundaries.
- Only qualified operators and knowledgeable ground crew personnel will participate in the operation of the direct push rig.
- In order to minimize contact with potentially contaminated tooling and media and to minimize lifting hazards, multiple personnel should move heavy tooling, as applicable and necessary.

- Only personnel absolutely essential to the work activity will be allowed in the exclusion zone. Site visitors will be escorted at all times.

5.2.3 After Drilling

- All equipment used within the exclusion zone will undergo a complete decontamination and evaluation by the SSO to determined cleanliness prior to moving to the next location, exiting the site, or prior to down time for maintenance.
- All motorized equipment will be fueled prior to the commencement of the days activities. During fueling operations all equipment will be shutdown and bonded to the fuel provider.
- When not in use all direct push rigs will be shutdown, emergency brakes set, and wheels chocked.
- All areas subjected to subsurface investigative methods will be restored to equal or better condition than original to remove any contamination brought to the surface and to remove any physical hazards. In situations where these hazards cannot be removed these areas will be barricaded to minimize the impact on field crews working in the area.

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6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical, physical, and natural hazards associated with the sites to be investigated and the activities that are to be conducted as part of the scope of work. Table 6-1, which is included as part of this HASP, provides various information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data. Section 6.1 provides general information regarding predominant contaminants that may be present at the site.

6.1 CHEMICAL HAZARDS

The potential health hazards associated with work to be conducted at OLF Bronson include inhalation, ingestion, and dermal contact of various contaminants that may be present in shallow and deep soils and groundwater. Based on the site histories and prior sampling efforts, the types of contaminants anticipated include petroleum products and associated compounds. The following have been identified as the primary classes of these contaminants, including the specific compound(s) of interest:

- Polynuclear Aromatic Hydrocarbons (PAH's) including
 - Anthracene
 - Fluorene
 - 1-Methylnaphthalene
 - 2-Methylnaphthalene
 - Naphthalene

Of these components 1-methylnaphthalene and 2-methylnaphthalene appear in the greatest concentration. It should be noted based on the reported environmental media concentration none of the above reported contaminants present a vapor, gas, or dust inhalation hazard, due to limited source concentrations.

The most significant toxicity aspect of these substances is that they are irritating to the skin and eyes. Again, this is providing these contaminants exists in sufficient concentrations and remain at the site for a sufficient period of time.

Table 6-1 provides information on the compounds and individual substances likely to be present at the sites to be investigated. Included is information on the toxicological, chemical, and physical properties of these substances. It is anticipated that the greatest potential for exposure to site contaminants is during intrusive activities (drilling, soil sampling, etc.). Exposure to these compounds is most likely to occur through ingestion and inhalation of contaminated soil or water, or hand-to-mouth contact during soil disturbance activities. For this reason, PPE and basic hygiene practices (washing face and hands before

leaving site) will be extremely important. Inhalation exposure will be avoided by using appropriate PPE and engineering controls where necessary. Significant exposure via inhalation is not anticipated during the planned scope of work.

6.2 PHYSICAL HAZARDS

In addition to the chemical hazards discussed above, the following physical hazards may be present during the performance of the site activities.

- Slips, trips, and falls
- Lifting (strain/muscle pulls)
- Noise in excess of 85 decibels (dBA)
- Heavy equipment hazards (pinch/compression points, rotating equipment, etc.).
- Energized systems (contact with underground or overhead utilities)
- Heat/Cold Stress (Ambient temperature extremes)

These physical hazards are discussed in Table 5-1 as applicable to each site task. Further, many of these hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Specific discussions on some of these hazards are presented below.

6.2.1 Slip, Trip and Fall Hazards

Various potential slip, trip and fall hazards may be encountered during the performance of planned site activities. These hazards are associated with working out doors where uneven or wet terrain may be encountered, or near the edge of bodies of water. To minimize the potential for worker injury from these hazards, the following requirements must be observed:

- Maintain proper housekeeping in all work areas.
- Preview and inspect work areas to identify and eliminate slip, trip, or fall hazards. In outdoor locations, pay particular attention to sink holes or other depressions that may be encountered.
- Any work that is to be done on structures that are more than 6-feet above floor or ground level will require fall protection training and the use of 100% fall protection equipment.

- Cover, guard, barricade, and or place warning Postings over/at holes or openings that personnel may fall into or step into.
- The safest approach to sample points will be identified and cleared to permit field crew access to sample locations.
- Establish anchor points and rope handrails for traversing/ascending/descending angles and slopes greater than 45% grade.
- Footwear with an adequate traction.
- Prepare work areas by removing tripping hazards (ruts, roots, debris). This is especially critical around rotating equipment, where a fall into the rotating apparatus could be life threatening.

6.2.2 Strains/Muscle Pulls

Worker injuries resulting from improper manual material handling activities are easily prevented through observation of proper lifting and carrying methods. These types of injuries are not limited to merely the factor of the weight of the load. Other considerations include how many lifts will be involved (i.e., repetitive lifting of even small loads), the size, shape, and/or configuration of the load to be lifted, and whether or not the load will need to be lifted to another height or carried to another location. All workers involved with these types of activities are to be instructed by the SSO in the following manner:

- First estimate the weight and configuration of the load (i.e., is it bulky or hard to safely grasp/lift/control). If it appears to be too heavy or bulky to safely handle alone, either use a mechanical lifting device or obtain help from another employee to lift the load (Note: The use of mechanical lifting devices is **always** preferable over manual lifting).
- Bend at the knees (not at the waist) when attempting a lift.
- Ensure that a firm hold is obtained, and keep the load as close to the body as possible.
- Lift the load using your legs, and not the back.
- Avoid turning or twisting while holding a load.

- If the load is to be moved, preview the path of travel first to identify and eliminate any tripping hazards.
- Do not attempt to carry loads that obstruct the line of sight.
- When setting a load down, again use the leg muscles and do not bend at the waist.

6.2.3 Noise in Excess of 85 dBA

Worker exposure to noise that can approach hazardous levels is a common potential hazard on most project work sites. All workers who must work in areas or who must perform operations where noise levels can approach an 8-hour time weighted average of 85 decibels on the A-weighted scale (dBA) must have received hearing conservation training within the past 12 month period, or will be provided such training by the SSO at the project site prior to participating in high noise level activities. On this project, high noise levels may be encountered when working near the drill rig, or possibly during excavation activities, and during decontamination operations.

As a general rule-of-thumb to prevent worker exposure to high noise levels, workers will be informed to observe the following:

If ambient noise levels are loud enough that they have to raise their voice in order to communicate with another person who is less than 2 feet away, hearing protection will be required. Also, if any existing base operations are posted as high noise areas or that hearing protection is required in that area, then that protection will be used.

6.2.4 Exposure to Pinch or Compression Points and/or Entanglement or Contact With Moving or Rotating Equipment/Machinery

Moving and operating machinery present potential hazards of entanglement, caught in or between, and/or to be struck by machines or machine parts. To minimize these risks, all equipment that is to be operated must first be closely inspected to ensure that adequate machine guarding is in place. No maintenance or other activities is to be performed on operating machines. Also, employees whose duties places them in proximity to moving machinery items are to avoid wearing jewelry, or have long (unrestricted) hair, or loose fitting clothing.

Also, the use of home-made or jury-rigged machine parts is strictly prohibited. All equipment parts must be manufacturer provided or approved.

6.2.5 Contact with Energized Sources, Including Operating Processes and Utilities (Aboveground And Underground)

Contact with energized sources can result in severe injury and even death. There are two areas of concern with this potential hazard: contact with energized processing equipment (either existing or that installed by Tetra Tech field personnel), and; contact with energized utilities including underground utilities (including electrical transmission lines, gas lines, water lines, etc.) and overhead utilities (i.e., power lines).

To protect against the first concern, contact with energized processing equipment, any work on or near these types of items will be required to follow the Company Safe Work Practice on the Control of Hazardous Energy Sources (Lockout/Tag out), SWP number 6-2. This is not included in this HASP, however, should the need arise, it is available to all employees on the intranet at

http://go2.tetrattech.com/Emp_docs/hs/vol3/swp6-02_Control_of_Hazardous_Energy_Sources.doc.

Regarding protection from contacting underground or overhead utilities, the procedures and restrictions of the company SOP on Utility Location and Excavation Clearance (see Attachment II) is to be followed during site operations. This SOP addresses both underground and overhead utilities. This SOP is also available to all employees on the intranet at http://webmail.nus.tetrattech.com/_private/_sop/HS-1.0.pdf.

6.2.6 Heat/Cold Stress

Given the geographic location of the site, overexposure to ambient temperature extremes (heat/cold stress) may exist during performance of this work depending on the project schedule. Work performed when ambient temperatures exceed 70°F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additionally, work load and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration. Fatal exposures to cold stress may also result from accidental exposures to low ambient temperatures as well as immersion

into low temperature waters. Pain in the extremities and shivering are first signs of the potential on-set of cold stress. Adequate insulating layers of dry clothing, wind breaks where possible, and work-warm regimen to control the deleterious effects of cold stress.

Each of these physical hazards are discussed in greater detail in Section 4.0 of the TtNUS Health and Safety Guidance Manual. Additionally, information on the associated control measures for these hazards are discussed in Table 5-1 of this HASP.

6.3 NATURAL HAZARDS

As most of the work to be conducted will occur in areas that are not improved or maintained, natural hazards and inclement weather may exist.

Insect/animal bites and stings, poisonous plants, and inclement weather are natural hazards that may be present given the location of activities to be conducted. In general, avoidance of areas of known infestation or growth will be the preferred exposure control for insects/animals and poisonous plants. Specific discussion on principle hazards of concern follows:

6.3.1 Insect Bites and Stings

Insect/animal bites and stings are difficult to control given the climate and environmental setting of OLF Bronson. However, in an effort to minimize this hazard the following control measures will be implemented where possible.

- Commercially available bug sprays and repellents will be used whenever possible – Pesticides analytical screening includes chlordane, endrin, lindane, methoxychlor, toxaphene and heptachlor. Commercially available repellants may be used providing they don't contain substances which appear on the analytical list for pesticide analysis. Products such as DEET should not be applied directly to the skin due to potential irritation. This product, when permitted for use, should be applied over clothing articles.
- Where possible, loose-fitting and light-colored clothing with long sleeves should be worn. This will also aid in insect control by providing a barrier between the field person and the insects and to provide easy recognition of crawling insects against the lighter background. Pant legs should be secured to the work-boots using duct tape to prevent access by ticks. Mosquito nets are also recommended for use when commercially available repellents are not permitted.

- Clothing/limited body checks for ticks and other crawling insects should be conducted upon exiting heavily vegetated areas. Workers should perform a more detailed check of themselves when showering in the evening. Ticks prefer moist areas of the body (arm-pits, genitals, etc.) and will migrate to those locations.
- The FOL/SSO will preview all access routes and work areas in an effort to identify physical hazards including nesting areas in and around the work sites. These areas will be flagged and communicated to all site personnel.
- The FOL/SSO must determine if site personnel (through completion of Medical Data Sheets), suffer allergic reactions to bee and other insect stings and bites. Field crew members who are allergic to bites should have their emergency kit containing antihistamine and a preloaded syringe of epinephrine readily available.

Any allergies (insect bites, bee stings, etc.) must be reported on the Medical Data Sheet and to the SSO.

6.3.1.1 Tick and Mosquito Transmitted Illnesses And Diseases

Ticks and mosquitoes have been identified in the transmission of diseases including Lyme's disease and malaria. Warm months (Spring through early Fall) are the most predominant time for this hazard. Information concerning Lyme's Disease including recognition, evaluation, tick removal, and control is provided in Section 4.0 of the Health and Safety Guidance Manual.

Malaria may occur when a mosquito or other infected insect sucks blood from an infected person, and the insect becomes the carrier to infect other hosts. The parasite reproduces within the mosquito, and is then passed on to another person through the biting action. Acute symptoms include chills accompanied by fever and general flu like symptoms. This generally terminates in a sweating stage. These symptoms may recur every 48 to 72 hours.

6.3.1.2 Fire Ants

Fire ants present a unique situation when working outdoors in Florida. Their aggressive behavior and their ability to sting repeatedly can pose a unique health threat. The sting injects venom that causes an extreme burning sensation. Pustules form which can become infected if scratched. Allergic reactions of people sensitive to the venom include dizziness, swelling, shock and in extreme cases unconsciousness and death. People exhibiting such symptoms should see a physician. Fire ants can be identified by their

habitat. They build mounds in open sunny areas sometimes supported by a wall or shrub. The mound has no external opening. The size of the mound can range from a few inches across to some which are in excess of two feet or more in height and diameter. When disturbed they defend it by swarming out and over the mound, even running up grass blades and sticks.

6.3.2 Snakes and Other Wild Animals

Indigenous animals including snakes (poisonous and non-poisonous varieties), raccoons, and other animals native to the region may be present at the site. These animals may be encountered if work locations encroach on nesting or territories claimed by these animals.

To avoid the obvious hazards conveyed as part of a direct encounter, the following actions will be taken to minimize impact on the field crews and/or operations. The FOL/SSO will preview access routes and work locations for nesting areas or signs of animal activities (tracks, foraging areas, etc.). All identified suspect areas will be communicated to the field crews. Snake chaps will be required as a precaution.

6.3.2.1 Snake Bites

All initial efforts will be directed to avoid, where possible, nesting and territorial areas. However, should field personnel come in contact with these animals and receive a bite, the following actions are necessary.

- Obtain a detailed description of the snake. This and the bite mark will enable medical personnel administering medical aid to provide prompt and correct antidotes, as necessary.
- Immobilize the bite victim to the extent possible. Physical exertion will mobilize the toxins (if poisonous varieties) from the bite point systemically through the body.
- Apply a pressure wrap (for extremities), just above and over the bite area. With a couple wraps of the pressure wrap in place over the bite area, apply a splint, and continue the application of the pressure wrap. The purpose for the splint is to restrict the movement of the extremity, this along with the pressure wrap will aid in restricting the toxins from leaving the site of the bite.
- Seek medical attention immediately.

6.3.3 Poisonous Plants

Various plants which can cause allergic reactions may be encountered during field work. These include, poison ivy, poison oak, and poison sumac. Contact with these plants may occur when clearing vegetation for access to work areas, or as a result of movement through these plants. An irritating, allergic reaction can occur after direct contact with the plant or indirect contact through some piece of equipment or clothing article. Oils are transferred from the plant to exposed skin, clothing, or piece of equipment. The degree of the irritating, allergic reaction can vary significantly from one person to the next.

Protective measures to control and minimize the effects of this hazard may include, but not be limited to, the following:

- Identify plants for field personnel.
 - Poison Ivy - Characterized by climbing vines, three leaf configuration ovate to elliptical in shape, deep green leaves with a reddish tint, greenish flowers, and white berries.
 - Poison Sumac - Characterized as a tall bush of the sumac family bearing compound leaves (7-13 entire leaflets), branched from a central axis, drooping, with axillary clusters of white fruit: However, these white fruits and berries may exist only during pubescent stages.
 - Poison oak - Characterized as similar to poison ivy consisting of a shrub, stems erect, 0.3 to 2.0 meters tall, leaflets consist of broad thick lobes coarsely serrated configuration, denser at the base, less so than the top.
- Protective measures may include wearing disposable garments such as Tyvek when clearing brush. These may be carefully removed and disposed of along with any oils accumulated from the plants.
- Personal Hygiene - The oils obtained from the plants will only elicit an allergic response when the person's bare skin layer is contacted. This can be aggravated when skin pores are open (perspiring), or through breaks in the skin such as cuts, nicks, scratches, etc. This can also be accomplished when using excessively hot water for cleaning the skin, which also causes pores to open. Prior to break time, lunchtime, etc. personnel should wash with cool water and soap to remove as much of the oils as possible. In heavily vegetated areas of these plants, additional measures including barrier creams and blocks may be used to prevent the oils from accessing and penetrating the skin.

All of these plants present an airborne sensitization hazard when burned. This is not to occur as part of this scope of work and therefore will not be addressed.

6.3.4 Inclement Weather

Project tasks under this Scope of Work will be performed outdoors and near water. As a result, inclement weather may be encountered. In the event that adverse weather conditions arise (electrical storms, hurricanes, etc.), the FOL and/or the SSO will be responsible for temporarily suspending or terminating activities until hazardous conditions no longer exist.

6.4 WATER HAZARDS

Given the location of this project the potential for working near water exists. To prevent accidents that could occur associated with working near water the following provisions shall apply.

On a Boat

All personnel shall wear Type III personal flotation devices in the event someone falls overboard, boats sink or capsizes. Type IIIs were selected as they offer the most flexibility for working while still meeting minimum requirements for buoyancy. In situations where personal flotation devices cannot be worn due to the task to be conducted, the flotation devices shall be immediately available/accessible. It is recommended that personal flotation devices be worn at all times during colder months due to the potential for hypothermia to restrict muscle movement and therefore, self rescue and maintaining buoyancy.

In addition, a single Type IV Throwable Flotation Device shall be maintained on board the boat with at least 90 feet of 3/8 polypropylene line.

Near Waters Edge

When work activities take personnel within four feet of navigable waters edge personnel will have immediately accessible a lifeline with a throwing bag or Type IV flotation device facilitate extraction from the water. All personnel working on waters edge will do so using the buddy system to assist in rescue efforts, if needed.

7.0 AIR MONITORING

Direct reading instruments will be used as a general screening device at the site to detect and evaluate the presence of site contaminants and other potentially hazardous conditions.

This section provides direction and protocol for the real time monitoring. The monitoring of hazardous conditions has two primary objectives.

- Qualify and quantify potential hazards (chemical, physical, and biological) that, may impact the work force or sensitive receptors in the immediate area.
- Evaluate environmental sampling media, which will be sent off-site.

7.1 TASKS TO BE CONDUCTED

The following tasks are to be conducted as part of the scope of work at OLF Bronson. It is hazards associated with these tasks, which may be monitored for the purpose of quantification/ qualification of those hazards.

- Direct Push Technologies (DPT)
- Multi-media Sampling – Surface and subsurface soils; groundwater
- Decontamination activities
- Geophysical and Geographical surveying

7.2 ASSOCIATED HAZARDS

Hazards associated with these tasks for which monitoring may be used to qualify/quantify, include, but not limited to:

- Noise – Information obtained from previous monitoring efforts indicate noise levels associated with this type of activity, dependent on the type of rig.
 - DPT range from 90 to 102 dBA-TWA

- Generators – When generators are used as portable power sources for well development or sampling, the generator should be placed a sufficient distance from the operation to eliminate the noise hazard. The generators emit approximately 82 to 88 dBA.

- Steam Cleaners and pressure washers – Previous data indicate that these machines emit from 94 to 102 dBA.

The decision to proceed with noise monitoring will be at the discretion of the PHSO and the SSO. This decision will be based on the necessity to quantify noise levels associated with a particular type of rig selected to perform the subsurface investigation. In addition noise quantification may be performed to insure the hearing protection devices selected attenuation capabilities are sufficient for those noise levels produced, if noise levels are excessive. All noise monitoring will proceed in accordance with the Hearing Conservation Program provided in Attachment VI.

- Chemical hazards (Contaminated environmental media exposure) – Historical information regarding groundwater contamination has been gathered and the maximum positive detection's have been identified. This information has been used to determine potential worker exposure during tasks such as soil boring and groundwater sampling. Under current considerations, it is not anticipated that these contaminants will present a significant exposure threat. The contaminants in question represent maximum detected concentrations and are considered worst case scenario. The contaminants in question are not readily detected and in some cases, and not detected at all in other cases, such as the case with 2-methylnaphthalene. Typical relative response ratio/correction factors for naphthalenic distillates average at approximately 40%. Therefore, given the concentrations available, the media in which they exist, and the instrument sensitivity to the compounds in question, the use of real-time monitoring instrumentation outside of general screening is not practical. It is recommended that the instruments still be used as a general screen for possible pockets of contamination that may exist at higher concentrations and are more readily detectable. As a result, specific air monitoring measures and requirements are established in Table 5-1 pertaining to the specific hazards and tasks of an identified operation. Additionally, the Health and Safety Guidance Manual, Section 1.0, contains detailed information regarding direct reading instrumentation, as well as general calibration procedures of various instruments.

7.3 INSTRUMENTS TO BE USED FOR HAZARD MONITORING

The following instrument will be used for monitoring the hazards identified above.

7.3.1 Metrosonics dB-307 Noise Dosimeter/or Equivalent

The db-307 is a dual purpose sound level meter and noise dosimeter. The instrument is calibrated in accordance with manufacturers instructions using a 102dBA acoustical calibrator. The instrument is calibrated pre- and post to monitoring activities in accordance with the Hearing Conservation program provided in Attachment VI of this HASP. Information regarding calibration is recorded either on the Noise Dosimetry Log or the Sound Level Measurement Log, relative to the type of monitoring being performed.

7.3.2 Chemical Contaminant Monitoring

Monitoring for airborne chemical contaminants released from environmental media will be performed during the following intrusive activities:

- Soil boring

Chemical air monitoring will be performed by the SSO using a photo-ionization detector (PID) as a primary screening instrument. Instruments will be used primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. Action levels are discussed in Table 5-1 as they may apply to a specific task or location. As was indicated earlier, the relative response ratio/correction factor for the compounds in question that can be detected is approximately 40%. Therefore, results obtained on these instruments should be multiplied by 0.4 to obtain actual values. For example:

10 ppm (instrument reading) x 0.4 (correction factor) = 4.0 ppm (adjusted value)

Note: Caution should be used when employing correction factors regarding the accuracy. A plus/minus of 25% should be incorporated as a buffer to the conservative.

Prior to the commencement of any field activities, the background levels of the site must be determined and noted. Daily background readings will be taken away from any areas of potential contamination. These readings, any influencing conditions (i.e., weather, temperature, humidity) and site location must be documented in the field operations logbook or other site documentation (e.g., sample log sheet).

7.4 INSTRUMENT MAINTENANCE AND CALIBRATION

Hazard monitoring instruments will be maintained and pre-field calibrated by the TtNUS Equipment Manager. Operational checks and field calibration will be performed on all instruments each day prior to their use. Field calibration will be performed on instruments according to manufacturer's recommendations (for example, the PID must be field calibrated daily and an additional field calibration

must be performed at the end of each day to determine any significant instrument drift). These operational checks and calibration efforts will be performed in a manner that complies with the employees health and safety training, the manufacturer's recommendations, and with the applicable manufacturer standard operating procedure (copies of which can be found in the Health & Safety Guidance Manual which will be maintained on site for reference). All calibration efforts must be documented. Figure 7-1 is provided for documenting these calibration efforts. This information may instead be recorded in a field operations logbook, provided that all of the information specified in Figure 7-1 is recorded. This required information includes the following:

- Date calibration was performed
- Individual calibrating the instrument
- Instrument name, model, and serial number
- Any relevant instrument settings and resultant readings (before and after) calibration
- Identification of the calibration standard (lot no., source concentration, supplier)
- Any relevant comments or remarks

8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS

8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING

This section is included to specify health and safety training and medical surveillance requirements for both TtNUS and subcontractor personnel participating in site activities.

8.1.1 Requirements for TtNUS Personnel

All TtNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at the OLF Bronson facility. Additionally, TtNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training in the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120 (e)(4) will be required for site supervisory personnel.

Documentation of TtNUS introductory, supervisory, and refresher training as well as site-specific training will be maintained at the project. Copies of certificates or other official documentation will be used to fulfill this requirement.

8.1.2 Requirements for Subcontractors

All TtNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120 (e). Additionally, personnel who have had the introductory training more than 12 months ago, are required to have 8 hours of refresher training meeting the requirements of 29 CFR 1910.120 (e)(8) prior to performing field work at the OLF Bronson facility if required. TtNUS subcontractors must certify that each employee has had such training by sending TtNUS a letter, on company letterhead, containing the information in the example letter provided as in Figure 8-1 and by providing copies of certificates for all subcontractor personnel participating in site activities.

**FIGURE 8-1
TRAINING LETTER**

The following statements must be typed on company letterhead and signed by an officer of the company and accompanied by copies of personnel training certificates:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Gerry Walker
Tetra Tech NUS, Inc.
Task Order Manager
1401 Oven Park Drive, Suite 102
Tallahassee, Florida, 32312

Subject: HAZWOPER Training for OLF Bronson, Pensacola, Florida

Dear Mr. Walker:

As an officer of XYZ Corporation, I hereby state that I am aware of the potential hazardous nature of the subject project. I also understand that it is our responsibility to comply with all applicable occupational safety and health regulations, including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 1926.

I also understand that Title 29 CFR 1910.120, entitled "Hazardous Waste Operations and Emergency Response," requires appropriate level of training for certain employees engaged in hazardous waste operations. In this regard, I hereby state that the following employees have had 40 hours of introductory hazardous waste site training or equivalent work experience as requested by 29 CFR 1910.120(e) and have had 8 hour of refresher training as applicable and as required by 29 CFR 1910.120(e)(8) and that site supervisory personnel have had training in accordance with 29 CFR 1910.120(e)(4).

LIST FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555

Sincerely,

(Name and Title of Company Officer)

Enclosed: Training Certificates

8.2 SITE-SPECIFIC TRAINING

TtNUS will provide site-specific training to all TtNUS employees and subcontractor personnel who will perform work on this project. Site-specific training will also be provided to all personnel (U.S. Department of Defense, EPA, etc.) who may enter the site to perform functions that may or may not be directly related to site operations. Site-Specific training will include:

- Names of designated personnel and alternates responsible for site safety and health
- Safety, health, and other hazards present on site
- Use of personal protective equipment
- Safe use of engineering controls and equipment
- Medical surveillance requirements
- Signs and symptoms of overexposure
- Contents of the Health and Safety Plan
- Emergency response procedures (evacuation and assembly points)
- Initial response procedures
- Review of the contents of relevant Material Safety Data Sheets
- Review of the use of Safe Work Permits

Site-specific documentation will be established through the use of Figure 8-2. All site personnel and visitors must sign this document upon receiving site-specific training.

8.3 MEDICAL SURVEILLANCE

8.3.1 Medical Surveillance Requirements for TtNUS Personnel

All TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS's medical surveillance program and will be medically qualified to perform hazardous waste site work using respiratory protection.

Documentation for medical clearances will be maintained in the TtNUS Tallahassee office and made available, as necessary.

8.3.2 Medical Surveillance Requirements for Subcontractors

Subcontractors are required to obtain a certificate of their ability to perform hazardous waste site work and to wear respiratory protection. The "Subcontractor Medical Approval Form" provided in Figure 8-3 shall be used to satisfy this requirement, providing it is properly completed and signed by a licensed physician.

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute "Subcontractor Medical Approval Form" (See Figure 8-3) with a letter, on company letterhead, containing all of the information in the example letter presented in Figure 8-4 of this HASP.

8.3.3 Requirements for All Field Personnel

Each field team member (including subcontractors) and visitors entering the Exclusion Zone(s) shall be required to complete and submit a copy of Medical Data Sheet found in the TtNUS Health and Safety Guidance Manual. This shall be provided to the SSO, prior to participating in site activities. The purpose of this document is to provide site personnel and emergency responders with additional information that may be necessary in order to administer medical attention.

8.4 SUBCONTRACTOR EXCEPTIONS

Subcontractors who will not enter the Exclusion Zone during operation, and whose activities involve no potential for exposure to site contaminants, will not be required to meet the requirements for training/medical surveillance other than site-specific training as stipulated in Section 8.2. This exception may only be granted by the CLEAN Health and Safety Manager, Matt Soltis.

FIGURE 8-3

SUBCONTRACTOR MEDICAL APPROVAL FORM

For employees of _____
Company Name

Participant Name: _____ Date of Exam: _____

Part A

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f) and found to be medically -

- qualified to perform work at the OLF Bronson, work site
- not qualified to perform work at the OLF Bronson, work site

and,

2. Undergone a physical examination as per OSHA 29 CFR 1910.134(b)(10) and found to be medically -

- qualified to wear respiratory protection
- not qualified to wear respiratory protection

My evaluation has been based on the following information, as provided to me by the employer.

- A copy of OSHA Standard 29 CFR 1910.120 and appendices.
- A description of the employee's duties as they relate to the employee's exposures.
- A list of known/suspected contaminants and their concentrations (if known).
- A description of any personal protective equipment used or to be used.
- Information from previous medical examinations of the employee which is not readily available to the examining physician.

Part B

I, _____, have examined _____
Physician's Name (print) Participant's Name (print)
and have determined the following information:

**FIGURE 8-3
SUBCONTRACTOR MEDICAL APPROVAL FORM
PAGE TWO**

1. Results of the medical examination and tests (excluding finding or diagnoses unrelated to occupational exposure):

2. Any detected medical conditions which would place the employee at increased risk of material impairment of the employee's health:

3. Recommended limitations upon the employee's assigned work:

I have informed this participant of the results of this medical examination and any medical conditions which require further examination or treatment.

Based on the information provided to me, and in view of the activities and hazard potentials involved at the OLF Bronson work site, this participant

- may
 may not

perform his/her assigned task.

Physician's Signature _____

Address _____

Phone Number _____

NOTE: Copies of test results are maintained and available at:

Address

FIGURE 8-4
MEDICAL SURVEILLANCE LETTER

The following statements must be typed on company letterhead and signed by an officer of the company:

LOGO
XYZ CORPORATION
555 E. 5th Street
Nowheresville, Kansas 55555

Month, day, year

Mr. Gerry Walker
Tetra Tech NUS, Inc.
Task Order Manager
1401 Oven Park Drive, Suite 102
Tallahassee, Florida, 32312

Subject: Medical Clearance for Personnel Engaged in On-site activities at OLF Bronson, Pensacola, Florida

Dear Mr. Walker:

As an officer of XYZ Corporation, I hereby state that the persons listed below participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR) Part 1910.120, entitled "Hazardous Waste Operations and Emergency Response. I further state that the persons listed below have had physical examinations under this program within the past 12 months and that they have been cleared, by a license physician, to perform hazardous waste site work and to wear positive- and negative-pressure respiratory protection. I also state that, to my knowledge, no person listed below has any medical restriction that would preclude him/her from working at the OLF Bronson facility.

LIST OF FULL NAMES OF EMPLOYEES AND THEIR SOCIAL SECURITY NUMBERS HERE.

Should you have any questions, please contact me at (555) 555-5555

Sincerely,

(Name and Title of Company Officer)

9.0 SITE CONTROL

This section outlines the means by which TtNUS will delineate work zones and use these work zones in conjunction with decontamination procedures to prevent the spread of contaminants into previously unaffected areas of the site. It is anticipated that a three-zone approach will be used during work at this site: Exclusion Zone, Contamination Reduction Zone, and Support Zone. It is also anticipated that this control measure will be used to control access to site work areas. Use of such controls will restrict the general public, minimize potentials for the spread of contaminants and to protect individuals who are not cleared to enter the work areas.

9.1 EXCLUSION ZONE

The Exclusion Zone will be considered those areas of the site of known or suspected contamination. It is not anticipated that significant amounts of surface contamination are in the proposed work areas of this site. It is anticipated that this will remain so until/unless contaminants are brought to the surface by intrusive activities such as direct push operations. Furthermore, once such activities have been completed and surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the Contamination Reduction Zone. Therefore, the Exclusion Zones for this project will be limited to those areas if the site where active work is being performed plus so many feet surrounding the point of operation. All Exclusion Zones will be delineated using barrier tape, cones and /or drive poles, and postings to inform and direct facility personnel.

9.1.1 Exclusion Zone Clearance

Exclusion zone boundaries are as follows:

Direct push operations – The height of the fully extended mast plus five feet or 25 feet, whichever is greater. This boundary demarcation has been selected based on removal of personnel from hazards associated with this operation. In this case our primary concern is physical hazards pressurized lines and systems and noise. By establishing the line at least at 25 feet will provide a sufficient distance for protection from flying projectiles associated with pressurized systems as well as providing sufficient distance impacting noise intensity.

Groundwater sampling – 10-feet surrounding the well and discharge receptacle container.

9.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone will be split to represent two separate functions. The first function will be a control/supply point for supporting exclusion zone activities. The second function, which may take place a sufficient distance from the exclusion zone, is the decontamination of personnel and heavy equipment.

In order to move from the exclusion zone to a separate location the following activities will be used:

- As samplers move from location to location during sampling activities, dedicated sampling devices and PPE will be removed, separated, and bagged. Personnel will use hygienic wipes, such as Handy Wipes, as necessary to clean hands and face until they can access soap and water.
- Muddy over-boots and gloves may be required to go through a gross contamination wash at the exclusion zone or be bagged until they can be cleaned at a central decontamination location.
- Potentially contaminated tooling will be wrapped, when necessary, for transport to the decontamination area.
- Upon completion of the assigned tasks all personnel will move through the central decontamination area to clean reusable PPE and field equipment.

9.3 SUPPORT ZONE

The Support Zone for this project will include a staging area where site vehicles will be parked, equipment will be unloaded, and where food and drink containers will be maintained. In all cases, the Support Zones will be established at areas of the site where exposure to site contaminants would not be expected during normal working conditions or foreseeable emergencies.

9.4 SAFE WORK PERMITS

All Exclusion Zone work conducted in support of this project will be performed using Safe Work Permits to guide and direct field crews on a task by task basis. An example of the Safe Work Permit to be used is illustrated in Figure 9-1.

Partially completed Permits for the work to be performed are included in Attachment IV. The daily meetings conducted at the site will further support these work permits. This effort will ensure all site-specific considerations and changing conditions are incorporated into the planning effort, as well as give personnel an opportunity to ask questions and make suggestions. All permits will require the signature of the FOL or SSO.

Use of these permits will provide the communication line for reviewing protective measures and hazards associated with each operation. This HASP will be used as the primary reference for selecting levels of protection and control measures. The work permit will take precedence over the HASP when more conservative measures are required based on specific site conditions.

Upon completion of the tasks for which the permit was assigned, the permit shall be turned into the FOL and/or the SSO.

9.5 SITE VISITORS

Site visitors for the purpose of this document are identified as representing the following groups of individuals:

- Personnel invited to observe or participate in operations by TtNUS
- Regulatory personnel (DOD, OSHA, etc.)
- Southern Division Navy Personnel
- Other authorized visitors

It is not anticipated that this operation will result in a large number of site visitors. However, as some visitors can reasonably be expected, the following requirements will be enforced:

- All site visitors will be routed to the FOL, who will sign them in to the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), who they represent, and purpose for the visit.
- All site visitors will be required to produce the necessary information supporting clearance onto the site. This includes information attesting to applicable training (40-hours of HAZWOPER training required for all Southern Division Navy personnel) and medical surveillance, as stipulated in Section 8 of this document. In addition, to enter the site's operational zones during planned activities, all visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this document.

NOTE: All site visitors will be escorted at all times while at the site.

Following this, the site visitor will be permitted to enter the site and applicable operational areas. All visitors are required to observe the protective equipment and site restrictions in effect at the area of their visit. Any and all visitors not meeting the requirements as stipulated in this plan for site clearance will not be permitted to enter the site operational zones during planned activities. Any incidence of unauthorized site visitation will cause all onsite activities to be terminated until that visitor can be removed. Removal of unauthorized visitors will be accomplished with support from the Base Contact, if necessary. At a minimum, the Navy On-site Representative will be notified of any unauthorized visitors.

9.6 SITE SECURITY

Site security will be accomplished using TtNUS field personnel. TtNUS will retain complete control over active operational areas. As this activity takes place at a United States Navy facilities open to public access, and along public highways, the first line of security will take place using traffic permit restrictions, Exclusion Zone barriers, and any existing barriers at the sites to restrict the general public. The second line of security will take place at the work site referring interested parties to the FOL or designee. The FOL will serve as a focal point for all non-project interested parties, and serve as the final line of security and the primary enforcement contact.

9.7 SITE MAP

Once the areas of contamination, access routes, topography, and dispersion routes are determined, a site map will be generated and adjusted as site conditions change. When possible, these maps will be posted to illustrate up-to-date collection of contaminants and adjustment of zones and access points.

9.8 BUDDY SYSTEM

Personnel engaged in on site activities will practice the "buddy system" to ensure the safety of all personnel involved in this operation.

9.9 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS

TtNUS and subcontractor personnel will provide MSDSs for all chemicals brought on site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on site. A chemical inventory of all chemicals used on site will be developed using the Health and Safety Guidance Manual. The MSDSs will then be maintained in a central location (i.e., temporary office) and will be available for anyone to review upon request.

9.10 COMMUNICATION

As personnel will be working in proximity to one another during field activities, a supported means of communication between field crews members will not be necessary. External communication will be accomplished by using the telephones at predetermined and approved locations. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities, the FOL will determine and arrange for telephone communications.

9.11 SANITATION AND BREAK AREAS

This section will address the following items:

- Toilets
- Potable water
- Showers and change rooms
- Break Areas

9.11.1 Toilets

One toilet will be provided for every 20 people. All toilets will be unisex and will have locking doors. The toilet provided will either be a chemical toilet and service provider or the flush toilet readily accessible at a predetermined approved location.

9.11.2 Potable Water

Potable water as well as electrolyte balance sports drinks such as Gatorade will be provided to the field crews for fluid replacement, as it is necessary under conditions of ambient temperature extremes. Storage and dispensing will proceed as follows:

- All containers will be clean and replenished daily.
- All containers will clearly marked as to their contents (Potable Water – Drinking Water Only; Gatorade, etc.).

- Dispensing locations will be placed in identified break areas within the support zone. The most likely location will be a break trailer. This will serve as an area for cooling or warming as well as an identified food and drink consumption area.
- If larger containers are used, dispensing cups will be provided.
- The coolers used for storage of potable drinks and cups will be stored in plastic bags away from potentially contaminating materials when not in use.

Fluid intake recommendations will be made based on the medical evaluations conducted at the end of the decontamination process, as necessary based on ambient conditions.

9.11.3 Showers and Change Rooms

Based on this scope and duration of this project shower facilities and locker rooms will not be provided.

9.11.4 Break Areas

Given the size of the project and nature of the tasks to be conducted structured suitable locations for work breaks and warming/cooling regimens will not be necessary. These activities as necessary can take place at the site vehicles in the support zone.

10.0 SPILL CONTAINMENT PROGRAM

10.1 SCOPE AND APPLICATION

This program applies to the single or aggregate accumulation of bulk storage materials (over 55-gallons). As the classification of certain materials such as waste materials is unknown, all materials will be treated as hazardous, pending laboratory certification to the contrary. The types of materials for which this program will apply are as follows:

- Investigation derived wastes such as decontamination fluids, soil cuttings, purge, wash and well development waters
- Resource Storage – Limited fuel and lubricant storage

The spill containment and control will be engaged any time there is a release of the above-identified materials from a containment system or vessel. This spill containment program will be engaged in order to minimize associated hazards.

While these materials are handled, staged, transferred or transported, this spill containment program will be instituted.

10.2 POTENTIAL SPILL AREAS

Potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Currently, there are several areas vulnerable to this hazard including

- The area used for central staging and decontamination
- Transportation vessels and containers
- Resource Deployment

10.3 CONTAINMENT AREAS

In order to facilitate leak and spill inspection and response, and to minimize potential hazards which may impact the integrity of the storage containers, the staging area for these substances will be structured as follows:

10.3.1 Waste Storage

- 55 Gallon Drums (United Nations 1A2 configurations) – 4 Drums to a Pallet; labels and the retaining ring bolt and nut on the outside of each drum to facilitate easy access; Minimum 4-feet between each row of pallets. The decision to construct a bermed and lined area will be the decision of project management .

The area will be identified as a Satellite Storage Area with proper signage, points of contact in the event of an emergency, alternate contacts, and identification of stored material (i.e, Purge or decontamination waters, soil cuttings, etc.).

An Inventory Log will be maintained by the FOL regarding types of waste materials and estimated volumes generated. An updated Inventory List will be provided by the FOL to the designated Emergency Response Agency or Base Contact during days off and between shifts or phases of operations.

10.3.2 Flammable/POL Storage

Flammable Storage [i.e., fuels, decontamination solvents (Isopropanol)] and Petroleum/oil/lubricants (POL) will require proper dispensing containers and necessary storage for cumulative volumes in excess of 25 gallons. Storage and dispensing will comply with the following requirements:

- All fuels, which will be stored and dispensed from portable containers, will utilize safety cans.
- All portable hand held storage containers will be labeled per Hazard Communication requirements.
- All dispensing locations will be supported by a Fire Extinguisher.

10.4 MATERIALS HANDLING

To minimize the hazards associated with moving drums and containers (i.e, lifting, pinch and compression points) material handling will be supported in the following manner:

- A drum cart with pneumatic tires will be required, if drums are used for waste storage that must be manually moved or positioned. This cart will be used to relocate drums within the staging and satellite storage location.

Other means of material handling are acceptable and may be presented to the SSO for evaluation based on their ability to minimize or eliminate material handling hazards.

10.5 LEAK AND SPILL DETECTION

To establish an early detection of potential spills or leaks, a periodic walk-around by personnel staging or disposing of containers will be conducted at least once each day during working hours, to visually determine that containers are not leaking. Any leaks identified will be collected and contained using absorbents such as Oil-dry, vermiculite, or sand, stored at the staging area in an appropriate replacement vessel or container conspicuously marked. This material too, will be containerized for disposal pending analyses. All inspections will be documented in the Project Logbook.

10.6 PERSONNEL TRAINING AND SPILL PREVENTION

All personnel will be instructed on the procedures for spill prevention, containment, and collection of hazardous materials in the site-specific training. The FOL or SSO will serve as the Spill Response Coordinator for this operation should the need arise.

10.7 SPILL PREVENTION AND CONTAINMENT EQUIPMENT

The following represents the minimum equipment that will be maintained at the staging areas at all times for the purpose of supporting this Spill Containment/Control Plan.

- Sand, clean fill, vermiculite, or other non combustible absorbent (Oil-dry)
- Extra Drums (55-gallon U.N. 1A2) should the need to transfer material from leaking containers arise.
- Pumps (Gas or Electric necessary for transferring liquids from leaking containers)/tubing
- Drum Repair Kit
- Shovels, rakes, and brooms
- Container labels
- Personal Protective Equipment
 - Nitrile outer gloves
 - Splash Shield
 - Impermeable over-boots
 - Rain suit or impermeable apron

10.8 SPILL CONTAINMENT/CONTROL RESPONSE PLAN

This section describes the procedures the Tetra Tech NUS field personnel will employ upon the detection of a spill or leak.

- Notify the SSO or FOL immediately upon detection of a leak or spill.
- The FOL or the SSO shall assess the leak and make a determination as to whether the response measure required is within the capabilities of the field crew or whether it is necessary to notify designated emergency response units.

Within the capabilities of the Field Crew:

- Employ the personal protective equipment stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the container or raising the leak to the highest point in the vessel. Spread the absorbent material in the area of the spill, covering it completely.
- Transfer the material to a new vessel; collect and containerize the absorbent material. Label the new container appropriately. Await analyses for treatment and disposal options.
- Recontainerize spills, including 2-inch of top cover (if over soils) impacted by the spill. Await test results for treatment or disposal options.

Outside of the Capabilities of the Field Crew/Notify Emergency Response Units:

- Activate emergency alerting procedures for that area to remove all non-essential personnel.
- Take defensive measures such as
 - Spread the absorbent material in the area of the spill, covering it completely.
 - Raising the leak to the highest point in the vessel.
- Establish site security, direct emergency crews to the area of the leak.

It is not anticipated that a spill would occur that the field crew cannot handle. Should this occur, notification of the appropriate Emergency Response agencies will be carried out by the FOL or SSO in accordance with the procedures specified in Section 2.0 of this HASP.

11.0 CONFINED-SPACE ENTRY

It is not anticipated, under the proposed scope of work, that confined space and permit-required confined space activities will be conducted. Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter any confined spaces.

A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

A Permit-Required Confined Space is one that:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized, serious, safety or health hazard.

For further information on confined space, consult the Health and Safety Guidance Manual or call the PHSO. If confined space operations are to be performed as part of the scope of work, detailed procedures and training requirements will have to be addressed.

12.0 MATERIALS AND DOCUMENTATION

The TtNUS FOL shall ensure the following materials/documents are taken to the project site and used when required.

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- Material Safety Data Sheets for all chemicals brought on site, including decon solution, fuels, sample preservations, calibration gases, etc.
- A full size OSHA Job Safety and Health Poster
- Training/Medical Surveillance Documentation Form (blank)
- Emergency Reference Form (Section 2.0, extra copy for posting)

12.1 MATERIALS TO BE POSTED OR MAINTAINED AT THE SITE

The following documentation is to be posted or maintained at the site for quick reference purposes. In situations where posting these documents is not feasible, (such as no office trailer), these documents should be separated and immediately accessible.

Chemical Inventory Listing (posted) - This list represents all chemicals brought on site, including decontamination solutions, sample preservations, fuel, etc.. This list should be posted in a central area.

Material Safety Data Sheets (MSDS) (maintained) - The MSDSs should also be in a central area accessible to all site personnel. These documents should match all the listings on the chemical inventory list for all substances employed on site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

The OSHA Job Safety & Health Protection Poster (posted) - this poster, as directed by 29 CFR 1903.2 (a)(1), should be conspicuously posted in places where notices to employees are normally posted. Each FOL shall ensure that this poster is not defaced, altered, or covered by other material.

Site Clearance (maintained) - This list is found within the training section of the HASP (See Figure 8-2). This list identifies all site personnel, dates of training (including site-specific training), and medical surveillance. The lists indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

Emergency Phone Numbers and Directions to the Hospital(s) (posted) - This list of numbers and directions will be maintained at all phone communications points and in each site vehicle.

Medical Data Sheets/Cards (maintained) - Medical Data Sheets will be filled out by on site personnel and filed in a central location. The Medical Data Sheet will accompany any injury or illness requiring medical attention to the medical facility. a copy of this sheet or a wallet card will be given to all personnel to be carried on their person.

Hearing Conservation Standard (29 CFR 1910.95) (posted) - this standard will be posted anytime hearing protection or other noise abatement procedures are employed.

Personnel Monitoring (maintained) - All results generated through personnel sampling (levels of airborne toxins, noise levels, etc.) will be posted to inform individuals of the results of that effort.

Placards and Labels (maintained) - Where chemical inventories have been separated because of quantities and incompatibilities, these areas will be conspicuously marked using DOT placards and acceptable (Hazard Communication 29 CFR 1910.1200(f)) labels.

The purpose, as stated above, is to allow site personnel quick access to this information. Variations concerning location and methods of presentation are acceptable, providing the objection is accomplished.

13.0 GLOSSARY

ACGIH	American Conference of Governmental Industrial Hygienists
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-term Environmental Action - Navy
CNS	Central Nervous System
CTO	Contract Task Order
CZR	Contamination Reduction Zone
DOD	United States Department of Defense
eV	electron Volts
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
IDLH	Immediate Dangerous to Life or Health
IDW	Investigative-Derived Wastes
LEL/LFL	Lower Explosive Limit / Lower Flammable Limit
MSDS	Material Safety Data Sheets
N/A	Not Available
NAS	Naval Air Station
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicity Program
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PPE	Personal Protective Equipment
SAP	Sampling and Analyses Plan
SOPs	Standard Operating Procedures
SSO	Site Safety Officer
TBD	To be determined
TLV	Threshold Limit Value
TOM	Task Order Manager
TWA	Time-Weighted Average
WP	Work Plan