

**Health and Safety Plan  
for  
Phase III Investigation  
Area A Wetland - Site 2B**

**Naval Submarine Base - New London  
Groton, Connecticut**



**Naval Facilities Engineering Command  
Mid-Atlantic**

**Contract Number N62467-04-D-0055**

**Contract Task Order 0439**

**Revision 1  
October 2008**

**HEALTH AND SAFETY PLAN**

**FOR**

**PHASE III INVESTIGATION  
AREA A WETLAND - SITE 2B**

**NAVAL SUBMARINE BASE - NEW LONDON  
GROTON, CONNECTICUT**

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

**Submitted to:  
Naval Facilities Engineering Command  
Mid-Atlantic  
9742 Maryland Avenue  
Norfolk, Virginia 23511-3095**

**Submitted by:  
Tetra Tech NUS, Inc.  
234 Mall Boulevard, Suite 260  
King of Prussia, Pennsylvania 19406**

**CONTRACT NUMBER N62467-04-D-0055  
CONTRACT TASK ORDER 0439**

**Revision 1  
October 2008**

**PREPARED UNDER THE SUPERVISION OF:**

**APPROVED FOR SUBMITTAL BY:**



**AARON BERNHARDT  
PROJECT MANAGER  
TETRA TECH NUS, INC.  
PITTSBURGH, PENNSYLVANIA**



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

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
1.1 AUTHORITY .....	1-1
1.2 KEY PROJECT PERSONNEL AND ORGANIZATION.....	1-1
1.3 SITE INFORMATION AND PERSONNEL ASSIGNMENTS.....	1-3
<b>2.0 EMERGENCY ACTION PLAN .....</b>	<b>2-1</b>
2.1 INTRODUCTION.....	2-1
2.2 EMERGENCY PLANNING .....	2-1
2.3 EMERGENCY RECOGNITION AND PREVENTION .....	2-2
2.3.1 Recognition .....	2-2
2.3.2 Prevention .....	2-3
2.4 EVACUATION ROUTES, PROCEDURES, AND PLACES OF REFUGE .....	2-3
2.5 EMERGENCY CONTACTS .....	2-4
2.6 EMERGENCY ROUTE TO HOSPITAL .....	2-6
2.7 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES.....	2-7
2.8 PPE AND EMERGENCY EQUIPMENT.....	2-7
2.9 DECONTAMINATION PROCEDURES / EMERGENCY MEDICAL TREATMENT.....	2-7
2.10 INJURY/ILLNESS REPORTING.....	2-8
<b>3.0 SITE BACKGROUND.....</b>	<b>3-1</b>
3.1 SITE HISTORY .....	3-1
3.2 SPECIFIC SITES TO BE INVESTIGATED.....	3-1
3.2.1 Area A Wetland .....	3-1
<b>4.0 SCOPE OF WORK.....</b>	<b>4-1</b>
4.1 AREA A WETLAND .....	4-1
<b>5.0 IDENTIFYING AND COMMUNICATING TASK-SPECIFIC HAZARDS AND GENERAL SAFE WORK PRACTICES .....</b>	<b>5-1</b>
<b>6.0 HAZARD ASSESSMENT AND CONTROLS.....</b>	<b>6-1</b>
6.1 CHEMICAL HAZARDS .....	6-1
6.1.1 Metals Properties and Exposure.....	6-1
6.2 PHYSICAL HAZARDS .....	6-3
6.2.1 Slips, Trips, and Falls.....	6-3
6.2.2 Strain/Muscle Pulls from Heavy Lifting .....	6-3
6.2.3 Cold Stress.....	6-3
6.2.4 Pinch/Compression Points.....	6-4
6.2.5 Natural Hazards .....	6-4
6.2.6 Vehicular and Equipment Traffic.....	6-5
6.2.7 Inclement Weather.....	6-5
<b>7.0 AIR MONITORING.....</b>	<b>7-1</b>
7.1 INSTRUMENTS AND USE .....	7-1
7.1.1 Particulate Monitor .....	7-1
7.2 INSTRUMENT MAINTENANCE AND CALIBRATION .....	7-2
7.3 DOCUMENTING INSTRUMENT READINGS .....	7-2

**TABLE OF CONTENTS (Continued)**

<u>SECTION</u>	<u>PAGE</u>
<b>8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS</b> .....	<b>8-1</b>
8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING .....	8-1
8.2 SITE-SPECIFIC TRAINING .....	8-1
8.3 MEDICAL SURVEILLANCE .....	8-1
8.4 SITE VISITORS .....	8-2
<b>9.0 SITE CONTROL</b> .....	<b>9-1</b>
9.1 EXCLUSION ZONE .....	9-1
9.1.1 Exclusion Zone Clearance .....	9-1
9.2 CONTAMINATION REDUCTION ZONE .....	9-1
9.3 SUPPORT ZONE .....	9-2
9.4 SAFE WORK PERMITS .....	9-2
9.5 SITE VISITORS .....	9-2
9.6 SITE SECURITY .....	9-3
9.7 SITE MAP .....	9-3
9.8 BUDDY SYSTEM .....	9-4
9.9 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS .....	9-4
9.10 COMMUNICATION .....	9-4
<b>10.0 SPILL CONTAINMENT PROGRAM</b> .....	<b>10-1</b>
10.1 SCOPE AND APPLICATION .....	10-1
10.2 POTENTIAL SPILL AREAS .....	10-1
10.3 LEAK AND SPILL DETECTION .....	10-1
10.4 PERSONNEL TRAINING AND SPILL PREVENTION .....	10-1
10.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT .....	10-2
10.6 SPILL CONTROL PLAN .....	10-2
<b>11.0 CONFINED-SPACE ENTRY</b> .....	<b>11-1</b>
<b>12.0 MATERIALS AND DOCUMENTATION</b> .....	<b>12-1</b>
12.1 MATERIALS TO BE POSTED AT THE SITE .....	12-1
<b>13.0 ACRONYMS / ABBREVIATIONS</b> .....	<b>13-1</b>
<b>ATTACHMENT I</b>	<b>MEDICAL DATA SHEET</b>
<b>ATTACHMENT II</b>	<b>INCIDENT REPORT FORM</b>
<b>ATTACHMENT III</b>	<b>SAFE WORK PERMITS</b>
<b>ATTACHMENT IV</b>	<b>OSHA POSTER</b>

TABLE OF CONTENTS (Continued)

LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
2-1	Emergency Contacts NSB-NLON.....	2-5
6-1	Comparison of Amount of Dust in Air Metal Concentrations to Current Occupational Exposure Limits .....	6-1

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
2-1	Maps to Lawrence and Memorial Hospital.....	2-6
2-2	Potential Exposure Protocol.....	2-9
7-1	Documentation of Field Calibration.....	7-3
8-1	Site-Specific Training Documentation.....	8-3
9-1	Example Safe Work Permit.....	9-5

## 1.0 INTRODUCTION

The objective of this Health and Safety Plan (HASP) is to provide the safety and health requirements, restrictions, practices and procedures for Tetra Tech NUS, Inc. (TtNUS) personnel participating in the Phase IV Investigation for Area A Wetland - Site 2B at the Naval Submarine Base - New London (NSB-NLON), located in Groton, Connecticut.

This HASP is to be used in conjunction with the Tetra Tech NUS Health and Safety Guidance Manual. The Guidance Manual provides detailed information pertaining to hazard recognition and control, and TtNUS standard operating procedures. This HASP and the contents of the Guidance Manual were developed to comply with the requirements stipulated in 29 CFR 1910.120 (OSHA's Hazardous Waste Operations and Emergency Response Standard). Both documents must be present at the site to satisfy these requirements.

This HASP has been written to support proposed tasks and techniques associated with the scope of work as presented in Section 4.0. It has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work at the site. Should the proposed work site conditions and/or suspected hazards change, or if new information becomes available, this document will be modified. Changes to the HASP will be made with the approval of the TtNUS Site Safety Officer (SSO) and the TtNUS Health and Safety Manager (HSM). Requests for modifications to the HASP will be directed to the SSO who will determine whether to make the changes. The SSO will notify the Project Manager (PM), who will notify the affected personnel of changes.

### 1.1 AUTHORITY

This work is authorized under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Mid Atlantic, Naval Facilities Engineering Command, as defined under Contract No. N62467-04-D-0055; Contract Task Order Number 0439.

### 1.2 KEY PROJECT PERSONNEL AND ORGANIZATION

This section defines responsibilities for site safety and health for TtNUS employees conducting the hand augering, sampling and other supporting field activities under this field effort. All personnel assigned to participate in the field work have the primary responsibility for performing all of their work tasks in a manner that is consistent with the TtNUS Health and Safety Policy, the health and safety training that they have received, the contents of this HASP, and in an overall manner that protects their personal safety and health and that of their co-workers. The following persons are the primary point of contact and

have the primary responsibility for observing and implementing this HASP and for overall on-site health and safety.

- The TtNUS TOM is responsible for the overall direction and implementation of health and safety for this work.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of this HASP. The FOL manages field activities, executes the Work Plan, and enforces safety procedures as applicable to the Work Plan. Specifically, the FOL will:
  - Verify training and medical status of on-site personnel in relation to site activities.
  - Assist and represent TtNUS with emergency services (if needed)
  - Provide elements site-specific training for on site personnel.
- The TtNUS Site Safety Officer (SSO) or his/her representative supports the FOL concerning the aspects of health and safety including, but not limited to:
  - Coordinating health and safety activities
  - Selecting, applying, inspecting, and maintaining personal protective equipment
  - Establishing work zones and control points
  - Implementing air monitoring procedures
  - Implementing hazard communication, respiratory protection, and other associated safety and health programs
  - Coordinating emergency services
  - Providing elements of site-specific training
- Compliance with these requirements is monitored by the Project Health and Safety Officer (PHSO) and is coordinated through the HSM.

**1.3 SITE INFORMATION AND PERSONNEL ASSIGNMENTS**

**Site Name:** Naval Submarine Base New London  
**Address:** Groton, Connecticut      **Navy Point of Contact:** Richard Conant  
**Phone Number:** (860) 694-5649  
**Navy RPM:** Roy Pinkoski  
**Phone Number:** (757) 444-0735

**Purpose of Site Visit:** Field tasks include sampling of surface water and sediment at the Landfill A wetland.

**Proposed Dates of Work:** October 2008 to completion

**Project Team:**

**TtNUS Personnel:**

**Discipline/Tasks Assigned:**

<u>Aaron Bernhardt</u>	<u>PM</u>
<u>Matthew M. Soltis, CIH, CSP</u>	<u>HSM</u>
<u>Jennifer Choich, PhD</u>	<u>PHSO</u>
<u>Aaron Bernhardt</u>	<u>FOL</u>
<u>Charlie Warino</u>	<u>SSO</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

**Non-TtNUS Personnel**

**Affiliation/Discipline/Tasks Assigned**

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

Jennifer Choich, PhD

## 2.0 EMERGENCY ACTION PLAN

### 2.1 INTRODUCTION

This section has been developed as part of a planning effort to direct and guide field personnel in the event of an emergency. In the event of an emergency, the field team will primarily evacuate and assemble to an area unaffected by the emergency and notify the appropriate local emergency response personnel/agencies. TtNUS personnel are not authorized to participate in any emergency response activities. Workers who are ill or who have suffered a non-serious injury may be transported by site personnel to nearby medical facilities, provided that such transport does not aggravate or further endanger the welfare of the injured/ill person. 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. The Navy RPM (Roy Pinkoski) and Navy point of contact Richard Conant will be notified if outside response agencies are contacted.

TtNUS personnel may participate in minor event response and emergency prevention activities 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 EMERGENCY PLANNING

Through the initial hazard/risk assessment effort, emergencies resulting from chemical, physical, or fire hazards are the types of emergencies which could be encountered during site activities. To minimize or eliminate the potential for these emergency situations, pre-emergency planning activities will include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with the City of Groton Emergency Response personnel to ensure that TtNUS emergency action activities are compatible with existing 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 will include the following:
  - Chemical Inventory (of chemicals used onsite), with Material Safety Data Sheets.

- Onsite personnel medical records (Medical Data Sheets).
- A log book identifying personnel onsite each day.
- Hospital route maps with directions (these should also be placed in each site vehicle).
- Emergency Notification - phone numbers.

The TtNUS FOL will be responsible for the following tasks:

- 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.
- Periodically performing practice drills to ensure site workers are familiar with incidental response measures.
- Providing the necessary equipment to safely accomplish identified tasks.

## **2.3 EMERGENCY RECOGNITION AND PREVENTION**

### **2.3.1 Recognition**

Emergency situations that may be encountered during site activities will generally be recognized by visual observation. Visual observation will also play a role in detecting potential exposure events to some chemical hazards. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with the principle site contaminants of concern as presented in this HASP. Tasks to be performed at the site, potential hazards associated with those tasks and the recommended control methods are discussed in detail in Sections 5.0 and 6.0. Additionally, early recognition of hazards will be supported by daily site surveys to eliminate any situation predisposed to an emergency. The FOL and/or the SSO will be responsible for performing surveys of work areas prior to initiating site operations and periodically while operations are being conducted. Survey findings are documented by the FOL and/or the SSO in the Site Health and Safety logbook, however, site personnel will be responsible for reporting hazardous situations. Where potential hazards exist, TtNUS will initiate control measures to prevent adverse effects to human health and the environment.

The above actions will provide early recognition for potential emergency situations, and allow TtNUS to instigate necessary control measures. However, if the FOL and the SSO determine that control

measures are not sufficient to eliminate the hazard TtNUS will withdraw from the site and notify the appropriate response agencies listed in Table 2-1.

### **2.3.2 Prevention**

TtNUS and subcontractor personnel will minimize the potential for emergencies by following the Health and Safety Guidance Manual and ensuring compliance with the HASP and applicable OSHA regulations. Daily site surveys of work areas, prior to the commencement of that day's activities, by the FOL and/or the SSO will also assist in prevention of illness/injuries when hazards are recognized early and control measures initiated.

## **2.4 EVACUATION ROUTES, PROCEDURES, AND PLACES OF REFUGE**

An evacuation will be initiated whenever recommended hazard controls are insufficient to protect the health, safety or welfare of site workers. Specific examples of conditions that may initiate an evacuation include, but are not limited to the following: severe weather conditions; fire or explosion; monitoring instrumentation readings which indicate levels of contamination are greater than instituted action levels; and evidence of personnel overexposure to potential site contaminants.

In the event of an emergency requiring evacuation, personnel will immediately stop activities and report to the designated safe place of refuge unless doing so would pose additional risks. When evacuation to the primary place of refuge is not possible, personnel will proceed to a designated alternate location and remain until further notification from the TtNUS FOL. Safe places of refuge will be identified prior to the commencement of site activities by the SSO and will be conveyed to personnel as part of the pre-activities training session. This information will be reiterated during daily safety meetings. Whenever possible, the safe place of refuge will also serve as the telephone communications point for that area. During an evacuation, personnel will remain at the refuge location until directed otherwise by the TtNUS FOL or the on-site Incident Commander of the Emergency Response Team. The FOL or the SSO will perform a head count at this location to account for and to confirm the location of site personnel. Emergency response personnel will be immediately notified of any unaccounted personnel. The SSO will document the names of personnel onsite (on a daily basis) in the site Health and Safety Logbook. This information will be utilized to perform the head count in the event of an emergency.

Evacuation procedures will be discussed during the pre-activities training session, prior to the initiation of project tasks. Evacuation routes from the site and safe places of refuge are dependent upon the location at which work is being performed and the circumstances under which an evacuation is required. Additionally, site location and meteorological conditions (i.e., wind speed and direction) may dictate evacuation routes. As a result, assembly points will be selected and communicated to the workers

relative to the site location where work is being performed. Evacuation should always take place in an upwind direction from the site.

## **2.5 EMERGENCY CONTACTS**

Prior to initiating field activities, personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. Table 2-1 provides a list of emergency contacts and their associated telephone numbers. This table must be posted where it is readily available to site personnel. Facility maps should also be posted showing potential evacuation routes and designated meeting areas.

As soon as possible, the Navy point of contact Richard Conant will 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 onsite (See Attachment I).

**TABLE 2-1  
EMERGENCY CONTACTS  
NSB-NLON, GROTON, CONNECTICUT**

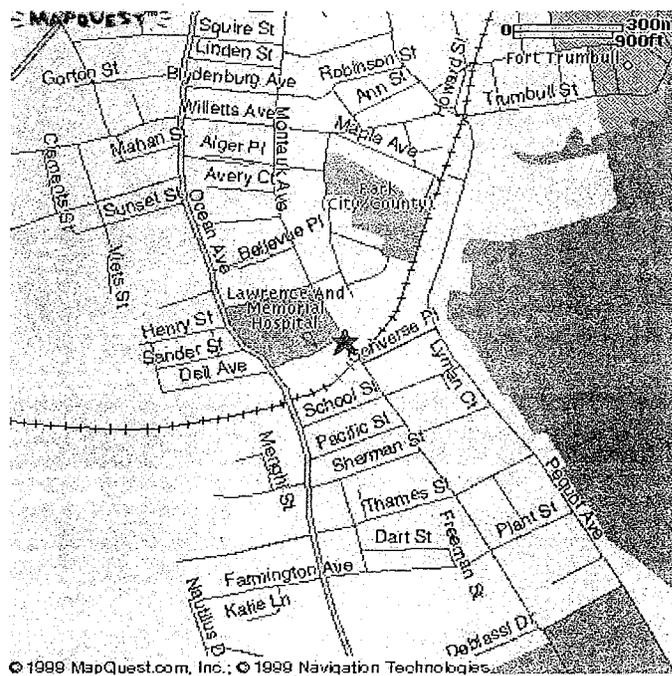
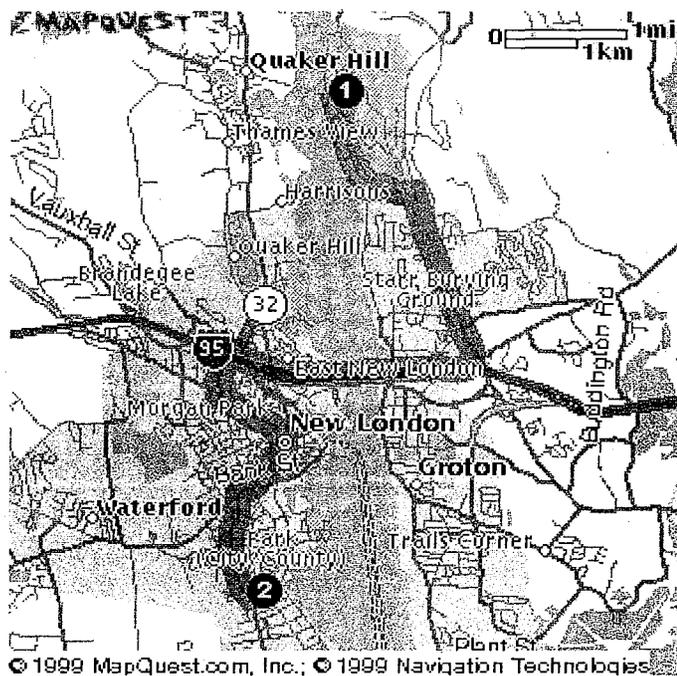
CONTACT	PHONE NUMBER
Local NSB-NLON Fire Department and EMS	Ext. 3333 from base phone or (860) 694-3333
Lawrence & Memorial Hospital	(860) 442-0711
(Off-Base) Groton Police and Fire Department	911
Poison Control Center	(800) 222-1222
Utility Emergencies (electric, gas, water and sewer) NSB-NLON Public Works:	(860) 694-4711
Connecticut Call Before Your Dig	(800) 922-4455
Site Contact Richard Conant	(860) 694-5649
Navy RPM Roy Pinkoski	(757) 444-0735
NSB-NLON Security:	(860) 694-3444
TtNUS Project Manager Aaron Bernhardt	(412) 921-8984
TtNUS Project Health and Safety Officer Jennifer Choich, PhD	(412) 921-8083
TtNUS CLEAN Health and Safety Manager Matthew M. Soltis, CIH, CSP	(412) 921-8912

## 2.6 EMERGENCY ROUTE TO HOSPITAL

Lawrence and Memorial Hospital, 365 Montauk Ave., New London:

Exit the base and proceed South on Route 12. Exit onto I-95 South and take exit 82A. Proceed on the service road and continue until turning on Coleman Street. Travel on Coleman St. to the intersection of Coleman and Bank Streets. Turn right onto Bank Street and follow to the intersection of Ocean Avenue. Turn left onto Ocean Avenue and follow signs to the Hospital.

FIGURE 2-1  
MAPS TO LAWRENCE AND MEMORIAL HOSPITAL



## **2.7 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES**

TtNUS personnel will be working in close proximity to each other at NSB-NLON. As a result, hand signals, voice commands, and line of site communication will be sufficient to alert site personnel of an emergency. Two-way radios may also be used between site workers to communicate emergency situations and request assistance if work occurs concurrently at multiple sites that are not proximate to each other.

If an emergency warranting evacuation occurs, the following procedures are to be initiated:

- Initiate the evacuation via hand signals, voice commands, or line of site communication
- Report to the designated refuge point where the FOL will account for all personnel
- Once non-essential personnel are evacuated, appropriate response procedures will be enacted to control the situation.
- Describe to the FOL (FOL will serve as the Incident Coordinator) pertinent incident details.

In the event that site personnel cannot mitigate the hazardous situation, the FOL and SSO will enact emergency notification procedures to secure additional assistance in the following manner:

Dial 911 and call other pertinent emergency contacts listed in Table 2-1 and report the incident. Give the emergency operator the location of the emergency, the type of emergency, the number of injured, and a brief description of the incident. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

## **2.8 PPE AND EMERGENCY EQUIPMENT**

A first-aid kit, eye wash units (or bottles of disposable eyewash solution) and fire extinguishers (strategically placed) will be maintained onsite and shall be immediately available for use in the event of an emergency. This equipment will be located in the field office as well as in each site vehicle. At least one first aid kit supplied with equipment to protect against bloodborne pathogens will also be available on site. Personnel identified within the field crew with bloodborne pathogen and first-aid training will be the only personnel permitted to offer first-aid assistance.

## **2.9 DECONTAMINATION PROCEDURES / EMERGENCY MEDICAL TREATMENT**

During any site evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. Decontamination will not be performed if the incident warrants immediate evacuation. However, it is unlikely that an evacuation would occur which would require workers to evacuate the site without first performing the necessary decontamination procedures.

TiNUS personnel will perform rescue operations from emergency situations and may provide initial medical support for injury/illnesses requiring only "Basic First-Aid" level support, and only within the limits of training obtained by site personnel. Basic First-Aid is considered treatment that can be rendered by a trained first aid provider at the injury location and not requiring follow-up treatment or examination by a physician (for example; minor cuts, bruises, stings, scrapes, and burns). Not included as Basic First-Aid are second or third degree burns, cuts, lacerations requiring stitches or butterfly bandaging, heat exhaustion, severe poisonous plant or insect bite reactions. Personnel providing medical assistance are required to be trained in First-Aid and in the requirements of OSHA's Bloodborne Pathogen Standard (29 CFR 1910.1030). Medical attention above First-Aid level support will require assistance from the designated emergency response agencies. Attachment II provides the procedure to follow when reporting an injury/illness, and the form to be used for this purpose. **If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-2.**

## **2.10 INJURY/ILLNESS REPORTING**

If any TiNUS personnel are injured or develop an illness as a result of working on site, the TiNUS "Injury/Illness Procedure" (Attachment II) must be followed. Following this procedure is necessary for documenting of the information obtained at the time of the incident.

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 onsite. 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 2-2 POTENTIAL EXPOSURE 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, being 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) and Human Resources Department (Marilyn Duffy) at 412-921-7090.

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

WorkCare will compile the results of 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 2-2 (continued)**  
**WORKCARE**  
**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 their 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	Chest Tightness / Pressure
Tearing	Nausea / Vomiting
Headache	Dizziness
Cough	Weakness
Shortness of Breath	

**Delayed Symptoms:**

Weakness	Loss of Appetite
Nausea / Vomiting	Abdominal Pain
Shortness of Breath	Headache
Cough	Numbness / Tingling

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

Burning of eyes, nose, or throat	Nausea / Vomiting
Tearing	Dizziness
Headache	Weakness
Cough	Loss of Appetite
Shortness of Breath	Abdominal Pain
Chest Tightness / Pressure	Numbness / Tingling
Cyanosis	

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-Medicated: \_\_\_\_\_ Physician Treated: \_\_\_\_\_

## **3.0 SITE BACKGROUND**

This section provides information pertaining to NSB-NLON and the sites that are to be investigated. This information will be revised if additional information becomes available or if additional sites are going to be investigated.

### **3.1 SITE HISTORY**

NSB-NLON is located in southern Connecticut, in the towns of Groton and Ledyard. NSB-NLON consists of approximately 687 acres of land and associated buildings, situated on the east bank of the Thames River, and is approximately six miles north of Long Island Sound. Location maps of NSB-NLON are included in the Work Plan. NSB-NLON was established as an official Navy yard in July 1886. The site initially moored small craft and obsolete warships and was used as a coaling station for the Atlantic Fleet. The property was officially established as a permanent submarine base in 1916. The overall base facilities were expanded and a Submarine School training facility was established in 1917; the Submarine Medical Center was established in 1918. During World Wars I and II, NSB-NLON greatly expanded in size and in the number of buildings to support the submarine fleet. NSB-NLON currently provides a base command for naval submarine fleet activities in the Atlantic Ocean. In addition, NSB-NLON contains naval housing, submarine training facilities, military offices, medical facilities, and facilities for the maintenance, repair, and overhaul of submarines.

### **3.2 SPECIFIC SITES TO BE INVESTIGATED**

#### **3.2.1 Area A Wetland**

The Area A Wetland is adjacent to the northeast edge of the Area A Landfill and is approximately 23.6 acres in size. The Area A Wetland is a relatively flat lying, swampy, vegetated area. In general, the surface elevation of the wetland is between 70 and 80 feet. In the late 1950s, dredge spoils from the Thames River were pumped to the A Wetland area and contained within an earthen dike that extends from the Area A Landfill to the south side of the Area A Weapons Center. Based on the boring logs, the total volume of dredged material in the wetlands is approximately 1.2 million cubic yards.

It was also reported that pesticide "bricks" were placed on the wetland ice during winter and allowed to dissolve as a mosquito control measure. These "bricks" consisted of formulated (water-soluble) DDT and were used in the 1960s, prior to the 1972 ban on DDT. Other sources of contamination to the Area A Wetland include runoff from the Area A Landfill prior to it being capped and stormwater discharges from the Area A Weapons Center.

## 4.0 SCOPE OF WORK

This section of the HASP addresses proposed site activities that are to be conducted at the previously discussed site at NSB-NLON. The specific tasks anticipated to be involved are broken out for each Wetland A location where sampling will be performed.

### 4.1 AREA A WETLAND

- Collect 26 surface sediment samples (0-4 inches) focused in the western portion of the wetland near the dike with a few are near the Area A Weapons Center. This is where contaminant concentrations were greatest in the previous sampling event. Samples will be collected to conduct toxicity tests. The depth of 0-4 inches was selected because the top several inches are of concern to sediment invertebrates.

All of the above sediment sampling/coring activities will be accomplished through the use of manually—operated hand tools (i.e. spoons, trowels).

No other activities are anticipated to be necessary. If it becomes apparent that additional or modified tasks must be performed beyond those listed above, the work is not to proceed until the FOL or SSO notifies the Project Manager and the HSM, so that any appropriate modifications to this HASP can first be developed and communicated to the intended task participants.

## **5.0 IDENTIFYING AND COMMUNICATING TASK-SPECIFIC HAZARDS AND GENERAL SAFE WORK PRACTICES**

The purpose of this section is to identify the anticipated hazards and appropriate hazard prevention/hazard control measures that are to be observed for each planned task or operation. These topics have been summarized for each planned task through the use of task-specific Safe Work Permits (SWPs), which are to be reviewed in the field by the SSO with all task participants prior to initiating any task. Additionally, potential hazard and hazard control matters that are relevant but are not necessarily task-specific are addressed in the following portions of this section.

Section 6.0 presents additional information on hazard anticipation, recognition, and control relevant to the planned field activities.

### **GENERAL SAFE WORK PRACTICES**

In addition to the task-specific work practices and restrictions identified in the SWPs attached to this HASP, the following general safe work practices are to be followed when conducting work on-site.

- Eating, drinking, chewing gum or tobacco, taking medication, or smoking in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists is prohibited.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. If a source of potable water is not available at the work site that can be used for hands-washing, the use of waterless hands cleaning products will be used, followed by actual hands-washing as soon as practicable upon exiting the site.
- Avoid contact with potentially contaminated substances including puddles, pools, mud, or other such areas. Avoid, kneeling on the ground or leaning or sitting on equipment. Keep monitoring equipment away from potentially contaminated surfaces.
- Plan and mark entrance, exit, and emergency evacuation routes.
- Rehearse unfamiliar operations prior to implementation.
- 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 SSO.
- Observe co-workers 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.

## 6.0 HAZARD ASSESSMENT AND CONTROLS

This section provides reference information regarding the chemical and physical hazards which may be associated with activities that are to be conducted as part of the scope of work.

### 6.1 CHEMICAL HAZARDS

Based on an evaluation of previous analytical data and historical information about the site, the primary contaminants of concern (COCs) for exposure through the inhalation pathway at this site are metals. Measures taken to control potential exposures will address potential exposure via inhalation to metals identified at the site. Potential exposure that may occur through direct contact or ingestion of contaminants can be adequately controlled through the use of appropriate personal protective equipment and good hygiene.

**TABLE 6-1  
COMPARISON OF AMOUNT OF DUST IN AIR METAL CONCENTRATIONS  
TO CURRENT OCCUPATIONAL EXPOSURE LIMITS**

Particulates			
Contaminant of Concern	Highest Concentration Previously Detected in Soil/Sediment	Amount of Dust in Air Generated Before PEL/TLV Would be Reached	Current OSHA PEL and ACGIH TLV
Aluminum	28,600 mg/kg	43.71 mg/m <sup>3</sup>	ACGIH: 1 mg/m <sup>3</sup> TWA <sub>8</sub> OSHA: 5 ppm TWA <sub>8</sub>
Iron	315,000 mg/kg	3.97 mg/m <sup>3</sup>	ACGIH: 1 mg/m <sup>3</sup> TWA <sub>8</sub>
Manganese	10,100 mg/kg	4.95 mg/m <sup>3</sup>	ACGIH: 0.2 mg/m <sup>3</sup> TWA <sub>8</sub> OSHA: 5 ppm Ceiling
Lead	241 mg/kg	51.87 mg/m <sup>3</sup>	ACGIH: 0.5 mg/m <sup>3</sup> TWA <sub>8</sub> OSHA: 0.05 ppm TWA <sub>8</sub>

Table Notes:

TWA<sub>8</sub>: Average air concentration over an 8-hour work period that is not to be exceeded

Ceiling: Concentration in air that should not be exceeded

#### 6.1.1 Metals Properties and Exposure

Heavy metals are chemical elements with specific gravities that are at least 5 times the specific gravity of water. The specific gravity of water is 1 at 4°C (39°F). Simply stated, specific gravity is a measure of density of a given amount of a solid substance compared to an equal amount of water. Heavy metals become toxic when they are not metabolized by the body and accumulate in soft tissues. Metal toxicity usually occurs from a sudden or unexpected exposure to a high level of a heavy metal (e.g., from

careless handling, inadequate safety precautions, or an accidental spill or release of toxic material). Symptoms of metal toxicity include damaged or reduced mental and central nervous function, lower energy levels, and damage to blood composition, lungs, kidneys, liver, and other vital organs. Long-term exposure may result in slowly progressing physical, muscular, and neurological degenerative processes that mimic Alzheimer's disease, Parkinson's disease, muscular dystrophy, and multiple sclerosis.

**Inhalation:** As indicated in this table, from a worst-case scenario metals at NSB New London could pose a potential inhalation hazard.

However, in regarding the results of this data evaluation, it is important to recognize the following:

- The planned work area is outdoors, with ample natural ventilation that will reduce any airborne concentrations through dilution and dispersion.
- The soil values used in this evaluation were the *highest* concentration previously detected in soil/sediment

As a result of these factors, it is unlikely that workers participating in this activity will encounter any airborne concentrations of these COCs that would represent an occupational exposure concern. To monitor this exposure route, a dust particulate monitor will be used at NSB New London to monitor dust generation. In addition, area wetting techniques will be utilized to minimize inhalation of metals-contaminated dust.

**Ingestion and Skin Contact:** Potential exposure concerns to contaminants of concern may also occur through ingesting or coming into direct skin contact with contamination in contaminated media. The likelihood of worker exposure concerns through these two routes are also considered very unlikely, provided that workers follow good personal hygiene and standard good sample collection/sample handling practices, and wear appropriate PPE as specified in this HASP. Examples onsite practices that are to be observed that will protect workers from exposure via ingestion or skin contact include the following:

- No hand-to-mouth activities on site (eating, drinking, smoking, etc.)
- Washing hands upon leaving the work area and prior to performing any hand to mouth activities
- Wearing surgeon's-style gloves whenever handling potentially-contaminated media, including groundwater, soil, and sediment, hand tools, and sample containers.

## 6.2 PHYSICAL HAZARDS

The following is a list of physical hazards that may be encountered at the site or may be present during the performance of site activities.

- Slip, trips, and falls
- Strain/muscle pulls from heavy lifting
- Cold Stress
- Pinch/compression points
- Natural hazards (snakes, ticks, poisonous plants, etc.)
- Vehicular and equipment traffic
- Inclement weather

These hazards are discussed further below, and are presented relative to each task in the task-specific Safe Work Permits.

### 6.2.1 Slips, Trips, and Falls

During various site activities there is a potential for slip, trip, and fall hazards associated with wet, steep, or unstable work surfaces. To minimize hazards of this nature, personnel required to work in and along areas prone to these types of hazards will be required to exercise caution, and use appropriate precautions (restrict access, guardrails, life lines and/or safety harnesses) and other means suitable for the task at hand. Site activities will be performed using the buddy system.

### 6.2.2 Strain/Muscle Pulls from Heavy Lifting

During execution of planned activities there is some potential for strains, sprains, and/or muscle pulls due to the physical demands and nature of this site work. To avoid injury during lifting tasks personnel are to lift with the force of the load carried by their legs and not their backs. When lifting or handling heavy material or equipment use an appropriate number of personnel. Keep the work area free from ground clutter to avoid unnecessary twisting or sudden movements while handling loads.

### 6.2.3 Cold Stress

Because of the likely seasonal weather conditions that will exist during the planned schedule, it will be necessary for the field team to be aware of the signs and symptoms and the measures appropriate to prevent cold stress. This is addressed in detail in section 4.0 of the TiNUS Health and Safety Guidance Manual, which the SSO is responsible for reviewing and implementing as appropriate on this project.

Work performed when temperatures are below 50 degrees Fahrenheit (°F) may result in varying levels of cold stress (frost nip, frost bite, etc.) depending on factors such as temperature, wind speed, and humidity; psychological factors such as metabolic rate and moisture content of the skin; and other factors such as the protective clothing being worn.

For more information on cold stress recognition and prevention, consult section 4.0 of the TtNUS Health and Safety Guidance Manual.

#### **6.2.4 Pinch/Compression Points**

Handling of tools, machinery, and other equipment on site may expose personnel to pinch/compression point hazards during normal work activities. Where applicable, equipment will have intact and functional guarding to prevent personnel contact with hazards. Personnel will exercise caution when working around pinch/compression points, using additional tools or devices (e.g., pinch bars) to assist in completing activities.

#### **6.2.5 Natural Hazards**

Natural hazards such as poisonous plants, bites from poisonous or disease carrying animals or insects (e.g., snakes, ticks, mosquitoes) are often prevalent at sites that are being investigated as part of hazardous waste site operations. To minimize the potential for site personnel to encounter these hazards, nesting areas in and about work areas will be avoided to the greatest extent possible. Work areas will be inspected to look for any evidence that these hazardous conditions may exist.

During warm months (spring through early fall), tick-borne Lyme Disease may pose a potential health hazard. The longer a disease carrying tick remains attached to the body, the greater the potential for contracting the disease. Wearing long sleeved shirts and long pants (tucked into boots and taped) will prevent initial tick attachment, while performing frequent body checks will help prevent long term attachment. Site first aid kits should be equipped with medical forceps and rubbing alcohol to assist in tick removal. For information regarding tick removal procedures and symptoms of exposure, consult Section 4.0 of the Health and Safety Guidance Manual.

Contact with poisonous plants and bites or stings from poisonous insects are other potential natural hazards. Long sleeved shirts and long pants (tucked into boots), and avoiding potential nesting areas, will minimize the potential for exposure. Additionally, insect repellents may be used by site personnel. Personnel who are allergic to stinging insects (such as bees, wasps and hornets) must be particularly careful since severe illness and death may result from allergic reactions. As with any medical condition

or allergy, information regarding the condition must be listed on the Medical Data Sheet (see Attachment I of this HASP), and the FOL or SSO notified.

### **Mosquito-Borne Illnesses**

Mosquitoes may carry diseases including St. Louis Encephalitis, Eastern Equine Encephalitis, La Crosse Encephalitis, and West Nile Virus. Mosquitoes become infected after biting infected birds. The symptoms of mosquito-borne illnesses may include headache, moderate to high fever, stiff neck, and confusion. In serious cases, coma, seizures, or paralysis can result. Symptoms usually appear between 5 to 15 days after exposure to infected mosquitoes. Mosquito-borne illnesses may be mild or serious and can lead to death.

Precautions include the following:

- Limit outdoor activities during peak mosquito times – at dusk and dawn.
- Avoid standing water.
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Apply insect repellent according to manufacturer's instruction to exposed skin. An effective repellent will contain 20 to 30 percent DEET (N,N-diethyl-meta-toluamide). Avoid products containing more than 30 percent DEET.
- Spray clothing with repellents containing permethrin or DEET; mosquitoes may bite through thin clothing.

#### **6.2.6 Vehicular and Equipment Traffic**

Hazards associated with vehicular and equipment traffic are unlikely to exist during site activities. To minimize the potential for injuries associated with potential vehicular hazards, site personnel will be instructed to maintain awareness of traffic and moving equipment when performing site activities. When working near roadways, site personnel will wear high visibility vests.

#### **6.2.7 Inclement Weather**

Project tasks under this Scope of Work will be performed outdoors. As a result, inclement weather may be encountered. In the event that adverse weather (electrical storms, tornadoes, etc.) conditions arise,

the FOL and/or the SSO will be responsible for temporarily suspending or terminating activities until hazardous conditions no longer exist.

## 7.0 AIR MONITORING

Potential metals-contaminated dust is present in significant concentrations to present an inhalation hazard during planned site activities. As a precautionary measure to assure that such exposures are avoided and documented, a direct reading instrument will be used to monitor worker exposures to metals present at the site.

### 7.1 INSTRUMENTS AND USE

#### 7.1.2 Particulate Monitor

Metals, in the form of dust particulates, may be present in significant concentrations during intrusive activities to present an inhalation hazard. As a precautionary measure to assure that such exposures are avoided and documented, continuous monitoring will be conducted during the intrusive site activities (i.e., sampling, etc.) using an airborne particulate/dust monitor, the worker's sense of smell, and perception of irritation (i.e. if the worker's nose/eyes becomes irritated or they smell a distinctive odor, they would notify their FOL/SSO).

The airborne particulate/dust monitor will be used continuously **during intrusive activities** primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. The SHSO will obtain and document the daily background reading at an upwind unaffected area and monitor for readings greater than that background level. The SHSO will monitor source areas (e.g., above collected samples and confined areas, etc.) for the presence of any reading greater than the daily-established background level. If elevated readings are observed, the SHSO will monitor the workers' breathing zone with the airborne particulate/dust monitor. If the appropriate instrument action level of 0.5 mg/m<sup>3</sup> is exceeded, the following process will be followed:

- The SHSO will order all personnel to stop work and retreat upwind to a safe unaffected area where they will remain until further directed by the SHSO.
- The SHSO will allow at least 5 minutes to pass so that the work area can ventilate and will then reapproach the work area while continuously monitoring the breathing zone.
- Only when background levels are re-established in breathing zone will work be permitted to resume.
- If background levels are not re-established, the SHSO will contact the HSM for additional direction.

## 7.0 AIR MONITORING

Potential metals-contaminated dust is present in significant concentrations to present an inhalation hazard during planned site activities. As a precautionary measure to assure that such exposures are avoided and documented, a direct reading instrument will be used to monitor worker exposures to metals present at the site.

### 7.1 INSTRUMENTS AND USE

#### 7.1.1 Particulate Monitor

Metals, in the form of dust particulates, may be present in significant concentrations during intrusive activities to present an inhalation hazard. As a precautionary measure to assure that such exposures are avoided and documented, continuous monitoring will be conducted during the intrusive site activities (i.e., sampling, etc.) using an airborne particulate/dust monitor, the worker's sense of smell, and perception of irritation (i.e. if the worker's nose/eyes becomes irritated or they smell a distinctive odor, they would notify their FOL/SSO).

The airborne particulate/dust monitor will be used continuously **during intrusive activities** primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. The SHSO will obtain and document the daily background reading at an upwind unaffected area and monitor for readings greater than that background level. The SHSO will monitor source areas (e.g., above collected samples and confined areas, etc.) for the presence of any reading greater than the daily-established background level. If elevated readings are observed, the SHSO will monitor the workers' breathing zone with the airborne particulate/dust monitor. If the appropriate instrument action level of 0.5 mg/m<sup>3</sup> is exceeded, the following process will be followed:

- The SHSO will order all personnel to stop work and retreat upwind to a safe unaffected area where they will remain until further directed by the SHSO.
- The SHSO will allow at least 5 minutes to pass so that the work area can ventilate and will then reapproach the work area while continuously monitoring the breathing zone.
- Only when background levels are re-established in breathing zone will work be permitted to resume.
- If background levels are not re-established, the SHSO will contact the HSM for additional direction.

## 7.2 INSTRUMENT MAINTENANCE AND CALIBRATION

Hazard monitoring instruments will be maintained and pre-field calibrated by the equipment provider (i.e., rental agency used). Operational checks and field calibration will be performed on site instruments each day prior to their use. Field calibration will be performed on instruments according to manufacturer's recommendations. 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 (which the SSO must assure are included with the instrument upon its receipt onsite). Field 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 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

## 7.3 DOCUMENTING INSTRUMENT READINGS

The SHSO is responsible for ensuring that air monitoring instruments are used in accordance with the specifications of this HASP and with manufacturer's specifications/recommendations. In addition, the SHSO is also responsible for ensuring that all instrument use is documented. This requirement can be satisfied either by recording instrument readings on pre-printed sampling log sheets or in a field log book.

**This includes the requirement for documenting instrument readings that indicate no elevated readings above noted daily background levels (i.e., no-exposure readings).** At a minimum, the SHSO must document the following information for each use of an air monitoring device:

- Date, time, and duration of the reading
- Site location where the reading was obtained
- Instrument used (e.g., LEL/O<sub>2</sub> meter, etc.)
- Personnel present at the area where the reading was noted
- Other conditions that are considered relevant to the SHSO (such as weather conditions, possible instrument interferences, etc.)



## **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 TtNUS personnel participating in on site activities. TtNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at NSB-NLON. TtNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within 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 site. Copies of certificates or other official documentation will be used to fulfill this requirement.

### **8.2 SITE-SPECIFIC TRAINING**

TtNUS SSO will provide site-specific training to TtNUS employees who will perform work on this project. Figure 8-1 will be used to document the provision and content of the project-specific and associated training. Site personnel will be required to sign this form prior to commencement of site activities. This training documentation will be employed to identify personnel who through record review and attendance of the site-specific training are cleared for participation in site activities. This document shall be maintained at the site to identify and maintain an active list of trained and cleared site personnel.

The TtNUS SSO will also conduct a pre-activities training session prior to initiating site work. This will consist of a brief meeting at the beginning of each day to discuss operations planned for that day, and a review of the appropriate Safe Work Permits with the planned task participants. A short meeting may also be held at the end of the day to discuss the operations completed and any problems encountered.

### **8.3 MEDICAL SURVEILLANCE**

TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS's medical surveillance program. Documentation for medical clearances will be maintained in the TtNUS Pittsburgh office and made available, as necessary, and will be documented using Figure 8-1 for every employee participating in onsite work activities at this site.

Each field team member, including visitors, entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet (see Attachment I of this HASP). 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 SITE VISITORS**

All site visitors to the site must be 100% escorted at all times and restricted from approaching any work areas where they could be exposed to hazards from TtNUS operations. If a visitor has authorization from the client and from the TtNUS Project Manager to approach our work areas, the FOL must assure that the visitor first provides documentation indicating that he/she/they have successfully completed the necessary OSHA introductory training, receive site-specific training from the SSO, and that they have been physically cleared to work on hazardous waste sites.



## 9.0 SITE CONTROL

This section outlines the means by which TiNUS 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. This approach will be comprised of an exclusion zone, a contamination reduction zone, and a support zone. It is also anticipated that this approach will control access to site work areas, restricting access by the general public, minimizing the potential for the spread of contaminants, and protecting individuals who are not cleared to enter work areas.

### 9.1 EXCLUSION ZONE

The exclusion zone will be considered the areas of the site of known or suspected contamination. Once sampling activities have been completed and any residual 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 of the site where active work (i.e., sample collection) is being performed plus a designated area of at least 15 feet surrounding the work area. Exclusion zones will be delineated as deemed appropriate by the FOL, through means such as erecting visibility fencing, barrier tape, cones, and/or postings to inform and direct personnel.

#### 9.1.1 Exclusion Zone Clearance

A pre-startup site visit will be conducted by members of the identified field team in an effort to identify proposed subsurface investigation locations, conduct utility clearances, and provide upfront notices concerning scheduled activities within the facility.

Subsurface activities will proceed only when utility clearance has been obtained. In the event that a utility is struck during a subsurface investigative activity, the emergency numbers provided in Section 2.0, Table 2-1, will be notified.

### 9.2 CONTAMINATION REDUCTION ZONE

The contamination reduction zone (CRZ) will be a buffer area between the exclusion zone and any area of the site where contamination is not suspected. This area will also serve as a focal point in supporting exclusion zone activities. This area will be delineated using barrier tape, cones, and postings to inform and direct facility personnel. Decontamination will be conducted at a central location. Equipment potentially contaminated will be bagged and taken to that location for decontamination.

### **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. The support zones will be established at areas of the site where away from potential exposure to site contaminants during normal working conditions or foreseeable emergencies.

### **9.4 SAFE WORK PERMITS**

Exclusion Zone work conducted in support of this project will be performed using Safe Work Permits (SWPs) to guide and direct field crews on a task by task basis. An example of the SWP to be used is provided in Figure 9-1. Partially completed SWPs for the work to be performed are attached to this HASP (Attachment III). These permits were completed to the extent possible as part of the development of this HASP. It is the SSO's responsibility to finalize and complete all blank portions of the SWPs based on current, existing conditions the day the task is to be performed, and then review that completed permit with all task participants as part of a pre-task tail gate briefing session. This will ensure that site-specific considerations and changing conditions are appropriately incorporated into the SWP, provide the SSO with a structured format for conducting the tail gate sessions, as well will also give personnel an opportunity to ask questions and make suggestions. All SWPs require the signature of the FOL or 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 (i.e., DOD, EPA, OSHA)
- Property Owners
- Authorized Navy Personnel
- Other authorized visitors

Non-DOD personnel working on this project are required to gain initial access to the base by coordinating with the TtNUS FOL or designee and following established base access procedures.

Once access to the base is obtained, personnel who require site access into areas of ongoing operations will be required to obtain permission from the TOM. Upon gaining access to the site, site visitors wishing

to observe operations in progress will be escorted by a TtNUS representative and shall be required to meet the minimum requirements discussed below:

- Site visitors will be directed to the FOL/SSO, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
- Site visitors wishing to enter the exclusion zone will be required to produce the necessary information supporting clearance to the site. This shall include information attesting to applicable training and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site operational zones during planned activities, visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items, they will be permitted to enter the operational zone. Visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. Visitors entering the exclusion zones during ongoing operations will be accompanied by a TtNUS representative. 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 the termination of on site activities until the unauthorized visitor is removed from the premises. Removal of unauthorized visitors will be accomplished with support from local law enforcement personnel.

## **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 Navy facility open to public access, the first line of security will take place using exclusive zone barriers, site work permits, 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 Base Contact. The Base Contact will serve as a focal point for 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. 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 personnel involved in this operation.

## **9.9 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS**

TtNUS and subcontractor personnel will provide MSDSs for 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 the 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 most field activities, a supported means of communication between field crew members will not be necessary. Two-way radios may be used between site workers to communicate emergency situations and request assistance if work occurs concurrently at multiple sites that are not proximate to each other.

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 at the NSB-NLON, the FOL will determine and arrange for telephone communications.

**FIGURE 9-1  
SAFE WORK PERMIT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**I. Work limited to the following (description, area, equipment used):** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**II. Primary Hazards:** Potential hazards associated with this task: \_\_\_\_\_  
 \_\_\_\_\_

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ T1NUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ T1NUS

**V. Protective equipment required**  Level D  Level B   
 Level C  Level A   
 Modifications/Exceptions: \_\_\_\_\_

**Respiratory equipment required** Yes  Specify on the reverse  
 No

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Primary Route(s) of Exposure/Hazard:** \_\_\_\_\_  
 \_\_\_\_\_

(Note to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

**VII. Additional Safety Equipment/Procedures**

Hard-hat..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs) .... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Glasses ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Safety belt/harness ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Chemical/splash goggles ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Radio/Cellular Phone ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Splash Shield..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Barricades ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Splash suits/coveralls ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Gloves (Type - )..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Work/rest regimen ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe Work shoes or boots... <input type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers..... <input type="checkbox"/> Yes <input type="checkbox"/> No
High Visibility vest..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	Other ..... <input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: \_\_\_\_\_

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc.).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IX. Additional Permits required** (Hot work, confined space entry, excavation etc.).....  Yes  No  
 If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

**X. Special instructions, precautions:** \_\_\_\_\_  
 \_\_\_\_\_

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

## **10.0 SPILL CONTAINMENT PROGRAM**

### **10.1 SCOPE AND APPLICATION**

It is not anticipated that bulk hazardous materials (over 55-gallons) will be generated or handled at any given time as part of this scope of work. It is also not anticipated that such spillage would constitute a danger to human health or the environment. However, as the job progresses, some potential may exist for accumulating Investigative Derived Wastes (IDW) such as decontamination fluids, soil cuttings, disposable sampling equipment and PPE.

### **10.2 POTENTIAL SPILL AREAS**

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

- Resource deployment
- Waste transfer
- Central staging

It is anticipated that the IDW generated as a result of this scope of work will be containerized, labeled, and staged to await further analyses. The results of these analyses will determine the method of disposal.

### **10.3 LEAK AND SPILL DETECTION**

To establish an early detection of potential spills or leaks, a periodic walk-around by the personnel staging or disposing of drums area will be conducted during working hours to visually determine that storage vessels are not leaking. If a leak is detected, the contents will be transferred, using a hand pump, into a new vessel. The leak will be collected and contained using absorbents such as Oil-Dry, vermiculite, or sand, which are stored at the vulnerable areas in a conspicuously marked drum. This used material, too, will be containerized for disposal pending analysis. Inspections will be documented in the project logbook.

### **10.4 PERSONNEL TRAINING AND SPILL PREVENTION**

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

## **10.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT**

The following represents the types of equipment that should be maintained at the staging areas for the purpose of supporting this Spill Prevention/Containment Program.

- Sand, clean fill, vermiculite, or other non combustible absorbent (Oil-dry)
- Drums (55-gallon U.S. DOT 1A1 or 1A2)
- Shovels, rakes, and brooms
- Container labels

## **10.6 SPILL CONTROL PLAN**

This section describes the procedures the TtNUS field crew members will employ upon the detection of a spill or leak.

1. Notify the SSO or FOL immediately upon detection of a leak or spill. Activate emergency alerting procedures for that area to remove non-essential personnel.
2. 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.
3. 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.
4. Re-containerize spills, including 2-inch of top cover impacted by the spill. Await test results for treatment or disposal options.

It is not anticipated that a spill will 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 discussed 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 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, manholes, sewers, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.

Additionally, a Permit-Required Confined Space must also have one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly caving walls or by a floor that 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 Field Operations Leader (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 chemicals brought on site, including decontamination solutions, fuels, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailer)
- Training/Medical Surveillance Documentation Form (Blank)
- First-Aid Supply Usage Form
- Emergency Reference Form (Section 2.0, extra copy for posting)
- Directions to the Hospital

### 12.1 MATERIALS TO BE POSTED 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.
- **MSDSs (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 should be conspicuously posted in places where notices to employees are normally posted, as directed by 29 CFR 1903.2 (a)(1). Each FOL shall ensure that this poster is not defaced, altered, or covered by other material. The law also states that reproductions or facsimiles of the poster shall be at least 8 1/2 by 14 inches with 10 point type.

- **Site Clearance (maintained)** - This list is found within the training section of the HASP (Figure 8-1). This list identifies all site personnel, dates of training (including site-specific training), and medical surveillance. The list 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.
- **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 of maintaining or posting this information, as stated above, is to allow site personnel quick access. Variations concerning location and methods of presentation are acceptable providing the objective is accomplished.

### 13.0 ACRONYMS / ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLEAN	Comprehensive Long-Term Environmental Action Navy
CSP	Certified Safety Professional
DRI	Direct Reading Instrument
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
IDW	Investigation Derived Waste
N/A	Not Available
NIOSH	National Institute for Occupational Safety and Health
NSB-NLON	Naval Submarine Base new London
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PEL	Permissible Exposure Limit
PHSO	Project Health and Safety Officer
PM	Project Manager
PPE	Personal Protective Equipment
SSO	Site Safety Officer
STEL	Short Term Exposure Limit
TBD	To be determined
TiNUS	Tetra Tech NUS, Inc.
TWA	Time Weighted Average
VOCs	Volatile Organic Compounds

# **ATTACHMENT I**

## **MEDICAL DATA SHEET**

## MEDICAL DATA SHEET

This Medical Data Sheet must be completed by on-site personnel and kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project \_\_\_\_\_

Name \_\_\_\_\_ Home Telephone \_\_\_\_\_

Address \_\_\_\_\_

Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_

Person to notify in the event of an emergency: Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Drug or other Allergies: \_\_\_\_\_

Particular Sensitivities : \_\_\_\_\_

Do You Wear Contacts? \_\_\_\_\_

What medications are you presently using? \_\_\_\_\_

Name, Address, and Phone Number of personal physician: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### **Note: Health Insurance Portability and Accountability Act (HIPAA) Requirements**

HIPAA took effect April 14, 2003. Loosely interpreted, HIPAA regulates the disclosure of Protected Health Information (PHI) by the entity collecting that information. PHI is any information about health status (such as that you may report on this Medical Data Sheet), provision of health care, or other information. HIPAA also requires TiNUS to ensure the confidentiality of PHI. This Act can affect the ability of the Medical Data Sheet to contain and convey information you would want a Doctor to know if you were incapacitated. So before you complete the Medical Data Sheet understand that this form will not be maintained in a secure location. It will be maintained in a file box or binder accessible to other members of the field crew so that they can accompany an injured party to the hospital.

DO NOT include information that you do not wish others to know, only information that may be pertinent in an emergency situation or treatment.

\_\_\_\_\_  
Name (Print clearly)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# **ATTACHMENT II**

## **INCIDENT REPORT FORM**



TETRA TECH, INC.

Safety Excellence

TETRA TECH, INC. INCIDENT REPORT

Report Date	Report Prepared By	Incident Report Number

INSTRUCTIONS:

All incidents (including those involving subcontractors under direct supervision of Tetra Tech personnel) must be documented on the IR Form.

Complete any additional parts to this form as indicated below for the type of incident selected.

TYPE OF INCIDENT (Check all that apply)	Additional Form(s) Required for this type of incident
Near Miss (No losses, but could have resulted in injury, illness, or damage)	<input type="checkbox"/> Complete IR Form Only
Injury or Illness	<input type="checkbox"/> Complete Form IR-A; Injury or Illness
Property or Equipment Damage, Fire, Spill or Release	<input type="checkbox"/> Complete Form IR-B; Damage, Fire, Spill or Release
Motor Vehicle	<input type="checkbox"/> Complete Form IR-C; Motor Vehicle

INFORMATION ABOUT THE INCIDENT

Description of Incident

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date of Incident	Time of Incident
	_____ AM <input type="checkbox"/> PM <input type="checkbox"/> OR Cannot be determined <input type="checkbox"/>

Weather conditions at the time of the incident	Was there adequate lighting?
	_____ Yes <input type="checkbox"/> No <input type="checkbox"/>

Location of Incident

\_\_\_\_\_

Was location of incident within the employer's work environment? Yes  No

Street Address	City, State, Zip Code and Country

Project Name	Client:

Tt Supervisor or Project Manager	Was supervisor on the scene?
	Yes <input type="checkbox"/> No <input type="checkbox"/>

WITNESS INFORMATION (attach additional sheets if necessary)

Name	Company

Street Address	City, State and Zip Code

Telephone Number(s)

\_\_\_\_\_



CORRECTIVE ACTIONS

Corrective action(s) immediately taken by unit reporting the incident:

Blank lines for reporting immediate corrective actions.

Corrective action(s) still to be taken (by whom and when):

Blank lines for reporting future corrective actions.

ROOT CAUSE ANALYSIS LEVEL REQUIRED

Root Cause Analysis Level Required: Level - 1 [ ] Level - 2 [ ] None [ ]

Root Cause Analysis Level Definitions

Table with 2 columns: Level and Definition. Level - 1 definition includes criteria like work related fatality and hospitalization. Level - 2 definition includes criteria like OSHA recordable lost time incident.

Complete the Root Cause Analysis Worksheet and Corrective Action form. Identify a corrective action(s) for each root cause identified within each area of inquiry.

NOTIFICATIONS

Table with 5 columns: Title, Printed Name, Signature, Telephone Number, Date. Rows include Project Manager or Supervisor, Site Safety Coordinator or Office H&S Representative, Operating Unit H&S Representative, and Other.

The signatures provided above indicate that appropriate personnel have been notified of the incident.

**INSTRUCTIONS:**

Complete all sections below for incidents involving injury or illness.  
Do NOT leave any blanks.  
Attach this form to the IR FORM completed for this incident.

Incident Report Number: (From the IR Form)

**EMPLOYEE INFORMATION**

Company Affiliation

Tetra Tech Employee?  TetraTech subcontractor employee (directly supervised by Tt personnel)?

Full Name

Company (if not Tt employee)

Street Address, City, State and Zip Code

Address Type

Home address (for Tt employees)

Business address (for subcontractors)

Telephone Numbers

Work: \_\_\_\_\_

Home: \_\_\_\_\_

Cell: \_\_\_\_\_

Occupation (regular job title)

Department

Was the individual performing regular job duties?

Yes  No

Time individual began work

\_\_\_\_\_ AM  PM  OR Cannot be determined

Safety equipment

Provided? Yes  No

Type(s) provided:  Hard hat  Protective clothing

Used? Yes  No  If no, explain why

Gloves  High visibility vest

Eye protection  Fall protection

Safety shoes  Machine guarding

Respirator  Other (list)

**NOTIFICATIONS**

Name of Tt employee to whom the injury or illness was first reported

Was H&S notified within one hour of injury or illness?

Yes  No

Date of report

H&S Personnel Notified

Time of report

Time of Report

If subcontractor injury, did subcontractor's firm perform their own incident investigation?

Yes  No  If yes, request a copy of their completed investigation form/report and attach it to this report.

## INJURY / ILLNESS DETAILS

**What was the individual doing just before the incident occurred?** Describe the activity as well as the tools, equipment, or material the individual was using. Be specific. Examples: "Climbing a ladder while carrying roofing materials"; "Spraying chlorine from a hand sprayer"; "Daily computer key-entry"

---



---



---

**What Happened?** Describe how the injury occurred. Examples: "When ladder slipped on wet floor and worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time"

---



---



---

**Describe the object or substance that directly harmed the individual:** Examples: "Concrete floor"; "Chlorine"; "Radial Arm Saw". If this question does not apply to the incident, write "Not Applicable"

---



---

## MEDICAL CARE PROVIDED

Was first aid provided at the site: Yes  No  If yes, describe the type of first aid administered and by whom?

---

Was treatment provided away from the site: Yes  No  If yes, provide the information below.

Name of physician or health care professional

Facility Name

Street Address, City State and Zip Code

Type of Care?

---



---

Was individual treated in emergency room? Yes  No

Was individual hospitalized overnight as an in-patient? Yes  No

Telephone Number

Did the individual die? Yes  No  If yes, date: \_\_\_\_\_

Will a worker's compensation claim be filed? Yes  No

**NOTE:** Attach any police reports or related diagrams to this report.

## SIGNATURES

I have reviewed this report and agree that all the supplied information is accurate

Affected individual  
(print)

Affected individual (signature)

Telephone Number

Date

---



---



---



---

This form contains information relating to employee health and must be used in a manner that protects the confidentiality of the employee to the extent possible while the information is being used for occupational safety and health purposes.

**INSTRUCTIONS:**

Complete all sections below for incidents involving property/equipment damage, fire, spill or release.  
Do NOT leave any blanks.  
Attach this form to the IR FORM completed for this incident.

Incident Report Number: (From the IR Form) \_\_\_\_\_

**TYPE OF INCIDENT (Check all that apply)**

Property Damage       Equipment Damage       Fire or Explosion       Spill or Release

**INCIDENT DETAILS**

Results of Incident: Fully describe damages, losses, etc.

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

Response Actions Taken:

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

Responding Agency(s) (i.e. police, fire department, etc.)

Agency(s) Contact Name(s)

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

**DAMAGED ITEMS (List all damaged items, extent of damage and estimated repair cost)**

Item:	Extent of damage:	Estimated repair cost

**SPILLS / RELEASES (Provide information for spilled/released materials)**

Substance	Estimated quantity and duration	Specify Reportable Quantity (RQ)

Exceeded? Yes  No  NA

**FIRES / EXPLOSIONS (Provide information related to fires/explosions)**

Fire fighting equipment used? Yes  No  If yes, type of equipment: \_\_\_\_\_

**NOTIFICATIONS**

Required notifications	Name of person notified	By whom	Date / Time
Client: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			
Agency: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			
Other: _____ Yes <input type="checkbox"/> No <input type="checkbox"/>			

Who is responsible for reporting incident to outside agency(s)? Tt  Client  Other  Name: \_\_\_\_\_

Was an additional written report on this incident generated? Yes  No  If yes, place in project file.

### INSTRUCTIONS:

Complete all sections below for incidents involving motor vehicle accidents. Do NOT leave any blanks.  
Attach this form to the IR FORM completed for this incident.

Incident Report Number: (From the IR Form)			
<b>INCIDENT DETAILS</b>			
Name of road, street, highway or location where accident occurred		Name of intersecting road, street or highway if applicable	
County	City	State	
Did police respond to the accident?		Did ambulance respond to the accident?	
Yes <input type="checkbox"/> No <input type="checkbox"/>		Yes <input type="checkbox"/> No <input type="checkbox"/>	
Name and location of responding police department		Ambulance company name and location	
Officer's name/badge #			
Did police complete an incident report? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, police report number: _____ Request a copy of completed investigation report and attach to this form.			
<b>VEHICLE INFORMATION</b>			
How many vehicles were involved in the accident? _____ (Attach additional sheets as applicable for accidents involving more than 2 vehicles.)			
Vehicle Number 1 – Tetra Tech Vehicle		Vehicle Number 2 – Other Vehicle	
Vehicle Owner / Contact Information		Vehicle Owner / Contact Information	
Color		Color	
Make		Make	
Model		Model	
Year		Year	
License Plate #		License Plate #	
Identification #		Identification #	
Describe damage to vehicle number 1		Describe damage to vehicle number 2	
Insurance Company Name and Address		Insurance Company Name and Address	
Agent Name		Agent Name	
Agent Phone No.		Agent Phone No.	
Policy Number		Policy Number	

### DRIVER INFORMATION

Vehicle Number 1 – Tetra Tech Vehicle		Vehicle Number 2 – Other Vehicle	
Driver's Name		Driver's Name	
Driver's Address		Driver's Address	
Phone Number		Phone Number	
Date of Birth		Date of Birth	
Driver's License #		Driver's License #	
Licensing State		Licensing State	
Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>	Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>
Was traffic citation issued to Tetra Tech driver? Yes <input type="checkbox"/> No <input type="checkbox"/>		Was traffic citation issued to driver of other vehicle? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Citation #		Citation #	
Citation Description		Citation Description	

### PASSENGERS IN VEHICLES (NON-INJURED)

List all non-injured passengers (excluding driver) in each vehicle.  
 Driver information is captured in the preceding section.  
 Information related to persons injured in the accident (non-Tt employees) is captured in the section below on this form.  
 Injured Tt employee information is captured on FORM IR-A

Vehicle Number 1 – Tetra Tech Vehicle		Vehicle Number 2 – Other Vehicle	
How many passengers (excluding driver) in the vehicle? ____		How many passengers (excluding driver) in the vehicle? ____	
Non-Injured Passenger Name and Address		Non-Injured Passenger Name and Address	
Non-Injured Passenger Name and Address		Non-Injured Passenger Name and Address	
Non-Injured Passenger Name and Address		Non-Injured Passenger Name and Address	

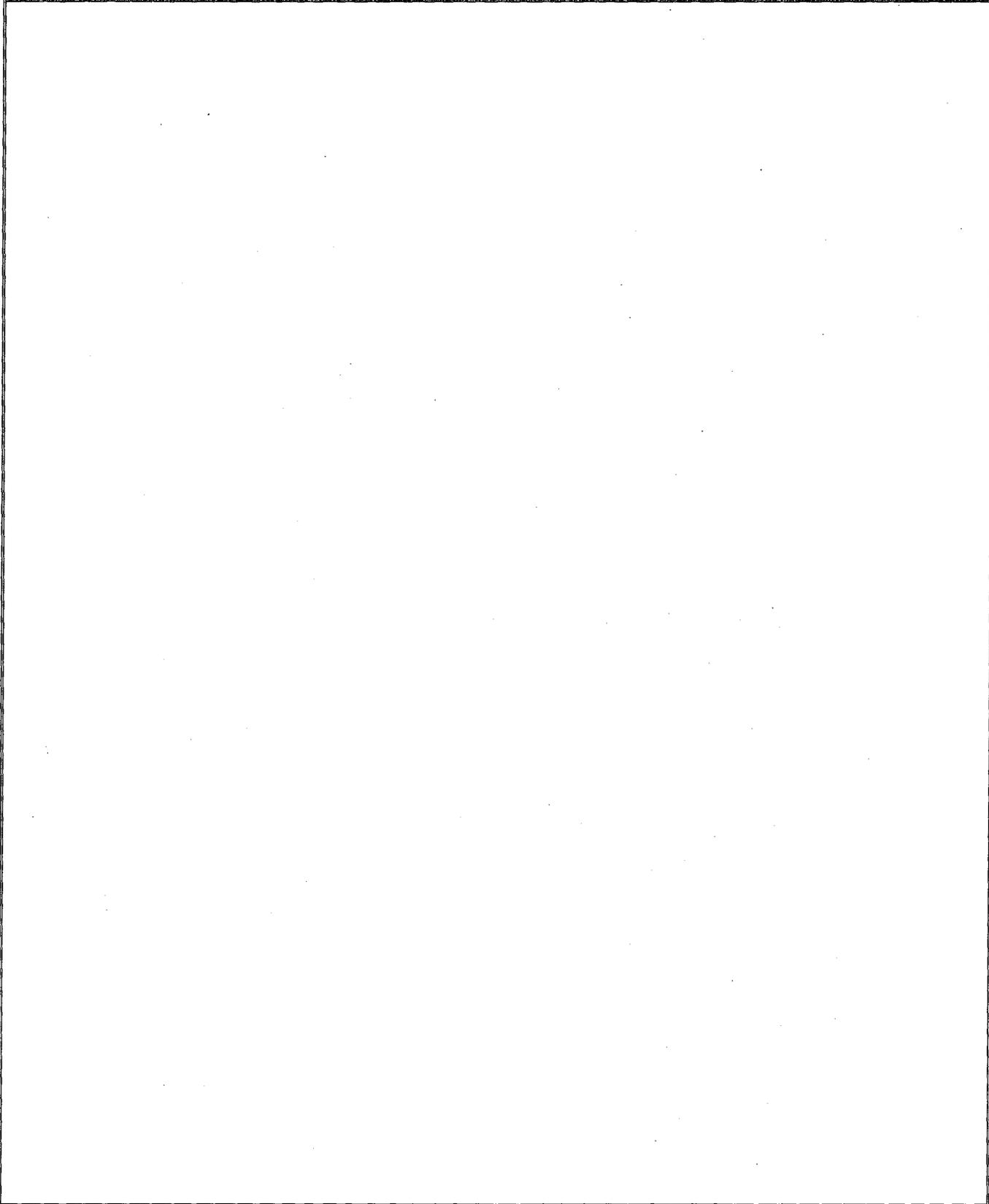
### INJURIES TO NON-TETRATECH EMPLOYEES

Name of injured person 1				Address of injured person 1		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>
Name of injured person 2				Address of injured person 2		
Age	Gender	Car No.	Location in Car	Seat Belt Used?	Ejected from car?	Injury or Fatality?
	Male <input type="checkbox"/> Female <input type="checkbox"/>			Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Injured <input type="checkbox"/> Died <input type="checkbox"/>

### OTHER PROPERTY DAMAGE

Describe damage to property other than motor vehicles	
Property Owner's Name	Property Owner's Address

**COMPLETE AND SUBMIT DIAGRAM DEPICTING WHAT HAPPENED**



**ATTACHMENT III**

**SAFE WORK PERMITS**

**SAFE WORK PERMIT  
MOBILIZATION/DEMOBILIZATION ACTIVITIES  
NAVAL SUBMARINE BASE NEW LONDON  
GROTON, CONNECTICUT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

**I. Work limited to the following (description, area, equipment used):** Mobilization and demobilization activities such as unpacking/packing, staging equipment and supplies.

**II. Primary Hazards:** Lifting; pinches and compressions; vehicular and foot traffic; slips/trips/falls, and ambient temperature extremes; insect/animal bites and stings; poisonous plants; and inclement weather

**III. Field Crew:** \_\_\_\_\_

**IV. On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**V. Protective equipment required**

Level D  Level B   
 Level C  Level A

Modifications/Exceptions: \_\_\_\_\_

**Respiratory equipment required**

Yes  Specify on the reverse  
 No

<b>VI. Chemicals of Concern</b>	<b>Hazard Monitoring</b>	<b>Action Level(s)</b>	<b>Response Measures</b>
<u>None anticipated</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
_____	_____	_____	_____

**Primary Route(s) of Exposure/Hazard:** \_\_\_\_\_

**(Note to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)**

**VII. Additional Safety Equipment/Procedures**

Hard-hat ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hearing Protection (Plugs/Muffs) ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Safety Glasses ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Safety belt/harness ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Chemical/splash goggles ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Radio/Cellular Phone ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash Shield ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Barricades ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Splash suits/coveralls ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gloves (Type – leather/cotton) ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Work/rest regimen ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe work shoes/boots ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
High Visibility vest ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Tape up/use insect repellent ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fire Extinguisher ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
Safety Shower/Eyewash ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other ..... <input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: PPE selection is at the discretion of the SSO and is dependent upon tasks being performed. In general, site activities require the use of basic safety equipment (field clothing and steel-toe footwear). Work gloves (cotton or leather) will be used when necessary to protect against cut or abrasions. Tape-up and use insect repellent in high grass, brush, or wooded areas.

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**IX. Additional Permits required (Hot work, confined space entry, excavation etc.)** .....  Yes  No  
*If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

**X. Special instructions, precautions:** Site contaminants are unlikely to be encountered during this site activity. Material Safety Data Sheets (MSDS) will be provided for all chemicals used on site (sample preservatives, decon solutions, fuels, etc.). Refer to MSDS for additional guidance including use of PPE and safe handling procedures. Obtain assistance when handling heavy equipment (sample coolers, instrument cases, sampling equipment, etc.). Follow manufacturer's recommendations for insect repellent application/re-application.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT  
SEDIMENT SAMPLING  
NAVAL SUBMARINE BASE NEW LONDON  
GROTON, CONNECTICUT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

- I. **Work limited to the following (description, area, equipment used):** Collection of sediment samples
- II. **Primary Hazards:** contact with contaminants; transfer of contamination; lifting; slip/trips/falls; ambient temperature extremes; vehicular and foot traffic; insect/animal bites and stings, poisonous plants, inclement weather.
- III. **Field Crew:** \_\_\_\_\_
- IV. **On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

- V. **Protective equipment required** **Respiratory equipment required**
- Level D  Level B  Yes  Specify on the reverse  
Level C  Level A  No
- Modifications/Exceptions: \_\_\_\_\_

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>Metals</u>	<u>Particular monitor and visible dust</u>	<u>Any sustained reading above 0.5 mg/m<sup>3</sup> in breathing zone</u> <u>Visible dust cloud</u>	<u>Evacuate area and resume when levels return to background</u>

**Primary Route(s) of Exposure/Hazard:** inhalation, direct contact, ingestion

(Note to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

**VII. Additional Safety Equipment/Procedures**

- |  |  |
|--|--|
| Hard-hat ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                   | Hearing Protection (Plugs/Muffs) ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Safety glasses ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No             | Safety belt/harness ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                         |
| Chemical/splash goggles ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    | Radio/Cellular Phone ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                        |
| Splash Shield ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No              | Barricades ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                       |
| Splash suits/coveralls ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                | Gloves (Type – Nitrile)..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No           |
| Impermeable apron ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          | Work/rest regimen ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                |
| Steel toe work shoes/boots ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical resistant boot covers ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |
| High Visibility vest ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                  | Tape up/use insect repellent ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                |
| First Aid Kit ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No              | Fire Extinguisher ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                           |
| Safety Shower/Eyewash ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      | Other ..... <input type="checkbox"/> Yes <input type="checkbox"/> No                                       |
- Modifications/Exceptions: Other PPE at SSO's discretion based on observed hazards (high visibility reflective vests, etc.). Tape-up and use insect repellent in high grass, brush, or wooded areas.

**VIII. Site Preparation**

- |   | Yes                      | No                       | NA                                  |
|---|--------------------------|--------------------------|-------------------------------------|
| Utility Locating and Excavation Clearance completed.....                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| Physical Hazards Identified and Isolated (Splash and containment barriers).....             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc.) .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

- IX. **Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No  
*If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

- X. **Special instructions, precautions:** Use of safe working practices and PPE will prevent potential contact/exposure to site contaminants. Obtain assistance when handling heavy equipment (sample coolers, instrument cases, sampling equipment, etc.). Follow manufacturer's recommendations for insect repellent application/re-application.

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

**SAFE WORK PRACTICES  
SAMPLING EQUIPMENT DECONTAMINATION  
NAVAL SUBMARINE BASE NEW LONDON  
GROTON, CONNECTICUT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

I. **Work limited to the following (description, area, equipment used):** Decontamination of sampling equipment used during sediment sampling tasks. This will be accomplished using buckets, brushes, etc.

II. **Primary Hazards:** decontamination fluids; ambient temperature extremes, slips, trips and falls; inclement weather

III. **Field Crew:** \_\_\_\_\_

IV. **On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

V. **Protective equipment required**

Level D  Level B

Level C  Level A

Modifications/Exceptions: \_\_\_\_\_

**Respiratory equipment required**

Yes  Specify on the reverse

No

VI. **Chemicals of Concern**

Decon fluids

**Hazard Monitoring**

refer to MSDS

**Action Level(s)**

refer to MSDS

**Response Measures**

refer to MSDS

**Primary Route(s) of Exposure/Hazard:** direct contact, inhalation, ingestion

(Note to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

VII. **Additional Safety Equipment/Procedures**

Hard-hat .....  Yes  No

Safety Glasses .....  Yes  No

Chemical/splash goggles .....  Yes  No

Splash Shield .....  Yes  No

Splash suits/coveralls.....  Yes  No

Impermeable apron .....  Yes  No

Steel toe work shoes/boots .....  Yes  No

High Visibility vest .....  Yes  No

First Aid Kit.....  Yes  No

Safety Shower/Eyewash .....  Yes  No

Hearing Protection (Plugs/Muffs) .....  Yes  No

Safety belt/harness .....  Yes  No

Radio/Cellular Phone .....  Yes  No

Barricades.....  Yes  No

Gloves (Type – Nitrile).....  Yes  No

Work/rest regimen.....  Yes  No

Chemical Resistant Boot Covers.....  Yes  No

Tape up/use insect repellent .....  Yes  No

Fire Extinguisher .....  Yes  No

Other .....  Yes  No

Modifications/Exceptions: Splash shield, coveralls, aprons, boot covers at SSO's discretion

VIII. **Site Preparation**

Utility Locating and Excavation Clearance completed.....  Yes  No  NA

Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place .....  Yes  No  NA

Physical Hazards Identified and Isolated (Splash and containment barriers).....  Yes  No  NA

Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc.) .....  Yes  No  NA

IX. **Additional Permits required** (Hot work, confined space entry, excavation etc.) .....  Yes  No

*If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

X. **Special instructions, precautions:** Significant concentrations of potential site contaminants are unlikely to be encountered during this site activity. Use of safe working practices and PPE will prevent potential contact/exposure to site contaminants. If any decon solvents are used (e.g., isopropanol), obtain and follow directions/precautions on MSDS.

Permit Issued by: \_\_\_\_\_

Permit Accepted by: \_\_\_\_\_

**SAFE WORK PERMIT  
IDW MANAGEMENT ACTIVITIES  
NAVAL SUBMARINE BASE NEW LONDON  
GROTON, CONNECTICUT**

Permit No. \_\_\_\_\_ Date: \_\_\_\_\_ Time: From \_\_\_\_\_ to \_\_\_\_\_

I. **Work limited to the following (description, area, equipment used):** IDW management activities.

II. **Primary Hazards:** Site contaminants; lifting; loading bulk transport containers; inclement weather and insect/animal bites or stings, poisonous plants, etc.

III. **Field Crew:** \_\_\_\_\_

IV. **On-site Inspection conducted**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS  
**Equipment Inspection required**  Yes  No Initials of Inspector \_\_\_\_\_ TtNUS

V. **Protective equipment required** **Respiratory equipment required**  
 Level D  Level B  Yes  Specify on the reverse  
 Level C  Level A  No

Modifications/Exceptions: \_\_\_\_\_

<b>VI. Chemicals of Concern</b>	<b>Hazard Monitoring</b>	<b>Action Level(s)</b>	<b>Response Measures</b>
<u>Metals</u>	<u>Particular monitor and visible dust</u>	<u>Any sustained reading above 0.5 mg/m<sup>3</sup> in breathing zone</u> <u>Visible dust cloud</u>	<u>Evacuate area and resume when levels return to background</u>

**Primary Route(s) of Exposure/Hazard:** inhalation, ingestion, direct contact

(Note to FOL and/or SHSO: Each item in Sections VII, VIII, and IX must be checked Yes, No, or NA)

**VII. Additional Safety Equipment/Procedures**

Hard-hat ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Safety Glasses ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Chemical/splash goggles ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Splash Shield ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Splash suits/coveralls ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Impermeable apron ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Steel toe work shoes/boots ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No High Visibility vest ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No First Aid Kit ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Safety Shower/Eyewash ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs) ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Safety belt/harness ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Radio/Cellular Phone ..... <input type="checkbox"/> Yes <input type="checkbox"/> No Barricades ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Gloves (Type – leather or cotton).... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Work/rest regimen ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Chemical Resistant Boot Covers ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Tape up/use insect repellent ..... <input type="checkbox"/> Yes <input type="checkbox"/> No Fire Extinguisher ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Other ..... <input type="checkbox"/> Yes <input type="checkbox"/> No
---	--

Modifications/Exceptions: Other PPE as necessary based on observed hazards (chemical resistant coveralls, etc).

**VIII. Site Preparation**

	Yes	No	NA
Utility Locating and Excavation Clearance completed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Hazards Identified and Isolated (Splash and containment barriers).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc) .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IX. **Additional Permits required (Hot work, confined space entry, excavation etc.)**.....  Yes  No  
*If yes, SHSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090*

X. **Special instructions, precautions:** Use of safe working practices and PPE will prevent potential contact/exposure to site contaminants. Obtain assistance or use material handling when handling heavy equipment (sample coolers, instrument cases, sampling equipment, etc.).

Permit Issued by: \_\_\_\_\_ Permit Accepted by: \_\_\_\_\_

# **ATTACHMENT IV**

## **OSHA POSTER**

# Job Safety and Health It's the law!



Occupational Safety  
and Health Administration  
U.S. Department of Labor

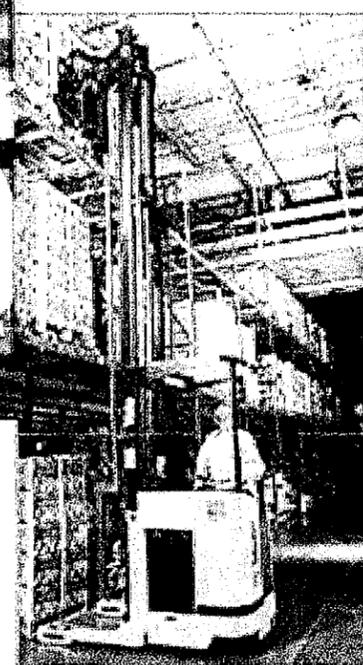
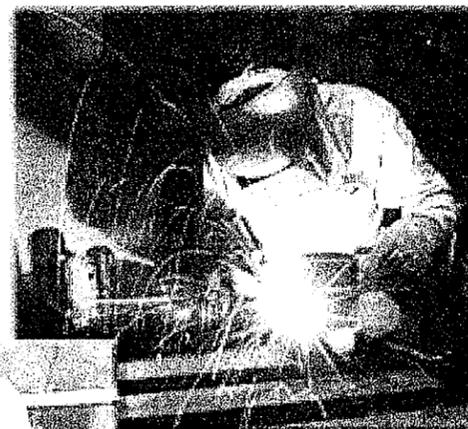
## EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the *OSH Act* that apply to your own actions and conduct on the job.

## EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.

This free poster available from OSHA –  
*The Best Resource for Safety and Health*



Free assistance in identifying and correcting hazards or complying with standards is available to employers, without citation or penalty, through OSHA-supported consultation programs in each state.

**1-800-321-OSHA**  
[www.osha.gov](http://www.osha.gov)

OSHA 3165-12-06R