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HEALTH AND SAFETY PLAN FOR POST STORM SURGE SAMPLING FOR SOLID WASTE
MANAGEMENT UNITS 1, 2 AND 5 WITH TRANSMITTAL LETTER NAS KEY WEST FL
10/12/2006
TETRA TECH NUS



TETRA TECH NUS, INC.

AIK-06-0289

October 12, 2006

Project Number 00486

via U.S. Mail

Commander
Department of the Navy
NAVFAC SE
ATTN: Harold McGill (Code OPAEVR)
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North Charleston, South Carolina 29419-9010

Reference: CLEAN Contract No. N62467-04-D-0055
Contract Task Order No. 0044

Subject: Health and Safety Plan for Post Storm Surge Sampling, Rev. 0, Naval Air Station, Key West, Florida

Dear Mr. McGill:

I have enclosed a CD containing the PDF file for the Health and Safety Plan for Post Storm Surge Sampling, Rev. 0 Naval Air Station (NAS), Key West, Florida. I am not expecting to receive any comments on this document.

Please call me at (803) 641-4943, if you have any questions regarding the enclosed document.

Sincerely,

C. M. Bryan
Project Manager

CMB:spc

c: Ms. Debra M. Humbert (Cover Letter Only)
Mr. R. Courtright, NAS Key West

Mr. M. Perry/File
Files 00486-4.3

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62467-04-D-0055



Revision 0
October 2006

Health and Safety Plan for Post Storm Surge Sampling

Naval Air Station Key West
Key West, Florida

Contract Task Order 0044

October 2006



Southeast

2155 Eagle Drive

North Charleston, South Carolina 29406

**HEALTH AND SAFETY PLAN
FOR
POST STORM SURGE SAMPLING**

**NAVAL AIR STATION KEY WEST
KEY WEST, FLORIDA**

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

**Submitted to:
Southeast
Naval Facilities Engineering Command
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North Charleston, South Carolina 29406**

**Submitted by:
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**CONTRACT NO. N62467-04-D-0055
CONTRACT TASK ORDER 0044**

October 2006

PREPARED UNDER THE SUPERVISION OF:

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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 to Tech NUS (TtNUS) personnel conducting well installation and media sampling activities which support Performance Monitoring activities at the Naval Air Station (NAS) Key West, located in Key West, Florida.

This HASP has been prepared using the latest available information regarding known or suspected chemical contaminants and potential and foreseeable physical hazards associated with the planned work at NAS Key West. This HASP has been designed to be used in accordance with the Tetra Tech NUS 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.

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 Task Order Manager (TOM). The TOM will notify affected personnel of the changes.

The elements of this HASP are in compliance with the requirements established by OSHA 29 Code of Federal Regulations (CFR) 1910.120, "Hazardous Waste Operations and Emergency Response" (HAZWOPER). The information contained in this plan, as well as policies on conducting on site operations, has been obtained from the TtNUS Health and Safety Program and NAS Key West policies and procedures.

1.1 AUTHORITY

This work is authorized under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Southeast Naval Facilities Engineering Command, as defined under Contract No. N62467-04-D-0055; Contract Task Order Number 0044.

1.2 KEY PROJECT PERSONNEL AND ORGANIZATION

This section defines responsibilities for site safety and health for TtNUS and subcontractor employees conducting environmental sampling and other field activities. Personnel assigned to these positions shall exercise the primary responsibility for on site health and safety. These persons will be the primary point

of contact for any questions regarding the safety and health procedures and the selected control measures.

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

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

1.3 SITE INFORMATION AND PERSONNEL ASSIGNMENTS

Site Name: Naval Air Station (NAS) Key West **Address:** Key West, Florida

Site Point of Contact: Mr. Robert Courtright **Phone Number:** (305) 293-2881

Purpose of Site Visit: TtNUS will conduct multi media sampling and field activities to support Post Storm Surge Sampling at SWMU 1, 2 and 5 at NAS Key West. See Sections 3.0 and 4.0 for details concerning the site background and scope of work.

Proposed Dates of Work: September 2006 until completion

Project Team:

Tetra Tech NUS Personnel:

Chuck Bryan
Gary Braganza
Matthew M. Soltis, CIH, CSP
James K. Laffey
Gary Braganza
TBD
TBD

Discipline/Tasks Assigned:

Task Order Manager (TOM)
Field Operations Leader (FOL)
Health and Safety Manager (HSM)
Project Health and Safety Officer (PHSO)
Site Safety Officer (SSO)
Geologist
GPS Surveyor

Subcontractor Personnel:

TBD
TBD
TBD

Discipline/Tasks Assigned:

Hazard Assessment (for purposes of 29 CFR 1910.132) for HASP preparation has been conducted by:

Prepared by: James K. Laffey

2.0 EMERGENCY ACTION PLAN

2.1 INTRODUCTION

This section has been developed as part of a planning effort to direct and guide field personnel in the event of an emergency. However, given the nature of the work planned significant emergencies are not anticipated. Also, since a majority of potential emergency situations will require assistance from outside emergency responders, TtNUS personnel will provide emergency response support for emergency events only to the capabilities of on site personnel. In the event of emergencies that are beyond the capabilities of on site personnel, an evacuation will be initiated. In an evacuation, site personnel will move to a safe place of refuge and the appropriate emergency response agencies will be notified. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of operations, which 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(l)(1)(ii).

TtNUS personnel will, through the necessary actions, provide incidental response measures for incidents such as:

- Incipient Fire and spill prevention and response
- Removal of personnel from emergency situations
- Provision of initial medical support for injury/illnesses 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, there is very minor potential for injury or illnesses resulting from exposure to chemical, physical, or other hazards, and subsequently little likelihood of emergency situations. To further minimize or eliminate potential emergency situations, pre-emergency planning activities associated with this project shall be implemented. The FOL is responsible for:

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

2.3 EMERGENCY RECOGNITION AND PREVENTION

2.3.1 Recognition

Foreseeable emergency situations that may be encountered during site activities will generally be recognizable by visual observation. Visual observation will be the principal method of identifying any hazards that may be associated with the proposed scope of work. These potential hazards, the activities with which they have been associated, and the recommended control methods are discussed in detail in Sections 5.0 and 6.0 of this document.

2.3.2 Prevention

TtNUS personnel will minimize the potential for emergencies by ensuring compliance with the HASP, the Health and Safety Guidance Manual, applicable OSHA regulations, and by following directions given by those persons responsible for the health, safety, and welfare of personnel.

2.4 SAFE DISTANCES AND PLACES OF REFUGE

In the event that the site must be evacuated, personnel will immediately stop activities and report to a pre-determined safe place of refuge. The safe place of refuge may also serve as the telephone communication point, as communication with emergency response agencies may be necessary. Telephone communication points and safe places of refuge will be determined prior to the commencement of site activities and will be conveyed to personnel as part pre-site training. Upon reporting to the refuge location, personnel will remain there until directed otherwise by the TtNUS FOL or the On-Scene Incident Commander. The FOL will take a head count at this location to confirm the presence of site personnel. Emergency response agencies will be notified of any unaccounted for personnel.

2.5 EVACUATION ROUTES AND PROCEDURES

Once an evacuation is initiated, personnel will terminate site activities and proceed immediately to the designated place of refuge, unless doing so would further jeopardize the welfare of workers. In such an event, personnel will proceed to a designated alternate location and remain there until further notification from the FOL. The use of these locations as assembly points provides communication and a direction point for emergency services, should they be needed.

2.5.1 Decontamination Procedures/Emergency Medical Treatment

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

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. Attachment I provides the procedure to follow when reporting an injury/illness, and the form to be used for this purpose. **If the emergency involves personnel exposures to chemicals, follow the steps provided in Figure 2-1.**

2.6 EMERGENCY ALERTING AND ACTION/RESPONSE PROCEDURES

Since TtNUS personnel will be working in close proximity to each other, voice commands will comprise the mechanisms to alert site personnel of an emergency. If an incident occurs, site personnel will initiate the following procedures:

- Initiate incident alerting procedures (if needed) verbally.
- Describe to the FOL (who will serve as the Incident Coordinator) what has occurred and provide as many details as possible.

If the FOL determines that the situation is beyond the capabilities of the site personnel emergency services will be contact using the emergency reference information listed in Table 2-1. Explain the situation and the appropriate emergency services will be dispatched. Stay on the phone and follow the instructions of the emergency contact.

FIGURE 2-1 POTENTIAL EXPOSURE PROTOCOL

The purpose of this protocol is to provide guidance for the medical management of exposure situations. In the event of a personnel exposure to a hazardous substance or agent:

- 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 exposed person is a TtNUS 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. The care of the victim will be monitored by WorkCare physicians. 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 Ext. 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 exposure.
 - 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 exposed 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 (e.g., MSDS) to WorkCare at (714) 456-2154.
- Contact Corporate Health and Safety Department (Matt Soltis) and Human Resources Manager Marilyn Duffy at (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 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's findings/results will accompany this summary. A copy of the personal letter will be filed in the continuing medical file maintained by WorkCare.

FIGURE 2-1 (continued)
POTENTIAL EXPOSURE REPORT

Name: _____ Date of Exposure: _____

Social Security No.: _____ Age: _____ Sex: _____

Client Contact: _____ Phone No.: _____

Company Name: _____

I. Exposing Agent

Name of Product or Chemicals (if known): _____

Characteristics (if the name is not known)

Solid Liquid Gas Fume Mist Vapor

II. Dose Determinants

What was individual doing? _____

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

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

Was there skin contact? _____

Was the exposing agent inhaled? _____

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

III. Signs and Symptoms (check off appropriate symptoms)

Immediately With Exposure:

Burning of eyes, nose, or throat	Chest Tightness / Pressure
Tearing	Nausea / Vomiting
Headache	Dizziness
Cough	Weakness
Shortness of Breath	

Delayed Symptoms:

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

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

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

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

Improved: _____ Worsened: _____ Remained Unchanged: _____

V. Treatment of Symptoms (check off appropriate response)

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

2.7 EMERGENCY CONTACTS

Prior to performing work at the site, personnel will be thoroughly briefed on the emergency procedures to be followed in the event of an accident. As indicated earlier, Table 2-1 provides a list of emergency contacts and their corresponding telephone numbers. This table will be made readily available to site personnel.

**TABLE 2-1
EMERGENCY REFERENCE
NAS KEY WEST
KEY WEST, FLORIDA**

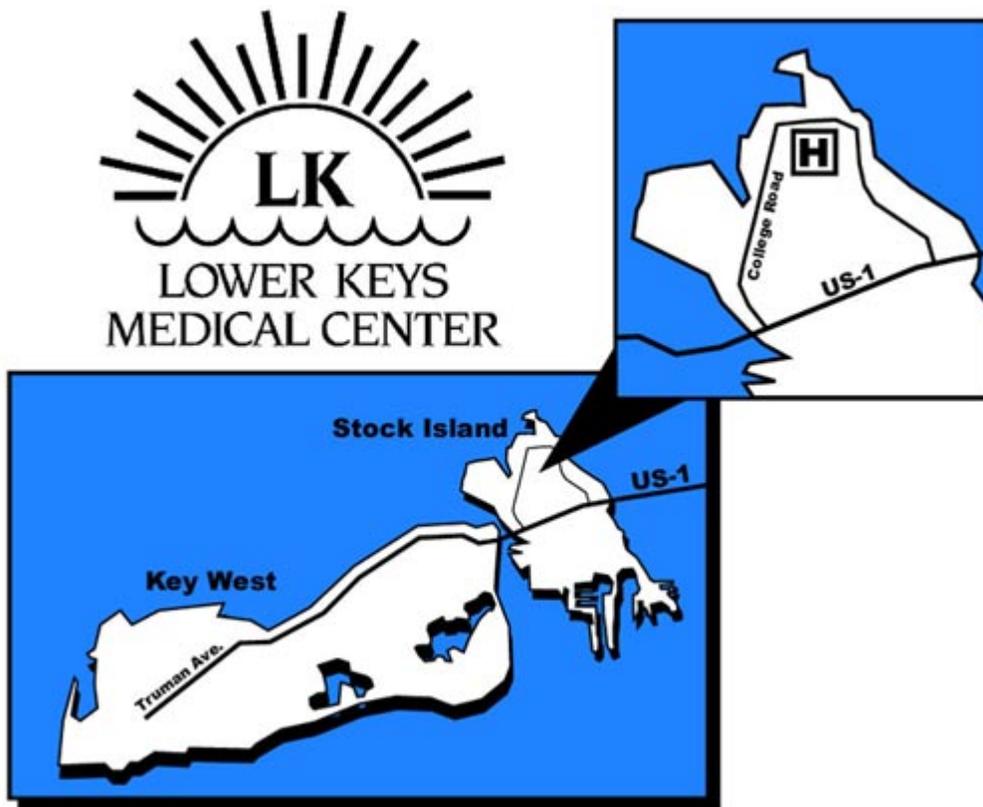
AGENCY	TELEPHONE
Key West Police/Rescue Services	911 or (305) 293-2971
Point of Contact Robert Courtright	(305) 293-2881
Base Police	(305) 293-2114
Base Fire Department Boca Chica	(305) 293-3333
Hospital: Lower Florida Keys Health System	(305) 294-5531
Base Officer of the Day (OOD)	(305) 293-2971
Sunshine State One-Call (utility clearance)	(800) 432-4770
Chemtrec	(800) 424-9300
National Response Center	(800) 424-8802
Poison Control Center	(800) 222-1222
TtNUS, Aiken Office	(803) 649-7963
Task Order Manager Chuck Bryan	(803) 641-4943
Field Operations Leader Gary Braganza	(954) 570-5885 ext 227
TtNUS, Pittsburgh Office	(800) 245-2730
Health and Safety Manager Matthew M. Soltis, CIH, CSP	(412) 921-8912
Project Health and Safety Officer James K. Laffey	(412) 921-8678

2.8 EMERGENCY ROUTE TO HOSPITAL

The closest hospital to NAS Key West is Lower Florida Keys Health System. An area map showing the proximity of NAS Key West to the hospital is incorporated into this HASP as Figure 2-1. Directions are as follows:

From Boca Chica go south on U.S. 1. Proceed to first traffic light at JUNIOR COLLEGE ROAD. Turn RIGHT and Proceed on JUNIOR COLLEGE ROAD and you will see HOSPITAL SIGN. Follow road to HOSPITAL which will be on the RIGHT. Hospital is located at 5900 COLLEGE ROAD ON STOCK ISLAND.

**FIGURE 2-2
LOWER FLORIDA KEYS HEALTH SYSTEM HOSPITAL**



2.9 INJURY AND 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 (see Attachment II) filed onsite. If an exposure to hazardous materials has occurred, provide hazard information from Table 6-1 to medical service personnel. As soon as possible, the Navy contact must be informed of any incident or accident that requires medical attention.

2.10 PPE AND EMERGENCY EQUIPMENT

A first-aid kit, eye wash units (or bottles of disposable eyewash solution) and a fire extinguisher will be maintained onsite and shall be immediately available for use in the event of an emergency. This equipment will be located in the field office or site vehicle. Personnel will only provide first-aid assistance to the level of their training.

3.0 SITE BACKGROUND

NAS Key West is in southern Monroe County, Florida. The U.S. Navy manages 6,323 acres of land divided into 20 separate tracts in the Lower Florida Keys, concentrated around Key West and Boca Chica Key. The Naval Station at Key West was disestablished in 1974, resulting in the relocation of several units. At present, NAS Key West is proceeding with realignment of aviation operations, a research laboratory, communications, intelligence; counter narcotics air surveillance operations, a weather service, and several other activities on Key West. In addition to the Naval activities and units, other Department of Defense (DOD) and Federal agencies at NAS Key West include the U.S. Air Force, U.S. Army, and U.S. Coast Guard.

Several installations in various parts of the lower Florida Keys comprise the Naval Complex at Key West. Most of these are on Key West or Boca Chica Key. Key West, one of the two westernmost major islands of the Florida Keys, is approximately 150 miles southwest of Miami and 90 miles north of Havana, Cuba. Key West is connected to the mainland by the Overseas Highway (U.S. Highway No. 1). The topography at the NAS Key West is generally flat.

3.1 SOLID WASTE MANAGEMENT UNIT (SWMU) 1

SWMU 1, Former Boca Chica Open Disposal Area, is located on the southeastern portion of Boca Chica Key, between Stone Road and the mangrove swamp along Geiger Creek and the Atlantic Ocean. SWMU 1 was the location of open disposal and open burning of general refuse and waste associated with aircraft maintenance activities from 1942 to the mid-1960s.

SWMU 1 received general refuse and waste associated with aircraft maintenance activities. The list of possible wastes includes waste oil, hydraulic fluid, paint thinner, and solvents. An estimated 2,600 tons of waste were disposed of or burned at this site each year. Three abandoned aboveground storage tanks (ASTs) were in the northwestern part of the site. The area of waste disposal and burning (approximately 4 acres) is indicated by debris present near the eastern edge of the site.

3.2 SOLID WASTE MANAGEMENT UNIT (SWMU) 2

SWMU 2, Former Boca Chica DDT Mixing Area, is located in the central portion of Boca Chica Key. The unit is within an active airstrip and completely surrounded by runways and taxiways. SWMU 2 consists of the former location of Building 915 and its surrounding area, which was used for the storage and mixing of pesticides. Two ASTs on concrete foundations were located to the west of the building.

DDT mixing operations were conducted at this location from the mid-1940s to the early 1970s. Building 915 was demolished in 1982, and the site is a vacant, sparsely vegetated lot covering approximately 0.25 acre. SWMU 2 is on the northern edge of a manmade ditch that drains to a lagoon. The ditch receives surface-water runoff from SWMU 2 and the area north of the site. There are no surface-water connections from the ditch and lagoon to nearby marine waters.

3.3 SOLID WASTE MANAGEMENT UNIT (SWMU) 5

SWMU 5, the Boca Chica AIMD Sand Blasting Building A-990, is located at the western end of the airfield on Boca Chica Key adjacent to Building A-990.

SWMU 5 was used from the early 1970s until 1995 to remove paint from surfaces of ground-handling and ground-support vehicles and equipment, aircraft parts, and other metal objects and pieces of equipment. The Sand Blasting Area is located adjacent to Building A-990 and measures approximately 65 feet by 90 feet. Paints and other materials resulting from the sandblasting of equipment, parts, and vehicles are potential sources of contamination. Consistent with these activities, inorganic compounds were the most common contaminants detected at SWMU 5. A drainage culvert to the south of the Sand Blasting Area has historically handled the surface water runoff from the sand blasting area.

4.0 SCOPE OF WORK

This section of the HASP addresses the proposed site activities that are to be conducted while performing the post storm surge sampling at SMWUs 1, 2 and 5 at NAS Key West. If tasks other than those identified are to be performed at this site this HASP will be modified accordingly.

- Mobilization/demobilization
- Multi-media sampling, including:
 - Surface Water
 - Surface Soils
 - Sediment
- GPS Surveying

The activities will be performed to identify the nature and extent of actual or potential site contamination. Any tasks to be conducted outside of the elements listed here will be considered a change in scope requiring modification of this document. Requested modifications to this document will be submitted to the HSM by the TOM or a designated representative.

5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES

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

Through using the table, site personnel can determine which hazards are associated with each task and at each site, and what associated control measures are necessary to minimize potential exposure or injuries related to those hazards. The table also assists field team members in determining which PPE and decontamination procedures to use based on proper air monitoring techniques and site-specific conditions.

As discussed earlier, a Health and Safety Guidance Manual accompanies this table and HASP. The manual is designed to further explain supporting programs and elements for other site -specific aspects as required by 29 CFR 1910.120. The Guidance Manual should be referenced for additional information regarding air monitoring instrumentation, decontamination activities, emergency response, hazard assessments, hazard communication and hearing conservation programs, medical surveillance, PPE, respiratory protection, site control measures, standard work practices, and training requirements. Many Tetra Tech NUS SOPs are also provided in this Guidance Manual.

Safe Work Permits issued for site activities (See Section 10.10) will use elements defined in Table 5-1 as its primary reference. The FOL and/or the SSO completing the Safe Work Permit will add additional site-specific information. In situations where the Safe Work Permit is more conservative than the direction provided in Table 5-1 due to the incorporation of site-specific elements, the Safe Work Permit will be followed.

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**TABLE 5-1
TASKS/HAZARDS/CONTROL MEASURES
NAVAL AIR STATION KEY WEST, KEY WEST, FLORIDA**

Tasks/Operation/ Locations	Anticipated Hazards	Recommended Control Measures	Hazard Monitoring	Personal Protective Equipment <i>Italicize text represents optional equipment to be worn when conditions require.</i>	Decontamination Procedures
Mobilization/ Demobilization	<p>Chemical hazards: Exposure to potential site contaminants during these activities is unlikely given the nature of mob/demob work and the limited contact with potentially contaminated media.</p> <p>Physical Hazards:</p> <ol style="list-style-type: none"> 1) Lifting (muscle strains and pulls) 2) Pinches and compressions 3) Slip, trips, and falls 4) Natural hazards (Insect/animal bites and stings) 5) Inclement weather 	<ol style="list-style-type: none"> 1) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques. 2) Use pinch bars or other equipment if caught in the machine point of operation. 3) Preview work locations for unstable/uneven terrain. Barricade all excavations from access closer than two feet from the edge. 4) Avoid nesting areas, use commercially available repellents. Report potential hazards to the SSO. 5) Suspend or terminate operations until directed otherwise by SSO. 	Not required	<p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> - Standard field attire (Sleeved shirt; long pants) - Steel toe safety shoes - Safety glasses - Hat to protect from UV rays from the sun. - Reflective vest for high traffic areas <p>Note: The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	Not required
Multi-media sampling including surface water, surface soil and sediment.	<p>Chemical hazards:</p> <ol style="list-style-type: none"> 1) SWMU 1 (Tar Tank Spill Area) - Various metals and pesticides were detected in surface water and sediments at concentrations that are not sufficient to present an inhalation exposure hazard to site personnel. <p>SWMU 2, (Former Boca Chica DDT Mixing Area) - Various metals, pesticides and SVOCs were detected in surface water and sediments at concentrations that are not sufficient to present an inhalation exposure hazard to site personnel.</p> <p>SWMU 5 (Former Boca Chica Blast Media Disposal Area) – Various metals It is unlikely that any of these will present a significant exposure hazard to site personnel.</p> <p>Further information on these contaminants is presented in Table 6-1.</p> <p>Physical hazards:</p> <ol style="list-style-type: none"> 2) Slip, trips, and falls 3) Heat/Stress 4) Water hazards 5) Natural hazards (Insect/animal bites and stings) 6) Inclement weather 	<ol style="list-style-type: none"> 1) Visually monitor sampling procedures, Avoid contact with potentially contaminated media. 2) Preview work locations for unstable/uneven terrain. 3) Wear appropriate clothing for weather conditions. Provide acceptable shelter and liquids for field crews. Additional information regarding heat stress concerns is provided in the TtNUS Health and Safety Guidance Manual. 4) While working in a boat, personnel shall wear U.S. Coast Guard-approved personal flotation devices (PFD). See Section 6 of this HASP for further information on types of PFD. TtNUS requires that each person wear a PFD and carry in the boat a sound producing device such as a portable air horn. When working on the shore, within 4 ft. of the water edge, lifelines, safety harnesses, and other personal safety devices may be used instead of a PFD. 5) Avoid nesting areas, use commercially available insect repellents. Report potential hazards to the SSO. Follow guidance presented in the Health and Safety Guidance Manual Report potential hazards to the SSO. 6) Suspend or terminate operations until directed otherwise by SSO 	Air monitoring is not required given that volatile contaminants are not likely to be present during surveying activities.	<p>Level D protection will be utilized for the initiation of all sampling activities.</p> <p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> - Standard field attire (Sleeved shirt; long pants) - Safety glasses - Surgical style gloves (double-layered if necessary) - Type III Personal flotation device at all times in boat. - Hat to protect from UV rays from the sun. - Snake chaps for marshy areas where encounters are likely. <p>Note: The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>Personnel Decontamination will consist of a removal and disposal of non-reusable PPE (gloves, coveralls, etc., as applicable). The decon function will take place at an area adjacent to the site activities. This procedure will consist of:</p> <ul style="list-style-type: none"> - Equipment drop - Outer coveralls, boot covers, and/or outer glove removal (as applicable) - Removal, segregation, and disposal of non-reusable PPE in bags/containers provided - Soap/water wash and rinse of reusable PPE (e.g., hardhat) if potentially contaminated - Wash hands and face, leave contamination reduction zone.
Global Positioning System (GPS) Survey	<p>Chemical hazards:</p> <p>Exposure to potential site contaminants during surveying activities is unlikely given the nature of surveying work and the limited contact with potentially contaminated media.</p> <p>Physical hazards:</p> <ol style="list-style-type: none"> 1) Slip, trips, and falls 2) Natural hazards (Insect/animal bites and stings, poisonous plants) 3) Inclement weather 	<ol style="list-style-type: none"> 1) Preview work locations and site lines for uneven and unstable terrain. Clear necessary vegetation and establish temporary means for traversing hazardous terrain (e.g. rope ladders). 2) Avoid potential nesting areas of biting/stinging insects and animals. Use commercially available insect repellents. Avoid contact with poisonous vegetation. Wear appropriate clothing. Tape ankle and wrists areas to prevent ticks, chiggers, etc. from attaching themselves to your skin. Wear light-colored clothing so that ticks and other biting insects can be easily visible and be removed. If working in areas where snakes are a threat, wear snake chaps to protect against bites. Follow directions as specified in section 6.3 concerning natural hazards. 3) All operations will be temporarily suspended during electrical storms. 	The potential for exposure to site contaminants during this activity is considered non-existent.	<p>Surveying activities shall be performed in Level D protection</p> <p>Level D Protection consists of the following:</p> <ul style="list-style-type: none"> - Standard field dress including sleeved shirt and long pants - Steel-toe work boots or shoes - Safety glasses, hard hats (if working near machinery) - Tyvek coveralls may be worn to provide additional protection against poisonous plants and insects, particularly ticks. - Work gloves may be worn if desired. - Snake chaps for marshy areas where encounters are likely. <p>Note: The Safe Work Permit(s) for this task (see Attachment III) will be issued at the beginning of each day to address the tasks planned for that day. As part of this task, additional PPE may be assigned to reflect site-specific conditions or special considerations or conditions associated with any identified task.</p>	<p>Personnel Decontamination - A structured decontamination is not required, as the likelihood of encountering contaminated media is considered remote. However, survey parties should inspect themselves and one another for the presence of ticks when exiting wooded areas, grassy fields, etc. This action will be used to stop the transfer of these insects into vehicles, homes, and offices.</p>

6.0 HAZARD ASSESSMENT AND CONTROLS

This section provides reference information regarding the chemical and physical hazards which may be associated with activities that are to be conducted as part of the scope of work. Table 6-1 provides specific information related to the various chemical hazards that may be present at the planned project areas within NAS Key West. Specifically, toxicological information, exposure limits, symptoms of exposure, physical properties, and air monitoring and sampling data are discussed in the table.

6.1 CHEMICAL HAZARDS

Data provided in the January 2006 Annual Performance Monitoring Program regarding potential sources of contamination indicates that low levels of inorganics (metals), semi volatile organics and pesticides are present in surface water and sediments. Chemicals of concern include:

- SVOC's including:
 - General PAH'S
- Metals including:
 - Arsenic
 - Cadmium
 - Lead
- Pesticides including:
 - DDT

Exposure to chemical hazards while performing the elements identified within the scope of work is considered to be minimal to non existent because the activity is un-intrusive. This assessment is based on the number of locations to be investigated, the method of extraction, and the contaminant concentrations identified during prior sampling programs. The chemicals listed in Table 6-1 are representative of the types of contamination found in sediment and surface water at Sites 1, 2 and 5.

TABLE 6-1

**CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA
FOR NAVAL AIR FACILITY KEY WEST
KEY WEST, FLORIDA**

Substance	CAS No.	Air Monitoring	Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
General PAHs / Coal Tar Pitch Volatiles / Creosote / cresol (Fluoranthene, pyrene, benzo(a) anthracene, benzo(a) pyrene, benzo(f)fluoranthene, benzo(k)fluoranthene), etc.)	(CAS Numbers vary depending on specific compound)	PID: I.P. of 8.97 eV, relative response ratio unknown. FID: Response factor unknown but given the substances flammability, detection by FID can be anticipated.	General PAHs: Most PAHs have no established exposure limits. Other Coal Tar Pitch Volatiles / PAHs such as chrysene and benzo(a)pyrene have an exposure limit of 0.2 mg/m3 (OSHA and ACGIH). NIOSH; 0.1 mg/m3 Creosote / Cresol: OSHA; ACGIH: 5 ppm skin NIOSH: 2.3 ppm IDLH: 250 ppm	Adequate - use a full-face air-purifying respirator with organic vapor / dust/mist cartridge up to 250 ppm. Cresol has an Odor Threshold of 0.00005-0.0079 ppm. Recommended gloves: Viton >96.00 hrs; butyl rubber >90.00 hrs; neoprene >4.50 hrs	Properties of various PAHs/Coal Tar Pitch Volatiles vary depending upon the specific compound. For Creosote/Cresol: Boiling Pt: 376-397°F; 191-203°C Melting Pt: 52-96°F; 10.9-35.5°C Solubility: Insoluble Flash Pt: 178°F; 81°C LEL/LFL: Not available UEL/UFL: Not available Vapor Density: 3.72 Vapor Pressure: 1 mmHg @ 100-127°F; 38-53°C Specific Gravity: 1.030-1.038 Incompatibilities: Nitric acid, oleum, chlorosulfonic acid, oxidizers Appearance and Odor: Yellowish or colorless, flammable, oily liquid (often brownish because of impurities or oxidation)	Regulated based on effects on respiratory tract and skin irritation Other effects may include eye irritation and central nervous system, disturbances. Acute exposures may result in difficulty breathing, respiratory failure and skin and eye irritation and burns. Chronic exposure may damage the liver, kidneys, lungs and skin and cause photosensitivity. IARC, NTP, NIOSH, ACGIH, and the EPA list some PAHs such as benzo(a)pyrene as a potential carcinogen (ARC 2A, NTP-2, ACGIH TLV-A2, NIOSH-X, EPA-B2).
Arsenic	7440-38-2	Particulate form - This substance is unable to be detected by PID/FID.	OSHA: Organic compounds 0.5 mg/m ³ Inorganic compounds 0.01 mg/m ³ NIOSH: (Ceiling) 0.002 mg/m ³ ACGIH: 0.2 mg/m ³ IDLH: 5 mg/m ³ as arsenic	No identifiable warning properties to indicate presence and thereby detection. Recommended APR Cartridge: Suitable for dust and fume. Organic vapor acid gases with HEPA filter. This substance may be presented as a pesticide, therefore a cartridge suitable for pesticides (MSA-GMP). Recommended Gloves: This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	Boiling Pt: sublimation @ 1134°F; 612° C Melting Pt: 1497°F; 814°C @ 36 atm Solubility: Insoluble in water; soluble in nitric acid Flash Pt: Nonflammable, however, airborne in the form of a dust this substance will support combustion LEL/LFL: Nonflammable UEL/UFL: Nonflammable Vapor Density: Not available Vapor Pressure: 1 mmHg @ 372°C (sublimes) Specific Gravity: 5.73 Incompatibilities: Oxidizers, halogens, zinc, lithium, azides, and acetylides Appearance and odor: Gray to black, brittle, crystalline, amorphous, odorless.	Overexposure to this substance through inhalation or ingestion may result in ulceration of the nasal septum, GI disturbances resulting in violent purging and vomiting, hoarse voice, sore throat, excessive salivation, peripheral neuropathy (numbness and burning sensations beginning at the extremities followed by motor weakness), respiratory irritation leading to possible pulmonary edema. Skin or eye contact may result in irritation, conjunctiva, dermatitis, and hyperpigmentation (darkening of the areas exposed) of the skin. This substance has been judged to be a Human carcinogen by NTP, and IARC.

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**TABLE 6-1
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA
FOR NAVAL AIR FACILITY KEY WEST
KEY WEST, FLORIDA**

Substance	CAS No.	Air Monitoring	Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
Cadmium	7440-43-9	Particulate Form - Unable to be easily detected by PID or FID.	OSHA: 2 µg/m ³ (0.002 mg/m ³) ACGIH: 0.01 mg/m ³ (total particulate) 0.002 mg/m ³ (respirable particulate) IDLH: 9 mg/m ³ (as cd)	The use of an air purifying, full face- piece respirator with a high efficiency particulate air filter for concentrations up to 0.25 mg/m ³ . Recommended Gloves: This is in particulate form. Therefore any glove suitable to prevent skin contact.	Boiling Pt: 1412°F; 767°C Melting Pt: 610°F; 321°C Solubility: Insoluble Flash Pt: Not applicable (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals) LEL/LFL: Not applicable UEL/UFL: Not applicable Vapor Density: Not available Vapor Pressure: 1 mmHg @ 741°F; 394°C Specific Gravity: 8.65 @ 90°F; 32°C Incompatibilities: Strong oxidizers, elemental sulfur, selenium, tellurium, zinc, nitric acid, and hydrazoic acid Appearance and Odor: Metal: Silver-white, blue-tinged lustrous, odorless solid. Fume: yellow-brown, finely divided particulate dispersed in air.	Overexposure to this substance may result in irritation to the respiratory tract, dyspnea, tightness in the chest, coughing, possibly pulmonary edema. Overexposure to fumes causes symptoms characteristic of the flu (headaches, chills, muscle aches, nausea, vomiting, diarrhea). Chronic exposure may result in damage to the lungs, kidneys and liver. This substance has been identified as a confirmed animal; potential human carcinogen by IARC and NTP.
Lead	7439-92-1	Particulate form - Unable to be detected by either PID or FID.	OSHA: 0.05 mg/m ³ ACGIH: 0.15 mg/m ³ NIOSH: 0.10 mg/m ³ IDLH: 100 mg/m ³ as lead	The use of a air purifying, full-face respirator with high efficiency particulate air filter for up to 2.5 mg/m ³ . Recommended gloves: This is in the particulate form. Therefore any glove suitable to prevent skin contact (Nitrile has been the one most widely used for the other substances).	Boiling Pt: 3164°F; 1740°C Melting Pt: 621°F; 327°C Solubility: Insoluble Flash Pt: Not applicable (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals) LEL/LFL: Not applicable UEL/UFL: Not applicable Vapor Density: Not available Vapor Pressure: 0 mmHg Specific Gravity: 11.34 Incompatibilities: Strong oxidizers, peroxides, sodium acetylde, zirconium, and acids Appearance and Odor: Metal: A heavy ductile, soft gray solid.	Overexposure to this substance via ingestion or inhalation may result in metallic taste in the mouth, dry throat, thirst, Gastrointestinal disorders (burning stomach pain, nausea, vomiting, possible diarrhea sometimes bloody or black, accompanied by severe bouts of colic), CNS effects (muscular weakness, pain, cramps, headaches, insomnia, depression, partial paralysis possibly coma and death. Extended exposure may result in damage to the kidneys, gingival lead line, brain, and anemia.

**TABLE 6-1
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA
FOR NAVAL AIR FACILITY KEY WEST
KEY WEST, FLORIDA**

Substance	CAS No.	Air Monitoring	Exposure Limits	Warning Property Rating	Physical Properties	Health Hazard Information
DDT and the major metabolites; DDD and DDE.	50-29-3 72-54-8 72-55-9	Substance is not volatile, I.P. is unknown, and detection by PID is unknown. Substance non-combustible, therefore a FID is anticipated to have reduced response to DDT.	OSHA; ACGIH: 1 mg/m ³ NIOSH: 0.5 mg/m ³	Adequate - Can use air purifying respirator with high efficiency particulate air filter (HEPA). Recommended glove: Nitrile acceptable for incidental contact.	Boiling Pt: 230°F; 110°C Melting Pt: 226°F; 108°C Solubility: Insoluble Flash Pt: 162-171°F; 72-77°C LEL/LFL: Not available UEL/UFL: Not available Vapor Density: Not available Vapor Pressure: Low Specific Gravity: 0.99 Incompatibilities: Strong oxidizers and alkalis Appearance and Odor: Colorless crystals or off-white powder with a slight aromatic odor	Large doses are followed by vomiting due to gastric irritation, diarrhea may follow. Numbness and paresthesias of the lips tongue and face associated with malaise, headache, sore throat, fatigue and weakness. Coarse tremors (usually first of the neck, head, and eyelids). This may be accompanied by confusion, apprehension, and depression. Convulsions may result and death may occur from respiratory failure. DDT is absorbed and retained in the fat of humans. Chronic exposure may result in damage to the liver, kidneys and Peripheral Nervous System. DDT is recognized as possessing carcinogenic properties by IARC and NTP.

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6.2 PHYSICAL HAZARDS

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

6.2.1 Heat Stress

Overexposure to high ambient temperatures (heat stress) may exist during performance of this work depending on the project schedule. Extremely cold temperatures are not expected to be encountered due to project location. Work performed when ambient temperatures exceed 70°F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content. Additionally, workload and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration.

Temperature extremes are considered inclement weather. Steps should be taken to the extent possible protect site personnel from the effects of heat stress and the sun. Control measures include:

- Watch for signs of heat stress/exhaustion, See Heat Strain Symptoms Table below.
- Provide fluid replacement – Bottled containers or bulk containers with single serving cups kept clean and sanitary may be employed. Note: Multiple serving or bulk containers require that they be cleaned and sanitized daily prior to filling.
- Provide adequate number of breaks within a cooler environment.

Care should be taken when working outdoors due to harmful effects of the sun. Reduce the potential for sunburn and melanoma by taking the following precautions.

- Wear a hat that shades the face, neck, and ears.
- Liberally apply sunscreen with a SPF of 15 or higher at least 15 minutes prior to exposure, then at least every two hours, (more when perspiring heavily).
- When practical, provide shade when working in the midday sun. The sun's ultraviolet rays are most intense between 10 A.M. and 4 P.M. and can damage skin even on hazy days.

- Wear wrap-around sunglasses to protect the eyes and delicate skin around them.

6.2.2 Slip, Trip and Fall Hazards

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

- Maintain proper housekeeping in the work areas.
- Preview and inspect work areas to identify and eliminate slip, trip, or fall hazards. In outdoor locations, pay particular attention to sink holes or other depressions that may be encountered.
- Any work that is to be done on structures that are more than 6-feet above floor or ground level will require fall protection training and the use of 100% fall protection equipment.
- Cover, guard, barricade, and/or place warning postings over/at holes or openings that personnel may fall or step into.
- For traversing steep, slippery, or sloped terrain establish rope ladders to control ascent and descent to sampling areas or use alternative pathways.

6.2.3 Strains/Muscle Pulls

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

- First estimate the weight and configuration of the load (i.e., is it bulky or hard to safely grasp/lift/control). If it appears to be too heavy or bulky to safely handle alone, either use a mechanical lifting device or obtain help from another employee to lift the load (Note: The use of mechanical lifting devices is always preferable over manual lifting).

- Bend at the knees (not at the waist) when attempting a lift.
- Ensure that a firm hold is obtained, and keep the load as close to the body as possible.
- Lift the load using your legs, and not the back.
- Avoid turning or twisting while holding a load.
- If the load is to be moved, preview the path of travel first to identify and eliminate any tripping hazards.
- Do not attempt to carry loads that obstruct the line of sight.
- When setting a load down, again use the leg muscles and do not bend at the waist.
- Break loads into smaller amounts for travel to remote locations.
- Where possible use mechanical equipment to transport equipment and resources to the desired location.

6.3 NATURAL HAZARDS

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

6.3.1 Insect/Animal Bites and Stings

Fire Ants

Various insects and animals may be present and should be considered. For example, fire ants present a unique situation when working outdoors in Florida. Their aggressive behavior and their ability to sting repeatedly can pose a unique health threat. The sting injects venom (formic acid) that causes an extreme burning sensation. Pustules form which can become infected if scratched. Allergic reactions of people sensitive to the venom include dizziness, swelling, shock and in extreme cases unconsciousness and death. People exhibiting such symptoms should see a physician. Fire ants can be identified by their habitat. They build mounds in open sunny areas sometimes supported by a wall or shrub. The mound

has no external opening. The size of the mound can range from a few inches across to some which are in excess of two feet or more in height and diameter. When disturbed the ants defend by swarming out and over the mound, even running up grass blades and sticks.

Also, areas to be investigated could be prime nesting and/or hiding locations for snakes and other insects. Personnel should avoid reaching into areas that are not visibly clear of snakes or insects. Snake chaps will be worn in areas of known or anticipated snake infestation. Site personnel who are allergic to stinging insects, such as bees, wasps, and hornets, must be particularly careful because 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 and the FOL and SSO notified.

Alligators

Alligators live in all Florida counties but are most common in the major river drainage basins and large lakes in the central and southern portions of the state. They also can be found in marshes, swamps, ponds, drainage canals, phosphate-mine settling ponds, and ditches. Alligators are tolerant of poor water-quality and occasionally inhabit brackish marshes along the coast. A few even venture into salt water.

Mature alligators seek open water areas during the April-to-May courtship and breeding season. After mating, the females move into marsh areas to nest in June and early July where they remain until the following spring. Males generally prefer open and deeper water year-round. Alligators less than four feet long typically inhabit the marshy areas of lakes and rivers. Dense vegetation in these habitats provides protective cover and many of the preferred foods of young alligators.

- Most human attacks associated with alligators occur when they have been fed by humans or when defending their nests.
- Under no circumstances should you approach an alligator closely. They are quite agile, even on land. As with any wild animal, alligators merit a measure of respect.
- Alligators are classified as a threatened species and thus enjoy the protection of state and federal law. Only representatives of the Florida Game and Fresh Water Fish Commission are empowered to handle nuisance alligators.
- It is illegal to feed, tease, harass, molest, capture or kill alligators.

- If a serious problem does exist, contact the Florida Game and Fresh Water Fish Commission.

Ticks

There are various areas throughout the U.S. where Lyme disease is endemic. The risk of infection is much lower in Florida than in more northern areas due to several ecological features of the tick population. There have been 30-50 cases per year diagnosed in the late 1990s; about half of which can be traced to infection outside of the state. By comparison, New York typically has 3000-5000 cases per year; clearly there is a much lower risk of infection in Florida. Nonetheless, personnel should be aware of the hazards of tick bites and Lyme Disease. The longer a disease carrying tick remains attached to the body, the greater the potential for contracting the disease.

- Wear long sleeved shirts and long pants (tucked into boots).
- Wear insect repellent containing DEET - concentrations at 10% - 15% are sufficient (use as directed).
- Perform frequent body checks to 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.

6.3.2 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.

Tropical Storms and Hurricanes

As Florida is a tropical storm, hurricane prone area, the following information is supplied to explain the potential severity of these natural hazards. The decision to curtail operations and evacuate the area should be made by the FOL, PM, and the HSM.

During the early summer to late fall months, typically from the first of June through the end of November, disturbances migrating off the West Coast of Africa move into the Atlantic Ocean and develop into tropical cyclones known as tropical storms and hurricanes. Many of these cyclones become strong enough to threaten life and property along the Eastern Seaboard and Gulf Coast. There are three main threats associated with tropical storms and hurricanes:

- High winds
- Excessive rainfall
- Storm surge

The impacts of high winds and excessive rainfall occur hours, maybe days, before the tropical storm or hurricane makes landfall. However, the storm surge accompanies the storm or hurricane at the time that landfall occurs.

High Winds

Sustained winds vary greatly from storm to storm, but can range from 39 to 73 miles per hour (wind speeds associated with a tropical storm) to greater than 74 miles per hour (minimal wind speed for a Category 1 hurricane). Table 6-2 compares the type of storm or hurricane and the corresponding wind speed.

**TABLE 6-2
TROPICAL STORM/HURRICANE RATING SCALE**

TYPE	CATEGORY*	WINDS (MPH)
Tropical Depression	NA	>35-38
Tropical Storm	NA	39 – 73
Hurricane	1	74 – 95
Hurricane	2	96 – 110
Hurricane	3	111 – 130
Hurricane	4	131 – 155
Hurricane	5	>155

Based on the Saffir-Simpson scale
NA – Not Applicable

In addition to strong winds, there is the threat of debris (i.e. building material, trees, etc.) becoming airborne projectiles as they are carried by the high winds. Thunderstorms and tornadoes embedded within the tropical storm or hurricane can further increase the wind speeds on a localized level.

Excessive Rainfall

Heavy rains associated with tropical storms and hurricanes also vary greatly from storm to storm. On average, an inch of rainfall an hour is not uncommon with major hurricanes, somewhat lesser amounts with tropical storms. However, the primary threat is not the intensity of rain, but the duration of rainfall. Since many tropical storms and hurricanes are slow-movers, they are capable of producing sustained heavy rainfall over a long period of time. It is not uncommon for an area to receive nearly 20 inches of rain in 24 hours. Under these conditions, street; stream and creek flooding is inevitable only to be exacerbated by locally heavier rains from thunderstorms.

Storm Surge

The storm surge is an abnormal rise in sea level accompanying a hurricane or tropical storm. The height of the storm surge (usually measured in feet) is the difference in sea level from the observed level (during the storm) and the level that would have occurred in the absence of the storm or hurricane. The more intense the storm or hurricane the higher the storm surge. Storm surges become even higher if they occur during periods of high tide. Table 6-3 defines some of the terminology and possible calls to action regarding tropical cyclones:

**TABLE 6-3
TROPICAL STORM/HURRICANE
WATCH AND WARNING**

STORM DESCRIPTION	DEFINITION	CALL TO ACTION
Tropical Storm Watch	Tropical storm conditions are possible in the specified area of the watch, usually within 36 hours	Weather conditions should be monitored for further advisories. Prepare for possible evacuation by local officials
Tropical Storm Warning	Tropical storm conditions are expected in the specified area of the warning, usually within 24 hours.	Work should be suspended in areas where lightning, high winds and rainfall could pose a threat to life. Mandatory evacuations may be enforced by local officials.
Hurricane Watch	Hurricane conditions are possible in the specified area of the watch, usually within 36 hours.	Weather conditions should be monitored for further advisories. Prepare for possible evacuation by local officials
Hurricane Warning	Hurricane conditions are expected in the specified area of the warning, usually within 24 hours.	Mandatory evacuations will most likely be enforced by local officials.

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.

6.3.3 Heat Stress

Given the geographic location of the site and the project schedule, overexposure to high ambient temperatures (heat stress) may exist during performance of this work depending on the project schedule. Work performed when ambient temperatures exceed 70 °F may result in varying levels of heat stress (heat rash, heat cramps, heat exhaustion, and/or heat stroke) depending on variables such as wind speed, humidity, and percent sunshine, as well as physiological factors such as metabolic rate and skin moisture content.

Additionally, work load and level of protective equipment will affect the degree of exposure. Site personnel will be encouraged to drink plenty of fluids to replace those lost through perspiration. Additional information such as Work-Rest Regimens and personnel monitoring may be found in Section 4.0 of the Health & Safety Guidance Manual.

Many of these physical hazards are discussed in detail in Section 4.0 of the Health and Safety Guidance Manual. Additional information regarding physical hazards associated with the site is provided in Table 5-1 of this HASP.

6.4 WATER HAZARDS

Planned activities involve locations that are near bodies or on bodies of water. Sampling activities will be conducted from the water edge, wading out a short distance from the shore or from a non-motorized boat. To avoid potential hazards associated with working near water (drowning), the field team shall employ lifelines (tie-off procedure), safety harnesses, when within 4 feet of the water edge.

When working out of a canoe or other boat, U.S. Coast Guard (USCG) approved personal flotation devices (PFD) will be used. Due to the obvious hazards associated with working on or near water edge during inclement weather, all field activities may be temporarily suspended or terminated at the discretion and direction of the FOL or SSO. The U.S.C.G. requires all boats to have one personal flotation device per person and a sound producing device such as an air horn or whistle which can be heard one half mile.

6.4.1 U.S.C.G. Flotation Device Types

Use the following information to determine the proper type of U.S.C.G. PFD.

Off Shore Life Jacket (Type I, 22 lbs buoyancy)

Type I life jacket is the best choice for rough or open waters. This type will float you the best and is favorable if rescue may be long in coming. This type will turn an unconscious person upright in the water. Though is bulky it does have a highly visible color for easier detection.

Near Shore Buoyant Vest (Type II, 15.5 lbs buoyancy)

Type II is a good choice for calmer waters. It will turn most unconscious persons face-up in the water. Though it is less bulky than Type I, it is not intended for long hours in calm or rough water.

Flotation Aid (Type III, 15.5 lbs buoyancy)

Type III is probably the most comfortable device offering more freedom of movement, such as taking water samples, but is not intended for rough water. Also, an unconscious person may end up face-down in the water.

Throwable Devices (Type IV)

Throwable devices are intended for calm waters with heavy boat traffic where help is always close. It is not intended for unconscious persons or non-swimmers or long hours in the water. They are good backups for the other devices.

All personnel shall wear Type III personal flotation devices in the event someone falls overboard, boats sinks or capsizes. Type IIIs were selected as they offer the most flexibility for working while still meeting minimum requirements for buoyancy. In situations where personal flotation devices cannot be worn due to the task to be conducted, the flotation devices shall be immediately available/accessible. It is recommended that personal flotation devices be worn at all times during colder months due to the potential for hypothermia to restrict muscle movement and therefore, self rescue and maintaining buoyancy. In addition, a single Type IV Throwable Flotation Device shall be maintained on board the boat with at least 90 feet of 3/8 polypropylene line.

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

7.0 AIR MONITORING

Data from the January 2006 Annual Performance Monitoring indicates that potential contaminants of concern are low levels of inorganics, semi volatiles, pesticides, found in surface water and sediment. As a result direct reading instruments are unable to monitor worker exposures at the sites.

Should site conditions change to warrant air monitoring, as determined by the FOL and/or SSO, this HASP will be modified accordingly and personnel will be trained on the need for and use of direct reading instrument(s).

8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS

8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING

This section specifies health and safety training and medical surveillance requirements for both Tetra Tech NUS and subcontractor personnel participating in on site activities. Tetra Tech NUS and subcontractor personnel who will engage in field associated activities as described in this HASP must have:

- Completed 40 hours of introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e).
- Completed 8-Hour Refresher Training, if the identified persons had introductory training more than 12 months prior to site work.
- Completed 8-hour Supervisory training in accordance with 29 CFR 1910.120(e)(4), if their assigned function will involve the supervision of subordinate personnel.

Documentation of introductory training or equivalent work experience, 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

Tetra Tech NUS will provide site-specific training to Tetra Tech NUS employees and subcontractor personnel 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.

TtNUS will conduct a pre-activities training session prior to initiating site work. Additionally, a brief meeting will be held daily to discuss operations planned for that day. At the end of the workday, a short meeting may be held to discuss the operations completed and any problems encountered. This activity will be supported through the use of a Safe Work Permit System (See Section 10.10).

8.3 MEDICAL SURVEILLANCE

Tetra Tech NUS and subcontractor personnel participating in project field activities will have had a physical examination. Physical examinations shall meet the minimum requirements of paragraph (f) of OSHA 29 CFR 1910.120. The physical examinations will be performed to ensure that personnel are medically qualified to perform hazardous waste site work using respiratory protection.

Documentation for medical clearances will be maintained at the job site and made available, as necessary. Subcontractor personnel may use an alternative documentation for this purpose. The "Subcontractor Medical Approval Form" can be used to satisfy this requirement, or a letter from an officer of the company. The letter should state that the persons listed in the letter participate in a medical surveillance program meeting the requirements contained in paragraph (f) of Title 29 of the Code of Federal Regulations (CFR), Part 1910.120, entitled "Hazardous Waste Operations and Emergency Response." The letter should further state the following:

- The persons listed have had physical examinations under this program within the frequency as determined sufficient by their occupational health care provider
- Date of the exam
- The persons identified have been cleared, by a licensed physician, to perform hazardous waste site work and to wear positive- and negative- pressure respiratory protection.

A sample Subcontractor Medical Approval Form and form letter have been provided to eligible subcontractors in the Bid Specification package.

8.3.1 Medical Data Sheet

Each field team member, including subcontractors and visitors, entering the exclusion zone(s) shall be required to complete and submit a copy of the Medical Data Sheet also supplied to eligible subcontractors as part of the Bid Specifications Package and is available in Attachment V 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 SUBCONTRACTOR EXCEPTION

If through the execution of their contract elements the subcontractor will not enter the exclusion zone and there is no potential for exposure to site contaminants, subcontractor personnel may be exempt from the training and medical surveillance requirements with the exception of Section 8.2. Examples of subcontractors who may qualify as exempt from training and medical surveillance requirements may include surveyors who perform surveying activities in site perimeter areas or areas where there is no potential for exposure to site contaminants and support or restoration services. **Use of this Subcontractor Exception is strictly limited to the authority of the CLEAN Health and Safety Manager.**

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 fractured three-zone approach will be used during work at this site. This three zone approach will utilize an exclusion zone, a contamination reduction zone, and a 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 the potential for the spread of contaminants, and protect individuals who are not cleared to enter work areas.

9.1 EXCLUSION ZONE

The Exclusion Zone will be considered those areas of active operations plus an established safety zone depending on the task. For the tasks of sediment and surface soil sampling the exclusion zone will be 5 feet surrounding the sample collection point or point of excavation.

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. Decontamination will be conducted at a central location. Equipment potentially contaminated will be bagged and taken to that location for decontamination. Given this consideration, equipment required to complete this operation may include hand augers and stainless steel bowls and spatulas for each location.

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 activities conducted in support of this project will be done so using this HASP as a reference guide and Safe Work Permits to incorporate site-specific information to guide and direct field crews on a task by task basis. An example of the Safe Work Permit to be used during site activities is

illustrated in Figure 9-1. Permits will be issued by the SSO in the morning prior to the beginning of on site activities. Partially completed Safe Work Permits are included in Attachment III of this HASP.

Safe Work Permits are to be completed in accordance with the specifications contained in Table 5-1 and the other sections of the HASP as appropriate.

Personnel identified on the permit as participating in the task will be made aware of its contents by the supervisor accepting the permit. Any problems which occurred throughout the task will be documented by the supervisor on the permit.

Permits will be returned to the FOL or the SSO at the end of the day.

9.5 SITE VISITORS

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

- Personnel invited to observe or participate in operations by TtNUS
- Regulatory personnel (i.e., DOD, EPA, OSHA)
- US Navy Personnel
- Other authorized visitors

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

Once access to the base is obtained, personnel who require site access into areas of ongoing operations will be required to obtain permission from the FOL and the Base Contact. Upon gaining access to the site, site visitors wishing to observe operations in progress will be escorted by TtNUS representative and shall be required to meet the minimum requirements discussed below:

- Site visitors will be routed to the FOL, who will sign them into the field logbook. Information to be recorded in the logbook will include the individual's name (proper identification required), the entity which they represent, and the purpose of the visit.
-

**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 include _____

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

Respiratory equipment required

Yes Specify on the reverse
 No

Modifications/Exceptions: _____

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 Yes No
 Safety Glasses Yes No
 Chemical/splash goggles Yes No
 Splash Shield Yes No
 Splash suits/coveralls Yes No
 Impermeable apron Yes No
 Steel toe Work shoes or boots ... Yes No
 High Visibility vest Yes No
 First Aid Kit Yes No
 Safety Shower/Eyewash Yes No

Hearing Protection (Plugs/Muffs) Yes No
 Safety belt/harness Yes No
 Radio/Cellular Phone Yes No
 Barricades Yes No
 Gloves (Type –) Yes No
 Work/rest regimen Yes No
 Chemical Resistant Boot Covers Yes No
 Tape up/use insect repellent Yes No
 Fire Extinguisher Yes No
 Other Yes No

Modifications/Exceptions: _____

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: _____

- Site visitors will be required to produce the necessary information supporting clearance to the site. This shall include information attesting to applicable training and medical surveillance as stipulated in Section 8.0 of this document. In addition, to enter the site operational zones during planned activities, visitors will be required to first go through site-specific training covering the topics stipulated in Section 8.2 of this HASP.

Once the site visitors have completed the above items, they will be permitted to enter the operational zone. Visitors are required to observe the protective equipment and site restrictions in effect at the site at the time of their visit. Visitors entering the exclusion zones during ongoing operations will be accompanied by a TtNUS representative. Any visitors not meeting the requirements, as stipulated in this plan, for site clearance will not be permitted to enter the site operational zones during planned activities. Any incidence of unauthorized site visitation will cause the termination of site activities until the unauthorized visitor is removed from the premises. Removal of unauthorized visitors will be accomplished with support from the Base Contact. If necessary, the Base Contact will be notified of any unauthorized visitors.

9.6 SITE SECURITY

Site security will be accomplished using TtNUS field personnel. TtNUS will retain complete control over active operational areas. As this activity takes place at a Navy facility open to public access, the first line of security will take place using exclusive zone barriers, site work permits, and any existing barriers at the sites to restrict the general public. The second line of security will take place at the work site referring interested parties to the Base Contact. The Base Contact will serve as a focal point for base personnel, interested parties, and serve as the final line of security and the primary enforcement contact.

9.7 SITE MAP

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

9.8 BUDDY SYSTEM

Personnel engaged in on site activities will practice the "buddy system" to ensure the safety of the 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 crew 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 at the NAS Key West, the FOL will determine and arrange for telephone communications.

10.0 SPILL CONTAINMENT PROGRAM

10.1 SCOPE AND APPLICATION

It is anticipated that quantities of bulk potentially hazardous materials (greater than 55-gallons) will not be handled during the site activities. It is possible, however, that as the job progresses disposable PPE and other non-reusable items may be generated. As needed, 55-gallon drums may be used to contain unwanted items generated during sampling activities. The drum(s) will be labeled with the site name and address, the type of contents, and the date the container was filled as well as an identified contact person. As warranted, samples will be collected and analyzed to characterize the material and determine appropriate disposal measures. Once characterized the drum(s) will be removed from the staging area and disposed of in accordance with Federal, State and local regulations. Given the likely solid nature of drum contents, a comprehensive Spill Containment Program is not necessary. The following discussion is provided as contingency information only.

10.2 POTENTIAL SPILL AREAS

Should drums contain liquid wastes, potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Areas designated for handling, loading, and unloading of potentially contaminated waters and debris present limited potential for leaks or spills.

10.3 LEAK AND SPILL DETECTION

To establish an early detection of potential spills or leaks, periodic inspections by the SSO will be conducted during working hours to visually determine that containers are not leaking. If a leak is detected, the first approach will be to transfer the container contents using a hand pump into a new container. Other provisions for the transfer of container contents will be made and appropriate emergency contacts will be notified, if necessary. In most instances, leaks will be collected and contained using absorbents such as Oil-dry, vermiculite, and/or sand, which may be stored at the staging area in a conspicuously marked drum. This material too, will be containerized for disposal pending analyses. The inspections will be documented in the Project Logbook.

10.4 PERSONNEL TRAINING AND SPILL PREVENTION

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

10.5 SPILL PREVENTION AND CONTAINMENT EQUIPMENT

The following represents the types of equipment that may be maintained at the staging area for the purpose of supporting this Spill Containment Program (depending on the likelihood that drums and/or liquid wastes are generated):

- Sand, clean fill, vermiculite, or other noncombustible absorbent (oil-dry);
- Drums (55-gallon U.S. DOT 17-E or 17-H)
- Shovels, rakes, and brooms
- Labels

10.6 SPILL CONTROL PLAN

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

- 1) Notify the SSO or FOL immediately.
- 2) Take immediate actions to stop the leak or spill by plugging or patching the drum or raising the leak to the highest point. Avoid contacting drum contents. Spread the absorbent material in the area of the spill covering completely.

It is not anticipated that a spill will occur in which the field crews cannot handle. Should this occur; however, the FOL or SSO will notify appropriate emergency response agencies.

11.0 CONFINED-SPACE ENTRY

It is not anticipated, under the proposed scope of work, that confined space and permit-required confined space activities will be conducted. **Therefore, personnel under the provisions of this HASP are not allowed, under any circumstances, to enter confined spaces.** A confined space is defined as an area which has one or more of the following characteristics:

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

A Permit-Required Confined Space is one that:

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

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

12.0 MATERIALS AND DOCUMENTATION

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

- A complete copy of this HASP
- Health and Safety Guidance Manual
- Incident Reports
- Medical Data Sheets
- Material Safety Data Sheets for the chemicals brought on site, including decon solutions, fuels, lime, sample preservatives, calibration gases, etc.
- A full-size OSHA Job Safety and Health Poster (posted in the site trailers)
- Training/Medical Surveillance Documentation Form (Blank)
- Emergency Reference Information (Section 2.0, extra copy for posting)

12.1 MATERIALS TO BE POSTED OR MAINTAINED AT THE SITE

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

Chemical Inventory Listing (posted) - This list represents 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 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 list indicates not only clearance but also status. If personnel do not meet these requirements, they do not enter the site while site personnel are engaged in activities.

Emergency Phone Numbers and Directions to the Hospital(s) (posted) - This list of numbers and directions will be maintained at 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. A copy of this sheet or a wallet card will be given to the personnel to be carried on their person.

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

Personnel Monitoring (maintained) - 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 of maintaining or posting this information, as stated above, is to allow site personnel quick access. Variations concerning location and methods of presentation are acceptable, providing the objection is accomplished.

13.0 ACRONYMS / ABBREVIATIONS

CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CLEAN	Comprehensive Long Term Environmental Action Navy
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
DOD	Department of Defense
DOT	Department of Transportation
EPA	Environmental Protection Agency
FOL	Field Operations Leader
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSM	Health and Safety Manager
IDW	Investigation Derived Waste
LEL/LFL	Lower Explosive Limits / Lower Flammable Limits
mg/kg	milligrams per kilogram
MSDS	Material Safety Data Sheet
NAS	Naval Air Station
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PHSO	Project Health and Safety Officer
PPE	Personal Protective Equipment
SMWU	Solid Waste Management Unit
SSO	Site Safety Officer
SVOCs	Semi-Volatile Organic Compounds
TBD	To be determined
TOM	Task Order Manager
TtNUS	Tetra Tech NUS
UEL / UFL	Upper Explosive Limits / Upper Flammable Limits
VOCs	Volatile Organic Compounds

ATTACHMENT I

**INJURY/ILLNESS PROCEDURE
AND REPORT FORM**

TETRA TECHNUS, INC.

INJURY/ILLNESS PROCEDURE WORKER'S COMPENSATION PROGRAM

WHAT YOU SHOULD DO IF YOU ARE INJURED OR DEVELOP AN ILLNESS AS A RESULT OF YOUR EMPLOYMENT:

- Stop work as needed to ensure no further harm is done.
- If injury is minor, obtain appropriate first aid treatment.
- If injury or illness is severe or life threatening, obtain professional medical treatment at the nearest hospital emergency room. Check with your office location or project health and safety plan for specific instructions.
- If incident involves an injury, illness, or chemical exposure on a project work site, follow instructions in the Health & Safety Plan.
- Immediately report any injury or illness to your supervisor or office manager. In addition, you must contact your Human Resources representative, Marilyn Duffy at (412) 921-8475, and the Corporate Health and Safety Manager, Matt Soltis at (412) 921-8912 within 24 hours of the injury. You will be required to complete an [Injury/Illness Report](#). You may also be required to participate in a more detailed investigation with the Health Sciences Department.
- In the event of a serious near-miss incident, a "Serious Near Miss Report" (Form AR-2, available online at <https://go2.tetrattech.com> under "Departments", "Health and Safety", "Accident Reporting Procedures", hyperlink for "Serious Near Miss Report") must be completed and faxed to the Corporate Health and Safety Manager within 48 hours.
- If further medical treatment is needed, our insurance carrier, ACE, will provide information on the authorized providers customized to the location of the injured employee. You can find this information by accessing the website of ACE's claims handler, ESIS, at : www.esis.com. These providers are to be used for treatment of Worker's Compensation injuries subject to the laws of the state in which you work.

ADDITIONAL QUESTIONS REGARDING WORKER'S COMPENSATION:

Contact your local Human Resources representative (Marilyn Duffy), Corporate Health and Safety Manager (Matt Soltis), or Corporate Administration in Pasadena, California, at (626) 351-4664.

Worker's compensation is a state-mandated program that provides medical and disability benefits to employees who become disabled due to job related injury or illness. Tetra Tech, Inc. and its subsidiaries pay premiums on behalf of their employees. This program is based on a no-fault system, and benefits are provided for covered events as an exclusive remedy to the injured employee regardless of fault. The types of injuries or illnesses covered and the amount of

benefits paid are regulated by the state worker's compensation boards and vary from state to state. Corporate Administration in Pasadena is responsible for administering the Company's worker's compensation program. The following is a general explanation of worker's compensation provided in the event that you become injured or develop an illness as a result of your employment with Tetra Tech or any of its subsidiaries. Please be aware that the term used for worker's compensation varies from state to state.

WHO IS COVERED:

All employees of Tetra Tech, whether they are on a full-time, part-time or temporary status, working in an office or in the field, are entitled to worker's compensation benefits from the first day of work. All employees must follow the above injury/illness reporting procedures. If you are working out-of-state and away from your home office, you are still eligible for worker's compensation benefits.

Consultants, independent contractors, and employees of subcontractors and employees from temporary employment agencies are not covered by Tetra Tech's Worker's Compensation plan.

WHAT IS COVERED:

If you are injured or develop an illness caused by your employment, worker's compensation benefits are available to you subject to the laws of the state you work in. Injuries do not have to be serious; even injuries treated by first aid practices are covered and must be reported.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT

To: _____
Subsidiary Health and Safety Representative

Prepared by: _____

Position: _____

cc: _____
Workers Compensation Administrator

Office: _____

Project name: _____

Telephone number: _____

Project number: _____

Fax number: _____

Information Regarding Injured or Ill Employee

Name: _____

Office: _____

Home address: _____

Gender: M F No. of dependents: _____

Marital status: _____

Home telephone number: _____

Date of birth: _____

Occupation (regular job title): _____

Social security number: _____

Department: _____

Date of Accident: _____

Time of Accident: _____ a.m. p.m.

Time Employee Began Work: _____

Check if time cannot be determined

Location of Incident

Street address: _____

City, state, and zip code: _____

County: _____

Was place of accident or exposure on employer's premises? Yes No

Information About the Incident

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

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

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Information About the Incident (Continued)

What was the injury or illness? Describe the part(s) of the body affected and how it was affected. Be more specific than "hurt," "pain," or "sore." Examples "Strained back"; "Chemical burn, right hand"; "Carpal tunnel syndrome, left wrist"

Describe the Object or Substance that Directly Harmed the Employee: Examples: "Concrete floor"; "Chlorine"; "Radial arm saw." If this question does not apply to the incident, write "Not applicable."

Did the employee die? Yes [] No [] Date of death: _____

Was employee performing regular job duties? Yes [] No []

Was safety equipment provided? Yes [] No [] Was safety equipment used? Yes [] No []

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

Witness (Attach additional sheets for other witnesses.)

Name: _____

Company: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Medical Treatment Required? [] Yes [] No [] First aid only

Name of physician or health care professional: _____

If treatment was provided away from the work site, provide the information below.

Facility name: _____

Street address: _____

City: _____ State: _____ Zip code: _____

Telephone number: _____

Was the employee treated in an emergency room? [] Yes [] No

Was the employee hospitalized over night as an in-patient? [] Yes [] No

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

Corrective Action(s) Taken by Unit Reporting the Accident:

Corrective Action Still to be Taken (by whom and when):

Name of Tetra Tech employee the injury or illness was first reported to: _____

Date of Report: _____ **Time of Report:** _____

I have reviewed this investigation report and agree, to the best of my recollection, with its contents.

Printed Name of Injured Employee

Telephone Number

Signature of Injured Employee

Date

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

Title	Printed Name	Signature	Telephone Number	Date
Office Manager				
Project Manager				
Site Safety Coordinator or Office Health and Safety Representative				

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.



TETRA TECH, INC.

ACCIDENT AND ILLNESS INVESTIGATION REPORT (Continued)

To Be Completed by the Subsidiary Health and Safety Representative

Classification of Incident:
 Injury Illness

Result of Incident:
 First aid only
 Days away from work
 Remained at work but incident resulted in job transfer or work restriction
 Incident involved days away and job transfer or work restriction
 Medical treatment only

No. of days away from work _____
 Date employee left work _____
 Date employee returned to work _____
 No. of days placed on restriction or job transfer: _____

OSHA Recordable Case Number _____

To Be Completed by Human Resources

Social security number: _____
 Date of hire: _____ Hire date for current job: _____
 Wage information: \$ _____ per Hour Day Week Month
 Position at time of hire: _____
 Current position: _____ Shift hours: _____
 State in which employee was hired: _____
 Status: Full-time Part-time Hours per week: _____ Days per week: _____
 Temporary job end date: _____

To Be Completed during Report to Workers Compensation Carrier

Date reported: _____ Reported by: _____
 Confirmation number: _____
 Name of contact: _____
 Field office of claims adjuster: _____

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.

ATTACHMENT II
MEDICAL DATA SHEET

MEDICAL DATA SHEET

This Medical Data Sheet must be completed by all on-site personnel and kept in a central location during the execution 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 _____

Name of Next Kin _____

Drug or other Allergies _____

Particular Sensitivities _____

Do You Wear Contacts? _____

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals _____

What medications are you presently using? _____

Do you have any medical restrictions? _____

Name, Address, and Phone Number of personal physician: _____

I am the individual described above. I have read and understand this HASP.

Signature

Date

ATTACHMENT III

SAFE WORK PERMITS

**SAFE WORK PERMIT
MOBILIZATION AND DEMOBILIZATION
NAVAL AIR STATION KEY WEST
KEY WEST, FLORIDA**

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

- I. Work limited to the following (description, area, equipment used):** Mob/Demob
- II. Primary Hazards:** lifting; pinches and compressions; slip, trip and falls; insect and animal bites; and inclement weather
- III. Field Crew:** _____
- IV. On-site Inspection conducted** Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

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

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>None expected during this task</u>	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Primary Route(s) of Exposure/Hazard: _____ NA _____

(Note to FOL and/or SSO: 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 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 (Type – Work)..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Impermeable apron..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Work/rest regimen..... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe work shoes or boots.... | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical resistant boot covers..... | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| High visibility vest..... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Tape up/use insect repellent | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| First Aid Kit..... | <input 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**
- | | |
|---|--|
| Utility Locating and Excavation Clearance completed | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA |
| Vehicle and Foot Traffic Routes Established/Traffic Control Barricades/Signs in Place | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA |
| Physical Hazards Identified and Isolated (Splash and containment barriers) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA |
| Emergency Equipment Staged (Spill control, fire extinguishers, first aid kits, etc)..... | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA |

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

- X. Special instructions, precautions:** Use safe lifting/carrying techniques. Use additional PPE based on the hazards that are associated with each task. Use work gloves when cutting boxes or handling sharp tools/cutting devices. Safety glasses will be required.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
SURFACE SOIL, SEDIMENT AND SURFACE WATER SAMPLING
NAVAL AIR STATION KEY WEST
KEY WEST, FLORIDA**

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

- I. Work limited to the following (description, area, equipment used):** Subsurface soil sampling, and IDW
- II. Primary Hazards:** Slips, trips and falls; heat stress; water hazards; animal and insect bites, and inclement weather
- III. Field Crew:** _____
- IV. On-site Inspection conducted** Yes No Initials of Inspector _____ TtNUS
Equipment Inspection required Yes No Initials of Inspector _____ TtNUS

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

VI. Chemicals of Concern	Hazard Monitoring	Action Level(s)	Response Measures
<u>Low levels of metals, VOCs, SVOCs and pesticides</u>	<u>visual</u>	<u>avoid physical contact</u>	<u>wash exposed area with soap and water</u>
_____	_____	_____	_____

Primary Route(s) of Exposure/Hazard: absorption

(Note to FOL and/or SSO: 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 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 – Nitrile) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Impermeable Apron <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Work/rest regimen <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel Toe Work Shoes or Boots <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Chemical Resistant Boot Covers <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| High Visibility Vest <input type="checkbox"/> Yes <input type="checkbox"/> No | Tape/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: Wear USCG approved life vest when in a boat. For sampling wearing waders use a harness and 90 ft life line.

- 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, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090
- X. Special instructions, precautions:** Assume all media is contaminated and avoid contact through the use of safe work practices, PPE and decontamination. Wear snake chaps when sampling in marshy areas.

Permit Issued by: _____ Permit Accepted by: _____

**SAFE WORK PERMIT
GPS SURVEYING
NAVAL AIR STATION KEY WEST
KEY WEST, FLORIDA**

Permit No. _____ Date: _____
to _____

Time: From _____

I. Work limited to the following (description, area, equipment used): GPS Survey

II. Primary Hazards: Slip, trip and fall; inclement weather; insect /animal bites or stings, poisonous plants, etc.

III. Field Crew: _____

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

V. Protective equipment required

Level D Level B
Level C Level A

Modifications/Exceptions: _____

Respiratory equipment required

Yes Specify on the reverse
No

VI. Chemicals of Concern Measures	Hazard Monitoring	Action Level(s)	Response
None expected during this task	_____	_____	_____
_____	_____	_____	_____

Primary Route(s) of Exposure/Hazard: NA

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

VII. Additional Safety Equipment/Procedures

Hard-hat	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hearing Protection (Plugs/Muffs)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Safety Glasses	<input type="checkbox"/> Yes <input 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 type="checkbox"/> No	Gloves (Type – <u>Work</u>)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Impermeable apron	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Work/rest regimen	<input type="checkbox"/> Yes <input type="checkbox"/> No
Steel toe work shoes or boots ..	<input type="checkbox"/> Yes <input type="checkbox"/> No	Chemical Resistant Boot Covers ..	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
High Visibility vest.....	<input type="checkbox"/> Yes <input type="checkbox"/> No	Tape up/use insect repellent	<input type="checkbox"/> Yes <input type="checkbox"/> No
First Aid Kit	<input 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 checked="" type="checkbox"/> No	Other.....	<input type="checkbox"/> Yes <input type="checkbox"/> No

Modifications/Exceptions: Snake chaps in high brush areas. Tape up pant legs. Use commercially available insect repellents such as DEET and Permanone. Apply and re-apply according to manufactures instructions. Wear hat to protect head from UV rays.

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, SSO to complete or contact Health Sciences, Pittsburgh Office (412)921-7090

X. Special instructions, precautions: _____

Permit Issued by: _____ Permit Accepted by: _____