

Health and Safety Plan
for
Pre-Design Groundwater Investigation
at
Site 6A – Fuel Calibration Area
Site 10B – Engine Test House
and, Southern Area

**Naval Weapons Industrial
Reserve Plant**
Calverton, New York



Engineering Field Activity Northeast
Naval Facilities Engineering Command
Contract No. N62472-04-D-0055
Contract Task Orders 449

January 2008

**HEALTH AND SAFETY PLAN
FOR
PRE-DESIGN GROUNDWATER INVESTIGATION
AT
SITE 6A – FUEL CALIBRATION AREA
SITE 10B – ENGINE TEST HOUSE
AND, SOUTHERN AREA**

**NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK**

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

**Submitted to:
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**Contract No. N62472-04-D-0055
Contract Task Orders 449**

January 2008

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1.0 INTRODUCTION

The objective of this Health and Safety Plan (HASP) is to provide the minimum safety practices and procedures for Tetra Tech NUS, Inc. (TtNUS) and subcontractor personnel engaged in proposed site activities to be conducted at Site 1 Northeast Pond Disposal Area, Site 6A – Fuel Calibration Area and Southern Area Supplemental Investigation for the Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, New York.

In order to accomplish the objective, this HASP has been constructed using the latest available information regarding known or suspected chemical contaminants and potential and foreseeable physical hazards associated with the proposed work at the sites identified at NWIRP Calverton. This HASP has been designed to be used in accordance with the TtNUS Health and Safety Guidance Manual. The Guidance Manual provides detailed information pertaining to procedures to be performed on site as directed by the HASP, as well as TtNUS standard operating procedures. Both the HASP and the Health and Safety Guidance Manual must be present at the site to comply with the requirements stipulated in the Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.120.

This HASP has been written to support proposed tasks and techniques associated with the scope of work as presented in Section 4.0. 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 CLEAN Health and Safety Manager (HSM) and the Project Manager (PM). The PM will notify the affected personnel of the changes.

The elements of this HASP are in compliance with the requirements established by OSHA 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response" (HAZWOPER) and sections of 29 CFR 1926, "Safety and Health Regulations for Construction."

1.1 AUTHORITY

This Contract Task Order (CTO) 449 and the requirements set forth represent an integral part of an overall effort conducted under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the Engineering Field Activity Northeast Naval Facilities Engineering Command, as defined under Contract No. N62472-04-D-0055.

1.2 KEY PROJECT PERSONNEL AND ORGANIZATION

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

- The TtNUS PM is responsible for the overall direction and implementation of health and safety for this project.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of this HASP with the assistance of an appointed Site Safety Officer (SSO). The FOL manages field activities, executes the work plan, and enforces safety procedures, as applicable to the work plan.

The TtNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed SSO. The FOL manages field activities, executes the work plan, and enforces safety procedures as applicable to the work plan.

- The SSO supports site activities by advising the FOL on the aspects of health and safety on site. These duties may include:
 - i. Coordinates the health and safety activities with the FOL.
 - ii. Selects, applies, inspects, and maintains personal protective equipment.
 - iii. Establishes work zones and control points in areas of operation.
 - iv. Implements air monitoring program for onsite activities.
 - v. Verifies training and medical clearance of onsite personnel status in relation to site activities.
 - vi. Implements Hazard Communication, Respiratory Protection Programs, and other associated health and safety programs as they may apply to site activities.
 - vii. Coordinates emergency services.
 - viii. Provides site-specific training for the onsite personnel.
 - ix. Investigates accidents and injuries (Attachment I – Incident Report Form)
 - x. Provides input to the PHSO regarding the need to modify, this HASP, or applicable health and safety associated documents as per site-specific requirements.
- Compliance with these requirements is monitored by the Project Health and Safety Officer (PHSO) and is coordinated through the Health and Safety Manager.

1.3 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: NWIRP Calverton Address: Suffolk County, New York
Remedial Project Manager: Susan Clarke Phone Number: (757) 444-4114
Site Contact: Al Taormina Phone Number: (516) 346-0344 (Office)
(516) 702-5861 (Cell Phone)

Purpose of Site Visit: This activity is divided into a multi-task operation (see Section 4.0), including soil boring (drilling), monitoring well installation, multi-media sampling, and other related activities.

Proposed Dates of Work: January 2008 until project completion

Project Team:

TtNUS Personnel:	Discipline/Tasks Assigned:
<u>David D. Brayack, P.E.</u>	<u>Project Manager (PM)</u>
<u>Vincent Shickora</u>	<u>Field Operations Leader (FOL)</u>
<u>Matthew M. Soltis, CIH, CSP</u>	<u>CLEAN Health and Safety Manager (HSM)</u>
<u>James K. Laffey</u>	<u>Project Health and Safety Officer (PHSO)</u>
<u>TBD</u>	<u>Site Safety Officer (SSO)</u>

Non-TtNUS Personnel

	Affiliation/Discipline/Tasks Assigned
<u>TBD</u>	<u>Drilling Subcontractor(s)</u>

Prepared By: James K. Laffey

TBD - To be determined

2.0 EMERGENCY ACTION PLAN

2.1 INTRODUCTION

This section is part of a planning effort to direct and guide field personnel in the event of an emergency. In the event of onsite emergencies that cannot be handled by onsite personnel, they will be evacuated to a safe place of refuge, and the appropriate emergency response agencies will be notified. Because a majority of potential emergency situations will require assistance from outside emergency responders, TtNUS and subcontractor personnel will not provide emergency response support for significant emergency events beyond responding to easily controlled minor incidents. The emergency response agencies listed in this plan are capable of providing the most effective response and are designated as the primary responders. These agencies are located within a reasonable distance from the area of operations, a factor that ensures adequate emergency response time. This emergency action plan conforms to the requirements of OSHA Standard 29 CFR 1910.38(a), as allowed in OSHA 29 CFR 1910.120(I)(1)(ii).

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

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

2.2 EMERGENCY PLANNING

Through the initial hazard/risk assessment effort, it is anticipated that emergencies resulting from chemical, physical, or fire hazards are unlikely given the nature of site activities.

Nonetheless, to minimize and eliminate the potential for any emergency situations, emergency planning activities will include the following (which are the responsibility of the FOL):

- Coordinating with local Emergency Response personnel to ensure that TtNUS emergency action activities are compatible with existing emergency response procedures. Base Fire Protection and Emergency Services will be notified of scheduled events and activities. This is most imperative in situations where their services may be required such as confined space entry.

- 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 see Attachment II).
 - 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. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with site contaminants. Tasks to be performed at the site, potential hazards associated with those tasks and the recommended control methods are discussed in detail in Sections 4.0, 5.0 and 6.0. Additionally, early recognition of hazards will be supported by periodic site surveys to identify any situation predisposed to an emergency. The FOL will be responsible for performing surveys of work areas prior to initiating site operations and periodically while operations are being conducted. Survey findings will be documented by the FOL in the site 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 initiate necessary control measures. However, if the FOL determines 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 this HASP, the Health and Safety Guidance Manual, and applicable OSHA regulations. Periodic site surveys of work areas and correction of any identified deficiencies prior to the commencement of that day's activities by the FOL 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; 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 FOL and will be conveyed to personnel as part of the pre-activities briefing session. This information will be reiterated during daily safety meetings and indicated on the Safe Work Permits. 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 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 FOL 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 and away from water bodies.

2.5 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES

TtNUS personnel will likely be working in close proximity to each other during planned site activities. Site personnel will initiate emergency notification to onsite personnel by voice commands, hand signals, vehicle horns, or line of site communication to alert site personnel of an emergency. When project tasks are performed simultaneously on different sites, radios will be used to communicate emergency situations and request assistance. The Fire Department will provide rescue services, if needed.

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

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

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

- When working within the site Call 911 and report the emergency. Any personnel initiating emergency notification procedures shall provide the following information:
 - Your name and company
 - The exact location of the emergency
 - A brief description of what has occurred
 - The number of personnel involved
 - The type of injuries, or assistance that is needed
- Stay on the phone and follow the instructions given by the operator.
- Send one person to the entrance/gate to meet the arriving emergency services.
- Escort the arriving emergency services to the scene of the incident.

- At the earliest possible convenience notify the PM and Al Taormina (On-site Navy Contact) regarding the incident.

2.6 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.

**TABLE 2-1
EMERGENCY CONTACTS
NWIRP CALVERTON**

AGENCY	TELEPHONE
EMERGENCY (Police, Fire, and Ambulance Services)	911
Riverhead Police	(631) 727-4500
Manorville Fire Department (Emergency) (Business)	(631) 924-5252 (631) 868-6614
Peconic Bay Medical Center Riverhead	(631) 548-6000
US Navy Onsite Contact, Al Taormina	(516) 346-0344 (Office) (516) 702-5861 (Cell Phone)
Al Curcie	(516) 702-5843 (Cell Phone)
Poison Control	(800) 222-1222
Chemtrec	(800) 424-9300
National Response Center	(800) 424-8802
Tetra Tech NUS, Pittsburgh Office	(412) 921-7090
Project Manager David D. Brayack, P.E.	(757) 461-3824
CLEAN Health and Safety Manager Matthew M. Soltis, CIH, CSP	(412) 921-8912
Project Health & Safety Officer James K. Laffey	(412) 921-8678
Navy Remedial Project Manager (RPM) Susan Clarke	(757) 444-4114

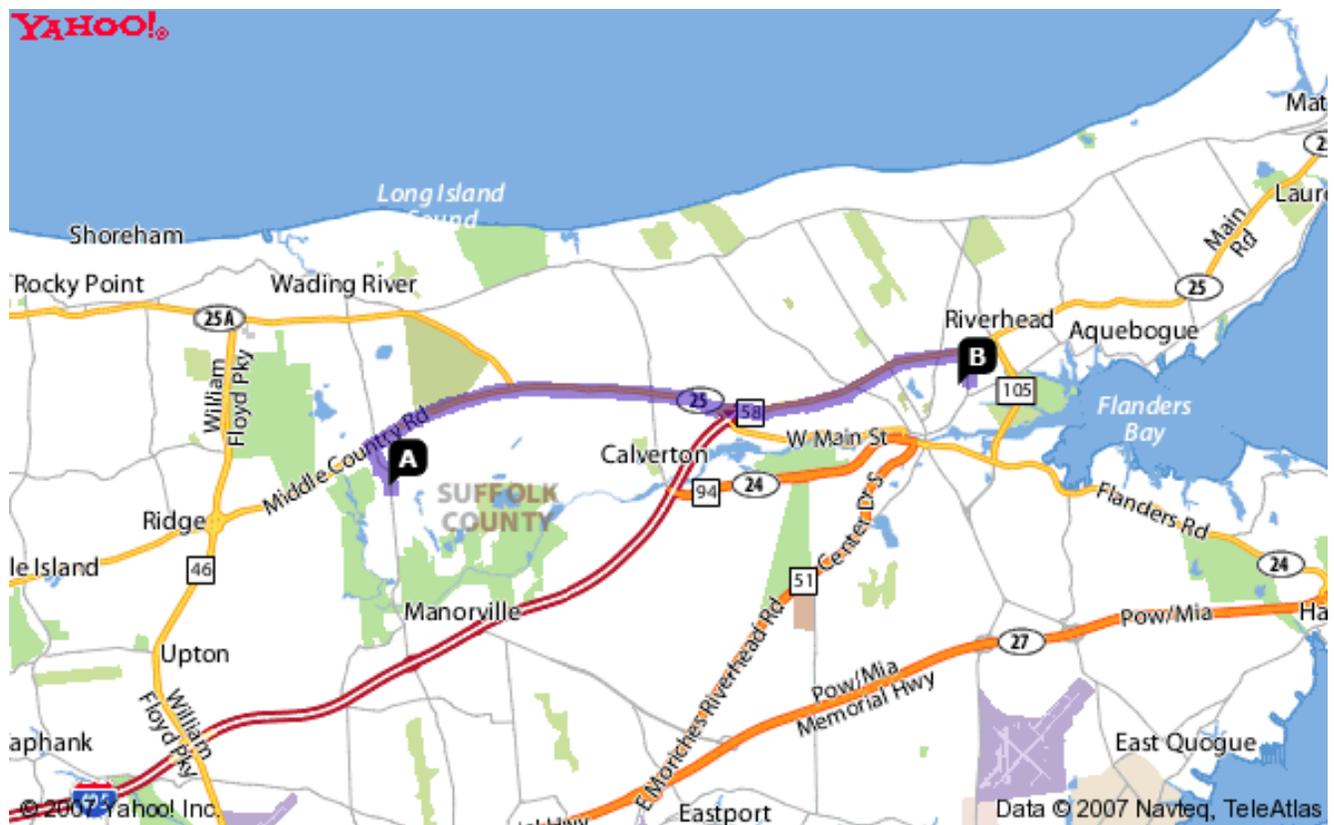
2.7 EMERGENCY ROUTE TO HOSPITAL

Peconic Bay Medical Center
1300 Roanoke Avenue
Riverhead, New York 11901

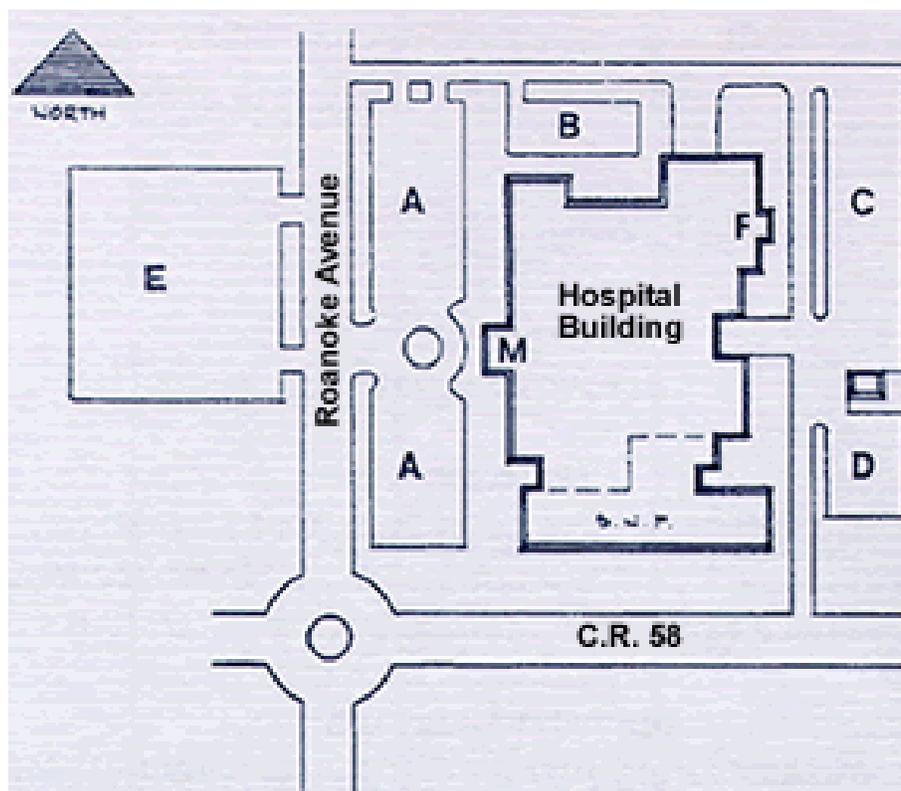
Directions to the Peconic Bay Medical Center:

Proceed to the north gate and turn right traveling east on Route 25 (Middle County Road). Route 25 turns into Route 58. Proceed to traffic circle. The hospital is on the left and is approximately 10 minutes away from the site.

FIGURE 2-1
ROUTE TO PECONIC BAY MEDICAL CENTER



HOSPITAL PARKING MAP



A = Visitor Parking

B = Physician Parking

C = Emergency Room/Outpatient Parking

D = Skilled Nursing Facility Parking

E = Employee Parking

M = Main Entrance

F = Entrance for Emergency Department, Outpatient Laboratory and Outpatient Radiology

2.8 DECONTAMINATION PROCEDURES/EMERGENCY MEDICAL TREATMENT

During site evacuation, decontamination procedures will be performed only if doing so does not further jeopardize the welfare of site workers. Decontamination will be postponed 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.

TtNUS personnel will perform removal of personnel from emergency situations and may provide initial medical support for injury/illnesses requiring only first-aid level support. Medical attention above that level will require assistance and support from the designated emergency response agencies. If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-2.

2.9 INJURY/ILLNESS REPORTING

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical service personnel. This information is listed on Medical Data Sheets filed onsite (see Attachment II). As soon as possible, Navy contact Jim Colter must be informed of any incident or accident that requires medical attention.

FIGURE 2-2 POTENTIAL RESPONSE PROTOCOL

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

In the event of a personnel injury or accident:

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

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

WorkCare will compile the results of the 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

Tearing

Headache

Cough

Shortness of Breath

Chest Tightness / Pressure

Nausea / Vomiting

Dizziness

Weakness

Delayed Symptoms:

Weakness

Nausea / Vomiting

Shortness of Breath

Cough

Loss of Appetite

Abdominal Pain

Headache

Numbness / Tingling

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

Burning of eyes, nose, or throat

Tearing

Headache

Cough

Shortness of Breath

Chest Tightness / Pressure

Cyanosis

Nausea / Vomiting

Dizziness

Weakness

Loss of Appetite

Abdominal Pain

Numbness / Tingling

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

Improved: _____ Worsened: _____ Remained Unchanged: _____

V. Treatment of Symptoms (check off appropriate response)

None: _____ Self-Medicated: _____ Physician Treated: _____

3.0 SITE BACKGROUND

The Navy's Calverton facility is located in Suffolk County on Long Island, approximately 70 miles east of New York City. Formerly engaged in the manufacture of aircraft parts and subassemblies, the property known as NWIRP Calverton, New York was a Government-Owned Contractor-Operated (GOCO) installation leased by the Navy to the Northrop Grumman Corporation (NGC) until 1996. Since that time, the property contained within the perimeter fence, with the exception of three noncontiguous parcels of land totaling approximately 209 acres that are being retained by the Navy to continue IR program activities, have been conveyed to the Town of Riverhead. There are currently no operational activities being conducted on the Navy's 209 acres. There are no longer any process-type operations being conducted at the Calverton facility that could generate hazardous waste nor are there any requirements for storage of hazardous materials on the Navy's property. Similarly, there will be no hazardous materials brought onto the Calverton property to be used as part of any process-type operations.

3.1 SITE 6A-FUEL CALIBRATION AREA

Site 6A is located in Parcel B1 near the south-central portion of the former NWIRP Calverton facility, approximately 2,000 feet north of River Road and 2,000 feet west of the southern gate. Site 6A and related facilities were used in the testing of aircraft fuel and engine systems, which may have resulted in frequent, small fuel spills to the area's pavement. Minor maintenance and repairs to the fuel and engine systems were also conducted at the site, and solvents were used during these activities and were likely spilled during their use.

Site 6A consists of new and old fuel calibration pads. The old fuel calibration pad was located in what is now an open, grass-covered field in an area now partially covered by a wastewater treatment facility. No physical evidence exists of the old calibration area. The new fuel calibration pad is located north and east of the old calibration pad on a concrete apron. The concrete apron between the two fuel calibration pads was also used for the same activities. A shed, piping and fuel-filtering devices were located in the area in the 1980s. The equipment was likely removed in the 1980's.

A former underground storage tank (UST) was located south of Building 231. It was removed in the early 1990s by Northrop Grumman.

3.2 SITE 10B – ENGINE TEST HOUSE

Site 10B is located approximately 1,000 feet south of Site 6A in Parcel B1. The area consists of a building, surrounding pad, sparse woods, and open grassy areas. A drainage swale and culvert from Site 6A runs adjacent to and hydraulically up gradient of Site 10B. Groundwater from Site 6A can enter this

swale and flow past Site 10B. Also, from the late 1980s to the early 1990s, groundwater from Site 6A was discharged into this drainage swale and culvert.

Fuel-type contamination was found in the area of a UST that was removed in the mid-1990s. Approximately 80 cubic yards of fuel-contaminated soil were excavated during removal of the UST. The excavation did not continue under the concrete pad at Site 10B.

3.3 SOUTHERN AREA – ONSITE AND OFFSITE

The Southern Area is located southeast of Site 10B in Parcel B2 and extends to the southeast. This area was originally investigated because chlorinated solvents were detected in a Suffolk County monitoring well down gradient of the facility. There are no known or suspected contaminant sources within this area. However, the area is hydraulically down gradient of Site 6A, Site 10B, and the NWIRP general industrial complex. The groundwater flow direction through this area is southeast toward the Peconic River. The Peconic River is the likely end point for groundwater flow from this area.

The area is mostly wooded and includes two shallow ponds near the northern edge. The ponds receive runoff through a drainage swale and culvert from Site 6A. From the late 1980s to the early 1990s, groundwater from Site 6A was discharged into this drainage swale and culvert and into the western pond. As a result, the presence of chlorinated solvents in groundwater at the Southern Area may be attributable to Site 6A.

4.0 SCOPE OF WORK

The following is a list of activities that are covered in this HASP to be conducted under CTO 449.

- Mobilization/demobilization
- Soil boring activities using hollow stem auger
- Monitoring well installation, purging, and development
- Multi-media sampling, including subsurface soil (split spoon), groundwater, sediment and investigative-derived waste (IDW) sampling
- Decontamination of sampling and heavy equipment
- IDW management
- Geographical land survey

For more detailed description of the associated tasks, refer to the Work Plan (WP) and/or Sampling and Analysis Plan (SAP). Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. The PM or a designated representative will submit requested modifications to this document to the HSM.

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 the 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.

5.1 GENERAL SAFE WORK PRACTICES

Follow these safe work practices when conducting work involving known and unknown site hazards. These safe work practices establish a pattern of general precautions and measures for reducing risks associated with hazardous site operations.

- Eating, drinking, chewing gum or tobacco, taking medication, or smoking is permitted in the support zone only.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.
- Avoid contact with potentially contaminated substances by walking around puddles, pools, mud, or other such areas.
- Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment. Do not place monitoring equipment on potentially contaminated surfaces.
- Be familiar with and adhere to the instructions in the site-specific HASP.
- Be aware of the location of the nearest telephone and emergency telephone numbers.

- Attend briefings on anticipated hazards, equipment requirements, Safe Work Permits, emergency procedures, and communication methods before going on site.
- Rehearse unfamiliar operations prior to implementation.
- Maintain visual contact with each other and with other on-site team members by remaining in close proximity in order 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 injuries, illnesses, and unsafe conditions, practices, and equipment to the Site Safety Officer (SSO).
- Observe coworkers for signs of toxic exposure and heat or cold stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

5.2 DRILLING SAFE WORK PRACTICES

The following Safe Work Practices are to be followed when working in or around drilling or mud rotary operations. Prior to intrusive investigation techniques check the SOP for Utility Locating and Excavation Clearance found in Section 7.0 of the HSGM.

- Identify underground utilities and buried structures before performing any drilling or mud rotary activities.
- A Competent Person (the SSO or designee) will inspect rigs, prior to the acceptance of the equipment at the site and prior to the use of the equipment. Repairs or deficiencies identified will be corrected prior to use. The inspection will be accomplished using the Equipment Inspection Checklist provided in Attachment III. Inspection frequencies will be once every shift or following repairs.

- The work area around the point of operation will be graded to the extent possible to remove any trip hazards.
- The drill rig/mud rotary operator helper will establish an equipment staging and lay-down plan in order to keep the work area clear of clutter and slips, trips, and fall hazards.
- Potentially contaminated tooling will be wrapped in polyethylene sheeting for storage and transport to the centrally located decontamination unit.
- Secure frayed or loose clothing, hair, and jewelry when working with drilling/MUD ROTARY equipment.
- Minimize contact to the extent possible with contaminated tooling and environmental media.
- Support functions (sampling and screening stations) will be maintained a minimum distance from the rig of the height of the mast plus five feet to remove these activities from within physical hazard boundaries.
- Only qualified operators and knowledgeable ground crew personnel will participate in the operation of the drill/Mud Rotary rig.
- Minimize contact with potentially contaminated tools and media and to minimize lifting hazards, multiple personnel should move auger flights and other heavy tooling.
- Only personnel absolutely essential to the work activity will be allowed in the exclusion zone. Site visitors will be escorted.
- The drill operator shall verbally alert employees and visually ensure employees are clear from dangerous parts of equipment before starting or engaging equipment.
- One employee shall be responsible for emergency shut-off switch operation during drilling operation, such that the machinery can be shutdown quickly if an employee is in danger.
- Equipment used within the exclusion zone will undergo a complete decontamination and evaluation by the SSO to determined cleanliness prior to moving to the next location, exiting the site, or prior to down time for maintenance.

- Motorized equipment will be fueled prior to the commencement of the days activities. During fueling operations the equipment will be shutdown and bonded to the fuel provider.
- When not in use rigs will be shutdown, emergency brakes set, and wheels chocked.
- Areas will be restored to equal or better condition than original to remove any contamination brought to the surface and to remove any physical hazards. Where these hazards cannot be removed the areas will be barricaded to minimize the impact on field crews working in the area.

6.0 HAZARD ASSESSMENT

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

Previous analytical data determined the presence of various volatile organic compounds (VOCs). Based on an evaluation of these data, and historical information about the site, the primary contaminant of concern (COC) at this site is benzene. Other VOCs have been detected, but an evaluation of the data indicates that they will not likely be encountered at concentrations that would represent a reasonable exposure concern.

6.1.1 Properties and Exposure Signs/Symptoms

Benzene - a colorless liquid with a sweet odor. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable and is formed from both natural processes and human activities. Benzene is widely used in the United States; it ranks in the top 20 chemicals for production volume.

Breathing very high levels of benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

The major effect of benzene from long-term exposure is on the blood. Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

Long-term exposure to high levels of benzene in the air can cause leukemia, particularly acute myelogenous leukemia, often referred to as AML. This is a cancer of the blood-forming organs. The Department of Health and Human Services (DHHS) has determined that benzene is a known carcinogen. The International Agency for Research on Cancer (IARC) and the EPA have determined that benzene is carcinogenic to humans.

Bromomethane - Bromomethane is a manufactured chemical. It also occurs naturally in small amounts in the ocean where it is formed, probably by algae and kelp. It is a colorless, nonflammable gas with no distinct smell. If you breathe bromomethane you may develop a headache and begin to feel weak and nauseated several hours later. If you breathe large amounts, fluid may build up in your lungs and it may

be hard to breathe. It could cause muscle tremors, seizures, kidney damage, nerve damage, and even death.

Exposure levels leading to death vary from 1,600 to 60,000 parts of bromomethane in 1 million parts of air (1,600-60,000 ppm), depending on the length of the exposure. These levels are much, much higher than those to which you would normally be exposed. The respiratory, kidney, and neurologic effects are of the greatest concern to people. Swallowing bromomethane may cause stomach irritation. If bromomethane gets on your skin, it can cause itching, redness, and blisters. These effects are caused by levels that are higher than levels you might normally encounter

Chlorobenzene - Chlorobenzene is a colorless, flammable liquid with an aromatic, almond-like odor. Some of it will dissolve in water, but it readily evaporates into air. It does not occur naturally in the environment. Workers exposed to high levels of chlorobenzene in the air complained of headaches, nausea, sleepiness, numbness, and vomiting. We cannot be certain that all of these effects were due to chlorobenzene exposure because the workers may have been exposed to other chemicals. Animal studies indicate that the liver, kidney, and central nervous system are affected by exposure to chlorobenzene. Effects on the central nervous system from breathing chlorobenzene include unconsciousness, tremors, restlessness, and death. Longer exposure has caused liver and kidney damage.

1,2-Dichloroethene – Also called 1,2-dichloroethylene, is a highly flammable, colorless liquid with a sharp, harsh odor. It is used to produce solvents and in chemical mixtures. You can smell very small amounts of 1,2-dichloroethene in air (about 17 parts of 1,2-dichloroethene per million parts of air [17 ppm]). There are two forms of 1,2-dichloroethene; one is called cis-1,2-dichloroethene and the other is called trans-1,2-di-chloroethene. Sometimes both forms are present as a mixture. Breathing high levels of 1,2-dichloroethene can make you feel nauseous, drowsy, and tired; breathing very high levels can kill you.

Lower doses of cis-1,2-dichloroethene caused effects on the blood, such as decreased numbers of red blood cells, and also effects on the liver. The long-term (365 days or longer) human health effects after exposure to low concentrations of 1,2-dichloroethene aren't known. One animal study suggested that an exposed fetus may not grow as quickly as one that hasn't been exposed.

Trichlorotrifluoroethane - Is a colorless liquid with ethereal and faint sweetish odor. At low concentration (human: 2,500 ppm fluorocarbon component, 0.5-1.0 hour exposure) headache, dizziness, nausea, loss of concentration have been experienced. With high exposure levels: intoxication, cardiac effects, and CNS depression (loss of concentration or even death) may occur. Vapors can displace air, resulting in an asphyxiation hazard. Irritant to skin and eyes: excessive contact may cause de-fatting. Similar symptoms as for inhalation. In large doses, respiratory failure can occur. Primarily a central

nervous system depressant. Inhalation can cause irritation of the respiratory tract, dizziness, nausea, headache, loss of coordination and equilibrium, unconsciousness and even death in confined or poorly ventilated area. Liquid splashed in the eye can result in discomfort, pain and irritation. Prolonged or repeated contact with liquid on the skin can cause irritation and dermatitis. The problem may be accentuated by liquid becoming trapped against the skin by contaminated clothing and shoes. Skin absorption can occur.

Inhalation - The principle route that a worker could be exposed to this COC is inhalation. Secondary pathways include ingestion, and a possibility for exposure via direct skin contact. These potential exposure routes and the means that will be used to prevent or control them are addressed below. Based on the data from previous investigations at this worksite, worker exposure to airborne concentrations of these COCs that could represent a health concern is considered to be possible, but not likely. The data indicate the following:

**TABLE 6-1
COMPARISON OF WORST-CASE PCE AIR CONCENTRATIONS
WITH CURRENT OCCUPATIONAL EXPOSURE LIMITS**

Contaminant of Concern	Highest Concentration Previously Detected in Water	Worst-Case Air Concentration That Could Be Encountered	Current OSHA PEL And ACGIH TLV
Benzene Site 10B	1.95 ug/l	0.14 ppm	OSHA: 1 ppm, TWA ₈ 5 ppm STEL ACGIH: 0.5 ppm, TWA ₈ 2.5 ppm STEL
Bromomethane Southern Area Off-site	353 ug/l	23.2 ppm	OSHA: 20 ppm, TWA ₈ ACGIH: 1 ppm, TWA ₈
Chlorobenzene Southern Area On-site	381	12.76 ppm	OSHA: 75 ppm, TWA ₈ ACGIH: 10 ppm, TWA ₈
1,2-Dichloroethene Southern Area On-site	15 ug/l	4.4 ppm	OSHA none ACGIH 5 ppm, TWA ₈
Trichlorotrifluoroethane Southern Area On-site	152 ug/l	2,158 ppm	OSHA 1000 ppm, TWA ₈ ACGIH 1250 ppm STEL

Table Notes:

TWA₈: Average air concentration over an 8-hour work period that is not to be exceeded

OSHA STEL: Concentration in air that is not to be exceeded for more than 5 minutes in any 3 hour period

As indicated in this table, from a worst-case scenario, benzene concentrations immediately above the captured air phase above contaminated soil could reach concentrations that are in excess of the ACGIH TLV TWA₈ and are a fraction of the OSHA PEL TWA₈. 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 contaminants through dilution and dispersion.
- The water values used in this evaluation were the *highest* concentration previously detected in groundwater samples.

As a result of these factors, it is unlikely that workers participating in this activity will encounter airborne concentrations for the primary COC that would represent an occupational exposure concern. To monitor this route, real-time direct reading monitoring instruments will be used (as described in section 7.0). This will be performed during ground water, intrusive soil, well installation and decontamination activities.

Ingestion and Skin Contact - Potential exposure concerns to the primary COC may also occur through ingesting or coming into direct skin contact with contaminated water and soils. The likelihood of worker exposure concerns through these two routes are also considered 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 of onsite practices that are to be observed that will protect workers from exposure via ingestion or skin contact include the following:

- Avoid 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 appropriate gloves whenever handling potentially-contaminated media, including soils, water, hand tools, and sample containers.

6.2 PHYSICAL HAZARDS

The physical hazards that may be present during the performance of site activities are summarized below:

- Heavy equipment hazards (moving components, rotating equipment, etc.).
- Slips, trips, and falls
- Energized systems (contact with underground or overhead utilities)
- Lifting (strain/muscle pulls)
- Noise in excess of 85 decibels (dBA)
- Flying projectiles
- Pinches and compressions

- Vehicular and foot traffic

Many of these hazards are discussed in detail in Section 4.0 of the HSGM. Specific discussions on some of these hazards are presented below.

6.2.1 Heavy Equipment Hazards (Moving components, rotating equipment, etc.)

Often the hazards associated with drilling operations are the most dangerous to be encountered during site activities. The SSO will thoroughly discuss safe drilling procedures during the pre-activities training session. The site personnel will sign the form in Figure 8-2 documenting that they received the training and understand the procedures. The following rules will apply to drilling operations:

- Each rig must be equipped with emergency stop devices which will be tested daily to ensure that they are operational.
- Long handled shovels or equivalent shall be used to clear cuttings from the borehole and rotating equipment.
- The driller may not leave the controls when the augers are rotating.

6.2.2 Energized Systems (Contact with Underground or Overhead Utilities)

Underground utilities such as pressurized lines, water lines, telephone lines, buried utility lines, and high voltage power lines may be present throughout the facility. Therefore, subsurface activities must be conducted following the requirements of the TtNUS SOP for "Utility Locating and Excavation Clearance (HS-1.0)". A copy of this SOP is provided in Section 7 of the TtNUS Health and Safety Guidance Manual. Clearance of underground and overhead utilities for each sample location will be coordinated with NWIRP Calverton personnel. Additionally, drilling operations will be conducted at a safe distance (>20 feet) from overhead power lines. Whenever underground utilities are suspected to be close to subsurface sampling locations, the borehole will be advanced to a minimum of four (4) feet BGS with a hand auger prior to drilling. As-built drawings may also be utilized for additional clarification.

6.3 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 dangerous animals may be present. Based on the planned location for the work covered by this HASP, encountering alligators is not a likely probability.

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.

6.3.1 Inclement Weather

Project tasks under this Scope of Work will be performed outdoors and near water. As a result, inclement weather may be encountered. In the event that adverse weather conditions arise (electrical storms, hurricanes, etc.), the FOL and/or the SSO will be responsible for temporarily suspending or terminating activities until hazardous conditions no longer exist. A NOAA Weather Radio is the best means to receive watches and warnings from the National Weather Service. The National Weather Service continuously broadcasts updated hurricane advisories that can be received by widely available NOAA Weather Radios.

6.3.2 Heat/Cold Stress

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

In general, early signs of heat-related disorders include heat rash, cramps, heavy sweating which may be followed by the complete shutdown of a person's ability to sweat, pale/clammy skin, headaches, dizziness, un-coordination, and other maladies. To prevent heat stress disorders, the following preventive measures are to be implemented by the SSO:

- When possible, schedule the most physically-demanding tasks so that they are performed during cooler periods of the day such as early morning or late afternoon
- Schedule frequent breaks during the hottest parts of the day (such as a few minutes each hour). Breaks should be in shaded areas, and in a location where workers can remove PPE, wash their hands, and drink fluids.
- Drinking fluids should be cool and non-caffeinated. Water and sports-drinks with electrolytes are acceptable provided that they do not contain alcohol.
- Many of the same precautions taken to prevent heat stress can be applied to cold stress prevention. In addition, the following measures should be considered:
 - Adequate insulating dry clothing to maintain core temperatures above 36°C (96.8°F) must be provided to workers if work is performed in air temperatures below 4°C (40°F).
 - Wind chill cooling rate and the cooling power of air are critical factors.
 - Unless there are unusual or extenuating circumstances, cold injury to other than hands, feet, and head is not likely to occur without the development of the initial signs of hypothermia.
 - The use of extra insulating clothing and/or a reduction in the duration of the exposure period are among the special precautions which should be considered.
 - Acclimatization – With exposure the body does undergo changes that will permit it to adjust to the cold weather better.
 - Engineering Controls such as wind shields/barriers may be used to control the potential affects of cold stress.
 - Administrative controls such as worker rotation; work/warm regimens; required fluid intake; scheduling the work for warmer weather; assigning more workers to the task to complete it quicker.

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

7.0 AIR MONITORING

Most of the anticipated site contaminants are not volatile or are semi-volatile, and are difficult to be detected with the use of direct reading instruments (DRIs). Specifically, the metals, pesticides, and PCBs exhibit poor detection characteristics due to their non-volatile nature and low vapor pressure property. Nonetheless, DRIs will be used to screen source areas (sample locations, wells, etc.) and worker breathing zones for any detectable contaminants. Action levels are listed in Safe Work Permits as they may apply to a specific task or location. This approach (coupled with the use of personal protective equipment and the observance of the other control requirements presented in this HASP) will minimize the potential for personnel exposures to hazardous concentrations (known or unknown) of airborne contaminants.

7.1 INSTRUMENTS AND USE

DRIs will be used primarily to monitor source points and worker breathing zone areas, while observing instrument action levels. If any sustained reading over background (BG) is exceeded, the following process will be followed:

- The SSO shall stop work and move site personnel upwind to a safe, unaffected area, where they will remain until further directed by the SSO.
- The SSO shall allow at least 5 minutes to pass so the work area can ventilate, and will then re-approach the work area while continuously monitoring the breathing zone (BZ) areas.
- Only when BG levels are regained in BZ areas will work be permitted to resume.
- If BG levels are not regained, the SSO will contact the HSM for additional direction.

7.1.1 Photoionization Detector or Flame Ionization Detector

In order to accurately monitor for any substances which may present an exposure potential to site personnel, a Photoionization Detector (PID) using a lamp energy of 10.6 eV or higher will be used. This instrument will be used to monitor potential source areas and to screen the breathing zones of employees during site activities. The PID has been selected because it is capable of detecting some of the organic vapors of concern (NOTE: A Flame Ionization Detector [FID] may be used as an alternative to the PID).

Prior to the commencement of any field activities, the background levels of the site must be determined. Daily background readings will be taken in clean areas away from any potential contamination. These

readings, any influencing conditions (i.e., weather, temperature, humidity) and site location must be documented in the field operations logbook or other site documentation (e.g., sample log sheet). The SSO may decide to increase these frequencies based on instrument responses and site observations. The frequency at which monitoring is performed will not be reduced without the prior consent of the PHSO or HSM.

7.2 INSTRUMENT MAINTENANCE AND CALIBRATION

Operational checks and field calibration will be performed on the instruments each day prior to their use. Field calibration will be performed on instruments according to manufacturer's recommendations (for example, the PID must be field calibrated daily and an additional field calibration must be performed at the end of each day to determine any significant instrument drift). These operational checks and calibration efforts will be performed in a manner that complies with the employees health and safety training, the manufacturer's recommendations, and with the applicable manufacturer standard operating procedure (copies of which can be found in the Health & Safety Guidance Manual which will be maintained on site for reference). 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 the 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., PID, FID, LEL/O₂ 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 the NWIRP Calverton. 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 II 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

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

9.1 EXCLUSION ZONE

The Exclusion Zone will be considered those areas of the site of known or suspected contamination. It is not anticipated that significant amounts of surface contamination are in the proposed work areas of this site. It is anticipated that this will remain so until/unless contaminants are brought to the surface by intrusive activities such as drilling. Furthermore, once such activities have been completed and surface contamination has been removed, the potential for exposure is again diminished and the area can then be reclassified as part of the Contamination Reduction Zone. Therefore, the Exclusion Zones for this project will be limited to those areas of the site where active work is being performed plus so many feet surrounding the point of operation. The Exclusion Zone for this activity will represent the areas where the soils are disturbed through soil borings, well installations, and sampling activities. The Exclusion Zones will be delineated (e.g., barrier tape, cones and/or postings) to inform and direct facility personnel.

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 exposure to site contaminants would not be expected 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 to guide and direct field crews on a task by task basis. An example of the Safe Work Permit to be used is illustrated in Figure 9-1. Partially completed Permits for the work to be performed are included in Attachment IV. The daily meetings conducted at the site will further support these work permits. This effort will ensure site-specific considerations and changing conditions are incorporated into the planning effort. Permits will require the signature of the FOL and SSO. Use of these permits will provide the communication line for reviewing protective measures and hazards associated with each operation. This HASP will be used as the primary reference for selecting levels of protection and control measures. The work permit will take precedence over the HASP when more conservative measures are required based on specific site conditions.

9.5 SITE VISITORS

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

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

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

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

NOTE: Site visitors will be escorted while at the site.

**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 _____ 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 No Specify on the reverse

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: _____

Following this, the site visitor will be permitted to enter the site and applicable operational areas. Visitors are required to observe the protective equipment and site restrictions in effect at the area of their visit. 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 onsite activities to be terminated until that visitor can be removed. Removal of unauthorized visitors will be accomplished with support from the NWIRP Calverton Contact and, if necessary, the Riverhead Police Department.

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 closed Navy facility it is possible to encounter unexpected individuals due to the relaxed security. Therefore, the first line of security will take place using Exclusion Zone barriers, and any existing barriers at the sites to restrict unauthorized access.. The second line of security will take place at the work site referring interested parties to the FOL or designee. The FOL will serve as a focal point for non-project interested parties, and serve as the final line of security and the primary enforcement contact will be the Riverhead Police Department.

9.7 SITE MAP

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

9.8 BUDDY SYSTEM

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

9.9 MATERIAL SAFETY DATA SHEET (MSDS) REQUIREMENTS

TtNUS and subcontractor personnel will provide MSDSs for the 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 field activities, a supported means of communication between field crews members will not be necessary. External communication will be accomplished by using the telephones at predetermined and approved locations. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of activities, the FOL will determine and arrange for telephone communications.

10.0 SPILL CONTAINMENT PROGRAM

10.1 SCOPE AND APPLICATION

It is not anticipated that bulk hazardous materials (over 55-gallons) will be 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, the potential may exist for accumulating Investigative Derived Wastes (IDW) such as decontamination fluids, soil cuttings, and purge and well development waters, in a central staging area. Once these fluids and other materials have been characterized, they can be removed from this area and properly disposed.

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 or in the resource deployment 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. The inspections will be documented in the project logbook.

10.4 PERSONNEL TRAINING AND SPILL PREVENTION

Site 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 minimum equipment that may be maintained (depending on anticipated need) 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

10.5.1 PPE for Spill Control

Minimal PPE for spill control will be employed as needed. These materials may include:

- Nitrile work and inner gloves
- Tyvek coveralls
- Hard Hat
- Steel toed shoes with neoprene boot covers

10.6 SPILL CONTROL PLAN

This section describes the procedures the TtNUS field crewmembers will use upon the detection of a spill or leak.

- 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.
- Employ the personal protective equipment stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the container or raising the leak to the highest point in the vessel. Spread the absorbent material in the area of the spill, covering it completely.
- Transfer the material to a new vessel; collect and containerize the absorbent material. Label the new container appropriately. Await analyses for treatment and disposal options.

- Re-containerize spills, including 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

Personnel under the provisions of this HASP are not allowed, under any circumstances, to enter any confined spaces. A confined space is defined as an area which has one or more of the following characteristics:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
- Is not designed for continuous employee occupancy.
- A Permit-Required Confined Space is one that:
 - Contains or has a potential to contain a hazardous atmosphere.
 - Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging 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 operations, consult the Health and Safety Guidance Manual or call the HSM. Any activity that may be considered a confined-space entry shall require modifications of this HASP and shall result in the immediate notification of the Project Health and Safety Officer. This determination shall be made by the FOL and SSO.

12.0 MATERIALS AND DOCUMENTATION

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

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- Material Safety Data Sheets for the chemicals brought on site, including decon solution, fuels, sample preservations, calibration gases, etc.
- Follow-up Reports (to be completed by the FOL)
- A full size OSHA Job Safety and Health Poster (Attachment V)
- Training/Medical Surveillance Documentation Form (blank)
- First-Aid Supply Usage Form
- Emergency Reference Form (Section 2.0, extra copy for posting)

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 the chemicals brought on-site, including decontamination solutions, sample preservations, fuel, etc.. This list should be posted in a central area.

Material Safety Data Sheets (MSDS) (maintained) - The MSDSs should also be in a central area accessible to the site personnel. These documents should match the listings on the chemical inventory

list for the substances employed on-site. It is acceptable to have these documents within a central folder and the chemical inventory as the table of contents.

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

Site Clearance (maintained) - This list is found within the training section of the HASP (See Figure 8-2). This list identifies the site personnel, dates of training (including site-specific training), and medical surveillance. The lists indicate clearance and 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 the 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.

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

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

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

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

13.0 GLOSSARY

ACGIH	American Conference of Governmental Industrial Hygienists
APR	Air Purifying Respirator
BGS	Below Ground Surface
C	Centigrade
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLEAN	Comprehensive Long-term Environmental Action - Navy
CNS	Central Nervous System
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
CTO	Contract Task Order
CZR	Contamination Reduction Zone
dBA	Decibel
DoD	Department of Defense
DOT	Department of Transportation
ECM	Electronic Measures Area
EPA	Environmental Protection Agency
eV	electron Volts
F	Fahrenheit
FID	Flame Ionization Detector
FOL	Field Operations Leader
GC	Gas Chromatograph
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HEPA	High Efficiency Particulate Air
HSM	Health and Safety Manager
IARC	International Agency for Research on Cancer
IAS	Initial Assessment Study
IDLH	Immediate Dangerous to Life or Health
IDW	Investigative Derived Waste
IP	Ionization Potential
IR	Installation Restoration
LEL/LFL	Lower Explosive Limit / Lower Flammable Limit
mg/m ³	Milligrams per cubic meter
mmHg	millimeters mercury

MSDS	Material Safety Data Sheet
msl	mean sea level
MWIRP	Naval Weapons Industrial Reserve Plant
N/A	Not Available
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicity Program
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PAH	Polynuclear Hydrocarbons
PE	Professional Engineer
PEL	Permissible Exposure Limit
PHSO	Project Health and Safety Officer
PID	Photoionization Detector
PPE	Personal Protective Equipment
PPM	Parts per Million
Pt	Point
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
SAP	Sampling and Analyses Plan
SAR	Supplied Air Respirator
SCBA	Self Contained Breathing Apparatus
SI	Site Investigation
SOP	Standard Operating Procedure
SSO	Site Safety Officer
SSO	Site Safety Officer
STEL	Short Term Exposure Limit
SVOC	Semivolatile Organic Compound
TBD	To be determined
TLV	Threshold Limit Value
PM	Project Manager
TtNUS	Tetra Tech NUS, Inc.
TWA	Time-Weighted Average
UEL/UFL	Upper Explosive Limit/Upper Flammable Limit
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WP	Work Plan

ATTACHMENT I

INCIDENT REPORT FORM

Report Date	Report Prepared By	Incident Report Number
INSTRUCTIONS:		
<p>All incidents (including those involving subcontractors under direct supervision of Tetra Tech personnel) must be documented on the IR Form.</p> <p>Complete any additional parts to this form as indicated below for the type of incident selected.</p>		
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 <input type="checkbox"/> No <input type="checkbox"/>		
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:				
<hr/> <hr/> <hr/>				
Corrective action(s) still to be taken (by whom and when):				
<hr/> <hr/> <hr/>				
ROOT CAUSE ANALYSIS LEVEL REQUIRED				
Root Cause Analysis Level Required: Level - 1 <input type="checkbox"/> Level - 2 <input type="checkbox"/> None <input type="checkbox"/>				
Root Cause Analysis Level Definitions				
Level - 1	<p>Definition: A Level 1 RCA is conducted by an individual(s) with experience or training in root cause analysis techniques and will conduct or direct documentation reviews, site investigation, witness and affected employee interviews, and identify corrective actions. Activating a Level 1 RCA and identifying RCA team members will be at the discretion of the Corporate Administration office.</p> <p>The following events may trigger a Level 1 RCA:</p> <ul style="list-style-type: none"> ▪ Work related fatality ▪ Hospitalization of one or more employee where injuries result in total or partial permanent disability ▪ Property damage in excess of \$75,000 ▪ When requested by senior management 			
Level - 2	<p>Definition: A Level 2 RCA is self performed within the operating unit by supervisory personnel with assistance of the operating unit HSR. Level 2 RCA will utilize the 5 Why RCA methodology and document the findings on the tools provided.</p> <p>The following events will require a Level 2 RCA:</p> <ul style="list-style-type: none"> ▪ OSHA recordable lost time incident ▪ Near miss incident that could have triggered a Level 1 RCA ▪ When requested by senior management 			
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				
Title	Printed Name	Signature	Telephone Number	Date
Project Manager or Supervisor				
Site Safety Coordinator or Office H&S Representative				
Operating Unit H&S Representative				
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 <input type="checkbox"/> No <input type="checkbox"/>
	Was individual hospitalized overnight as an in-patient? Yes <input type="checkbox"/> No <input type="checkbox"/>
Telephone Number	Did the individual die? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, date: _____
	Will a worker's compensation claim be filed? Yes <input type="checkbox"/> No <input type="checkbox"/>

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 <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>

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)

INCIDENT DETAILS

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?

Yes No

Did ambulance respond to the accident?

Yes No

Name and location of responding police department

Ambulance company name and location

Officer's name/badge #

Did police complete an incident report? Yes No If yes, police report number: _____
Request a copy of completed investigation report and attach to this form.

VEHICLE INFORMATION

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)							
<p>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</p>							
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

A large, empty rectangular box with a black border, intended for drawing a diagram. The box occupies most of the page below the instruction header.

ATTACHMENT II

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 the 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 III

EQUIPMENT INSPECTION CHECKLIST

FOR

HEAVY EQUIPMENT

Equipment Inspection Checklist for Drill Rigs

Company: _____

Unit/Serial No#: _____

Inspection Date: ____ / ____ / ____ Time: ____ : ____

Equipment Type: _____

(e.g, Drill Rigs Hollow Stem, Mud Rotary, Direct Push,

HDD)

Project Name: _____

Project No#: _____

Yes	No	NA	Requirement	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Emergency Stop Devices	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Emergency Stop Devices (At points of operation) • Have all emergency shut offs identified been communicated to the field crew? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Has a person been designated as the Emergency Stop Device Operator? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Highway Use	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Cab, mirrors, safety glass? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Turn signals, lights, brake lights, etc. (front/rear) for equipment approved for highway use? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Seat Belts? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Is the equipment equipped with audible back-up alarms and back-up lights? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Horn and gauges 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Brake condition (dynamic, park, etc.) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Tires (Tread) or tracks 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Windshield wipers 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Exhaust system 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Steering (standard and emergency) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Wheel Chocks? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Are tools and material secured to prevent movement during transport? Especially those within the cab? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Are there flammables or solvents or other prohibited substances stored within the cab? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> • Are tools or debris in the cab that may adversely influence operation of the vehicle (in and around brakes, clutch, gas pedals) 	

Unit/Serial No#: _____

Inspection Date: ____ / ____ / ____

Yes	No	NA	Requirement	Comments
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Fluid Levels:</p> <ul style="list-style-type: none"> • Engine oil • Transmission fluid • Brake fluid • Cooling system fluid • Hoses and belts • Hydraulic oil 	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>High Pressure Hydraulic Lines</p> <ul style="list-style-type: none"> • Obvious damage • Operator protected from accidental release • Coupling devices, connectors, retention cables/pins are in good condition and in place 	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Mast Condition</p> <ul style="list-style-type: none"> • Structural components/tubing • Connection points • Pins • Welds • Outriggers • Operational • Plumb (when raised) 	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Hooks</p> <ul style="list-style-type: none"> • Are the hooks equipped with Safety Latches? • Does it appear that the hook is showing signs of wear in excess of 10% original dimension? • Is there a bend or twist exceeding 10% from the plane of an unbent hook? • Increase in throat opening exceeding 15% from new condition • Excessive nicks and/or gouges • Clips • Number of U-Type (Crosby) Clips (cable size 5/16 – 5/8 = 3 clips minimum) (cable size 3/4 – 1 inch = 4 clips minimum) (cable size 1 1/8 – 1 3/8 inch = 5 clips minimum) 	

Unit/Serial No#: _____

Inspection Date: ____ / ____ / ____

Yes	No	NA	Requirement	Comments
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Power cable and/or hoist cable	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Reduction in Rope diameter π (5/16 wire rope > 1/64 reduction nominal size -replace) (3/8 to 1/2 wire rope > 1/32 reduction nominal size-replace) (9/16 to 3/4 wire rope > 3/64 reduction nominal size-replace) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Number of broken wires (6 randomly broken wires in one rope lay) (3 broken wires in one strand) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Number of wire rope wraps left on the Running Drum at nominal use (≥ 3 required) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> - Lead (primary) sheave is centered on the running drum 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Lubrication of wire rope (adequate?) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Kinks, bends – Flattened to > 50% diameter 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hemp/Fiber rope (Cathead/Split Spoon Hammer)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Minimum $\frac{3}{4}$; maximum 1 inch rope diameter (Inspect for physical damage) 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Rope to hammer is securely fastened 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety Guards –	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Around rotating apparatus (belts, pulleys, sprockets, spindles, drums, flywheels, chains) all points of operations protected from accidental contact? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Hot pipes and surfaces exposed to accidental contact? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> High pressure lines 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Nip/pinch points 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operator Qualifications	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Does the operator have proper licensing where applicable, (e.g., CDL)? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Does the operator, understand the equipment's operating instructions? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Is the operator experienced with this equipment? 	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> Is the operator 21 years of age or more? 	

Unit/Serial No#: _____

Inspection Date: ____ / ____ / ____

Yes	No	NA	Requirement	Comments
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>PPE Required for Drill Rig Exclusion Zone</p> <ul style="list-style-type: none"> • Hardhat • Safety glasses • Work gloves • Chemical resistant gloves _____ • Steel toed Work Boots • Chemical resistant Boot Covers • Apron • Coveralls Tyvek, Saranex, cotton) _____ 	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>Other Hazards</p> <ul style="list-style-type: none"> • Excessive Noise Levels? _____ dBA • Chemical hazards (Drilling supplies - Sand, bentonite, grout, fuel, etc.) <ul style="list-style-type: none"> - MSDSs available? • Will On-site fueling occur <ul style="list-style-type: none"> - Safety cans available? - Fire extinguisher (Type/Rating - _____ - _____) 	

Approved for Use Yes No See Comments

Site Health and Safety Officer

Operator

ATTACHMENT IV

SAFE WORK PERMITS

SAFE WORK PERMIT
MOBILIZATION AND DEMOBILIZATION
NWIRP CALVERTON
CALVERTON, NEW YORK

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

- I. **Work limited to the following (description, area, equipment used):** Mobilization and demobilization activities. This includes activities such as equipment staging, packing/unpacking, etc. This permit also covers the utility clearance tasks and site survey activities.
- II. **Primary Hazards:** Lifting, pinches and compressions, slips, trips, and falls
- III. **Field Crew:** _____
- IV. **On-site Inspection conducted** Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

SECTION II: General Safety Requirements (To be filled in by permit issuer)

- V. **Protective equipment required** **Respiratory equipment required**
 Level D Level B Yes See Reverse
 Level C Level A No
 Modifications/Exceptions: N/A.

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

Primary Route of Exposure/Hazard: N/A

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

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 checked="" 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 checked="" type="checkbox"/> No | Gloves (Cotton/Leather) <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 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 checked="" 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: Cotton or leather gloves when handling sharp or rough objects.

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..... | <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:** Suspend site activities in the event of inclement weather. Employ proper lifting techniques as described in Section 6.2.2 of the HASP. To minimize the potential for exposure, avoid potentially contaminated media. Preview work locations to identify potential hazards (slips, trips, and falls, natural hazards, etc.) Avoid potential nesting areas. Wear light colored clothing so that ticks and other biting insects can be easily visible and can be removed. Inspect clothing and body for ticks.

Permit Issued by: _____ Permit Accepted by: _____

SAFE WORK PERMIT
GROUNDWATER SAMPLING
NWIRP CALVERTON
CALVERTON, NEW YORK

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

I. Work limited to the following (description, area, equipment used): Groundwater and sediment sampling

II. Primary Hazards: Lifting, and handling containers; contact with contaminated media.

III. Field Crew: _____

IV. On-site Inspection conducted Yes No Inspector Initials _____ TtNUS _____

Equipment Inspection required Yes No Inspector Initials _____ TtNUS _____

SECTION II: General Safety Requirements (To be filled in by permit issuer)

V. Protective equipment required
 Level D Level B
 Level C Level A

Respiratory equipment required
 Yes See Reverse
 No

Modifications/Exceptions: _____

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>Potential site contaminants (VOCs)</u>	<u>PID with 10.6 eV (or higher) lamp source</u>	<u>Any sustained readings above bkgd in worker breathing zone</u>	<u>Suspend activities and move upwind to an unaffected area.</u> <u>No resumption of activities until levels return to bkgd.</u>
_____	_____	_____	_____

Primary Route of Exposure/Hazard: Inhalation, ingestion, skin and eye contact. Wear PPE, follow good personal hygiene and decontamination practices, and good site work practices (e.g., no hand-to-mouth actions on site, etc.) to control ingestion and skin and eye contact routes of entry.

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

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 checked="" 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 type="checkbox"/> No |
| Splash suits/coveralls | <input type="checkbox"/> Yes <input type="checkbox"/> No | Gloves (Type – heavy duty cotton,)..... | <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 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 type="checkbox"/> No |
| High Visibility vest..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Tape up/use insect repellent | <input checked="" 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 type="checkbox"/> Yes <input type="checkbox"/> No | Other | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Modifications/Exceptions: High Visibility Vests for high traffic areas; Tape up and use insect repellent; Open wells and allow to vent/off gas 3-5 minutes while preparing your equipment from an upwind position. Tyvek suits and boot covers at SSO's discretion

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 Cleared and Established | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Barricaded and Isolated | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

IX. Additional Permits required (Hot work, confined space entry, excavation etc.) Yes No
If yes, complete permit required or contact Health Sciences, Pittsburgh Office

X. Special instructions, precautions: Personal sampling at remote locations will bag contaminated PPE and reusable sampling tools. Use hygienic wipes for hands and face until persons can reach the structured decontamination unit. Minimize contact with potentially contaminated media. Suspend site activities in the event of inclement weather. Employ proper lifting techniques for mobilization/demobilization. For remote locations pack glass ware in hard sided containers to prevent falls breakage of glassware and possible lacerations. Provisions for protection against the sun should be provided to site personnel including shade providing devices requirements for hats, sun block, wrap around sun glasses.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
DECONTAMINATION
NWIRP CALVERTON
CALVERTON, NEW YORK**

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

- I. **Work limited to the following (description, area, equipment used):** Sampling equipment will be decontaminated using buckets, brushes and spray bottles at the work site or designated location. High pressure or steam washer used for drill rig
- II. **Primary Hazards:** Stacked equipment - falling hazards; slips, trips, and falls – slippery surfaces.
- III. **Field Crew:** _____
- IV. **On-site Inspection conducted** Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

SECTION II: General Safety Requirements (To be filled in by permit issuer)

- V. **Protective equipment required** **Respiratory equipment required**
 Level D Level B Yes Specify on the reverse
 Level C Level A No
- Modifications/Exceptions: None anticipated

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>Potential site contaminants (VOCs)</u>	<u>PID with 10.6 eV (or higher) lamp source</u>	<u>Any sustained readings above bkgd in worker breathing zone</u>	<u>Suspend activities and move upwind to an unaffected area. No resumption of activities until levels return to bkgd.</u>

Primary Route of Exposure/Hazard: Soap – Contact - Eye irritant; ingestion - nausea possible vomiting, diarrhea; Exposure to residual site contaminants during this activity is considered negligible.

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

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 type="checkbox"/> No |
| Safety Glasses | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Chemical/splash goggles..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Radio/Cellular Phone..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Splash Shield..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Barricades | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash suits/coveralls | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Gloves (Type – Nitrile)..... | <input checked="" 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 checked="" type="checkbox"/> No |
| Steel toe work shoes/boots..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical Resistant Boot Covers | <input checked="" type="checkbox"/> Yes <input 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 checked="" type="checkbox"/> No |
| First Aid Kit..... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Fire Extinguisher..... | <input checked="" 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: Gloves – Nitrile (surgeons style) or outer for cleaning hand tools. Impermeable apron can be worn when decontaminating sampling equipment. Splash goggles or shield and hearing protection will be worn when using high pressure/steam washer on DPT vehicle.

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:** Suspend site activities in the event of inclement weather. Employ proper lifting techniques. Follow MSDS for any decontamination solutions/solvents used.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
IDW MANAGEMENT
NWIRP CALVERTON
CALVERTON, NEW YORK**

Permit No. _____ Date: _____ Time: From _____ to _____

SECTION I: General Job Scope

I. Work limited to the following (description, area, equipment used): IDW management activities includes containerization, staging, monitoring for leaks of IDW accumulated wastes. Waste types include purge and decontamination wash waters.

II. Primary Hazards: Lifting, pinches and compressions; slips, trips, and falls.

Field Crew: _____

IV. On-site Inspection conducted Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

SECTION II: General Safety Requirements (To be filled in by permit issuer)

V. Protective equipment required **Respiratory equipment required**

Level D Level B Yes See Reverse
 Level C Level A No

Modifications/Exceptions: None anticipated

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>Potential site contaminants (VOCs)</u>	<u>PID with 10.6 eV (or higher) lamp source</u>	<u>Any sustained readings above bkgd in worker breathing zone</u>	<u>Suspend activities and move upwind to an unaffected area. No resumption of activities until levels return to bkgd.</u>
_____	_____	_____	_____

Primary Route of Exposure/Hazard: None

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

VII. Additional Safety Equipment/Procedures

Hard-hat.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hearing Protection (Plugs/Muffs)...	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Safety Glasses	<input type="checkbox"/> Yes <input 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 type="checkbox"/> No
Splash Shield	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Barricades.....	<input type="checkbox"/> Yes <input type="checkbox"/> No
Splash suits/coveralls	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Gloves (Type – Leather/Cotton)....	<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 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Other.....	<input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: If you are using pneumatic/electric power to open drums, wear safety glasses; If power equipment is used to move drums or when working near operating equipment, hard hats will be worn.

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	<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: Suspend site activities in the event of inclement weather. Employ proper lifting techniques. When/where possible use heavy equipment to move and place containers. When placing drums – Place the label and retention ring nut on the outside where it is readily visible. Place no more than 4-drums to a pallet. Maintain a minimum distance of 4-feet between pallet rows. An IDW inventory shall be generated to provide the number of drums, contents, and volumes. This inventory should be provided to the facility contact

Permit Issued by: _____ Permit Accepted by: _____

ATTACHMENT V

OSHA POSTER

Job Safety and Health

It's the law!



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

Following this, the site visitor will be permitted to enter the site and applicable operational areas. Visitors are required to observe the protective equipment

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 –
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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

OSHA 3165-12-06R