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HEALTH AND SAFETY PLAN FOR DELINEATION SAMPLING IN THE AREA OF FORMER  
WATER TOWER SITE WITH TRANSMITTAL LETTER NAS KEY WEST FL  
10/26/2004  
TETRA TECH NUS



TETRA TECH NUS, INC.

AIK-04-0280

October 26, 2004

Project Number HK N0639

*via U.S. mail*

Commander  
Department of the Navy  
SOUTHDIV NAVFACENGCOM  
ATTN: Linda Martin (Code OPT1)  
P.O. Box 190010  
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Reference: CLEAN Contract No. N62467-94-D-0888  
Contract Task Order No. 0349

Subject: HASP for the Delineation Sampling in the Area of the Former Water Tower Site, Rev. 0,  
Naval Air Station, Key West, Florida

Dear Ms. Martin:

I have enclosed a CD containing the PDF file for the HASP for the Delineation Sampling in the Area of the Former Water Tower Site, Rev. 0, Naval Air Station, Key West, Florida. The file is being distributed to some of the members of the NAS Key West Partnering Team via U.S. mail for their convenience and to meet TtNUS's contractual obligation under CTO 0349. I am not expecting to receive any comments on this document.

Please call me at (803) 649-7963, extension 345, 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)  
Ms. T. Vaught, FDEP  
Mr. R. Courtright, NAS Key West

Mr. M. Perry/File  
Files 0639-4.2

**HEALTH AND SAFETY PLAN  
FOR  
DELINEATION SAMPLING  
IN THE AREA OF THE  
FORMER WATER TOWER SITE**

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



**SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND**

**Contract No. N62467-94-D-0888  
Contract Task Order 0349**

OCTOBER 2004



**HEALTH AND SAFETY PLAN  
FOR  
DELINEATION SAMPLING  
IN THE AREA OF THE  
FORMER WATER TOWER SITE**

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

**Submitted to:**

**Southern Division  
Naval Facilities Engineering Command  
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North Charleston, South Carolina 29406**

**Submitted by:**

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**CONTRACT NO. N62467-94-D-0888  
CONTRACT TASK ORDER 0349**

**OCTOBER 2004**

**PREPARED UNDER THE SUPERVISION OF:**

**APPROVED FOR SUBMITTAL BY:**

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**CHARLES BRYAN  
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## 1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been developed to provide practices and procedures for Tetra Tech NUS, Inc. (TtNUS) personnel engaged in delineation sampling in the area adjacent to the Former Water Tower on the eastern end of the Truman Annex at the Naval Air Station (NAS) Key West, Florida. This work is authorized under the Comprehensive Long - Term Environmental Action Navy (CLEAN) contract, administered through the U.S. Navy Southern Division Naval Facilities Engineering Command, as defined under Contract No. N62467-94-D-0888; Contract Task Order Number 0349. This HASP must be used in conjunction with the TtNUS Health and Safety Guidance Manual which can be found on the TtNUS web site <http://webmail.nus.tetrattech.com/>. Both of these documents must be present at the site during the performance of site activities. The Guidance Manual provides detailed information pertaining to the HASP as well as applicable TtNUS Standard Operating Procedures (SOPs). This HASP and the contents of the Guidance Manual were developed to comply with the requirements stipulated in 29 CFR 1910.120 (OSHA's Hazardous Waste Operations and Emergency Response Standard).

This HASP has been developed using the latest available information regarding known or suspected chemical contaminants and potential physical hazards associated with the proposed work at the sites of interest. The HASP will be modified if new information becomes available. Changes to the HASP will be made with the approval of the TtNUS Project Health and Safety Officer (PHSO) and the TtNUS Health and Safety Manager (HSM). Requests for modifications to the HASP will be directed to the PHSO, who will determine if the changes are necessary. The PHSO will notify the Task Order Manager (TOM), who will notify affected personnel of changes.

### 1.1 KEY PROJECT PERSONNEL AND ORGANIZATION

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

- The TtNUS TOM is responsible for the overall direction of health and safety for this project.
- The PHSO is responsible for developing this HASP in accordance with applicable OSHA regulations. Specific responsibilities include:
  - Providing information regarding site contaminants and physical hazards associated with the site.
  - Establishing air monitoring and decontamination procedures.

- Assigning personal protective equipment based on task and potential hazards.
  - Determining emergency response procedures and emergency contacts.
  - Stipulating training requirements and reviewing appropriate training and medical surveillance certificates.
  - Providing standard work practices to minimize potential injuries and exposures associated with hazardous waste work.
  - Modifying this HASP, as it becomes necessary.
- The TtNUS Field Operations Leader (FOL) is responsible for implementation of the HASP with the assistance of an appointed SSO. The FOL manages field activities, executes the work plan, and enforces safety procedures as applicable to the work plan.
  - The SSO supports site activities by advising the FOL on aspects of health and safety on site. These duties may include:
    - Coordinating health and safety activities with the FOL.
    - Selecting, inspecting, and maintaining personal protective equipment.
    - Establishing work zones and control points in areas of operation.
    - Implementing air monitoring program for onsite activities.
    - Verifying training and medical clearance of onsite personnel status in relation to site activities.
    - Implementing Hazard Communication, Respiratory Protection Programs, and other associated health and safety programs as they may apply to site activities.
    - Coordinating emergency services.
    - Providing site-specific training for onsite personnel.
    - Investigating accidents and injuries (see Attachment I - Illness/Injury Procedure and Report Form)
    - Providing input to the PHSO regarding the need to modify, this HASP, or applicable health and safety associated documents as per site-specific requirements.
  - Compliance with the requirements stipulated in this HASP is monitored by the SSO and coordinated through the TtNUS CLEAN HSM.

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





## **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. Site activities will be coordinated with the client contact, Robert Courtright. In the event of an emergency which cannot be mitigated using onsite resources, personnel will evacuate to a safe place of refuge and the appropriate emergency response agencies will be notified. It has been determined that the majority of potential emergency situations would be better supported by outside emergency responders. Based on this determination, TtNUS personnel will not provide emergency response support beyond the capabilities of onsite response. Workers who are ill or who have suffered a non-serious injury may be transported by site personnel to nearby medical facilities, provided that such transport does not aggravate or further endanger the welfare of the injured/ill person. The emergency response agencies listed in this plan are capable of providing the most effective response, and as such, will be designated as the primary responders. These agencies are located within a reasonable distance from the area of site operations, which ensures adequate emergency response time. NAS Key West contact Robert Courtright will be notified anytime outside response agencies are contacted. This Emergency Action Plan conforms to the requirements of 29 CFR 1910.38(a), as allowed in 29 CFR 1910.120(l)(1)(ii).

TtNUS will, through necessary services, provide the following emergency action measures:

- Initial stage fire fighting support and prevention
- Initial spill control and containment measures and prevention
- Removal of personnel from emergency situations
- Initial medical support for injuries or illnesses requiring basic first-aid
- Site control and security measures as necessary

### **2.2 EMERGENCY PLANNING**

Through the initial hazard/risk assessment effort, emergencies resulting from chemical, physical, or fire hazards are considered to be unlikely to be encountered during site activities. Nonetheless, to minimize and eliminate the potential for any emergency situations, emergency planning activities will include the following (which are the responsibility of the SSO and/or the FOL):

- Coordinating with local Emergency Response personnel to ensure that TtNUS emergency action activities are compatible with existing emergency response procedures. Base Fire Protection and

Emergency Services will be notified of scheduled events and activities. This is most imperative in situations where their services may be required.

- Establishing and maintaining information at the project staging area (Support Zone) for easy access in the event of an emergency. This information will include the following:
  - Chemical Inventory (of chemicals used onsite), with Material Safety Data Sheets.
  - Onsite personnel medical records (Medical Data Sheets).
  - A log book identifying personnel onsite each day.
  - Hospital route maps with directions (these should also be placed in each site vehicle).
  - Emergency Notification - phone numbers.

The TtNUS FOL will be responsible for the following tasks:

- Identifying a chain of command for emergency action.
- Educating site workers to the hazards and control measures associated with planned activities at the site, and providing early recognition and prevention, where possible.
- Periodically performing practice drills to ensure site workers are familiar with incidental response measures.
- Providing the necessary equipment to safely accomplish identified tasks.

## **2.3 EMERGENCY RECOGNITION AND PREVENTION**

### **2.3.1 Recognition**

Emergency situations that may be encountered during site activities will generally be recognized by visual observation. To adequately recognize chemical exposures, site personnel must have a clear knowledge of signs and symptoms of exposure associated with site contaminants. This information is provided in Table 6-1. Tasks to be performed at the site, potential hazards associated with those tasks and the recommended control methods are discussed in detail in Sections 5.0 and 6.0. Additionally, early recognition of hazards will be supported by daily site surveys to eliminate any situation predisposed to an emergency. The FOL and/or the SSO will be responsible for performing surveys of work areas prior to initiating site operations and periodically while operations are being conducted. Survey findings will be documented by the FOL and/or the SSO in the Site Health and Safety logbook, however, site personnel

will be responsible for reporting hazardous situations. Where potential hazards exist, TtNUS will initiate control measures to prevent adverse effects to human health and the environment.

The above actions will provide early recognition for potential emergency situations, and allow TtNUS to instigate necessary control measures. However, if the FOL and the SSO determine that control measures are not sufficient to eliminate the hazard, TtNUS will withdraw from the site and notify the appropriate response agencies listed in Table 2-1.

### **2.3.2      Prevention**

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

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

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

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

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

## **2.5 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 CONTACTS**

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

**TABLE 2-1**

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

AGENCY	TELEPHONE
Key West Police/Rescue Services	(305) 293-2971
NAS Key West 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
Poison Control Center	(800) 222-1222
Chemtrec	(800) 424-9300
National Response Center	(800) 424-8802
Task Order Manager Chuck Bryan	(803) 649-7963 x345
Field Operations Leader	
Site Safety Officer	
Health and Safety Manager, Matthew M. Soltis, CIH, CSP	(412) 921-8912
Project Health and Safety Officer, James K. Laffey	(412) 921-8678

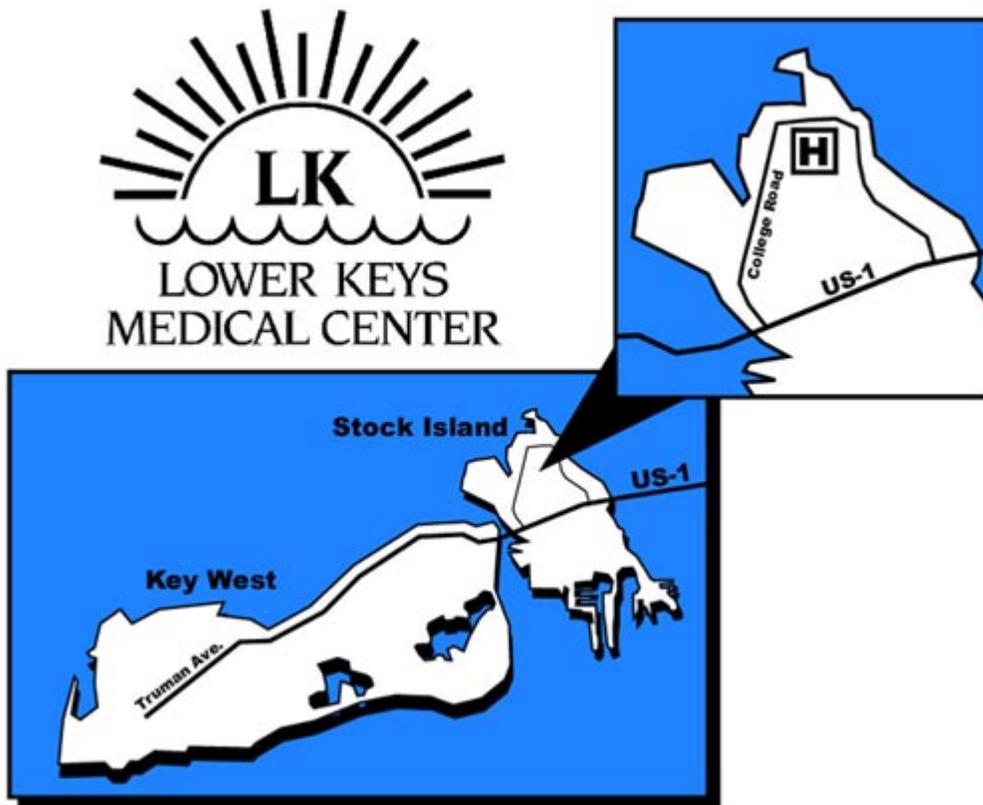
## 2.7 EMERGENCY ROUTE TO HOSPITAL

The closest hospital to NAS Key West is Lower Florida Keys Health System. Directions are as follows:

**Directions to the hospital are as follows:** From Truman Annex use the Southward Street gate exit and proceed two blocks to Whitehead Street. Turn left and proceed two blocks to Eaton Street. Turn right and proceed to Roosevelt Boulevard (US 1). Turn left and proceed off island of Key West to first traffic light on Stock Island. Turn left at traffic light onto College Road. Proceed on College Road to golf course on left. Turn right at hospital sign and follow road to hospital on left. See Figure 2-1 of this HASP.

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

**Figure 2-1**  
**Route to Hospital**



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

TtNUS personnel will be working in close proximity to each other at NAS Key West. As a result, hand signals, voice commands, and line of site communication will be sufficient to alert site personnel of an emergency. When project tasks are performed simultaneously on different sites, vehicle horns will be used to communicate emergency situations.

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

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

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

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

## **2.9 PPE AND EMERGENCY EQUIPMENT**

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

As soon as possible Navy Contact Robert Courtright must be informed of any incident or accident that requires medical attention.

Any pertinent information regarding allergies to medications or other special conditions will be provided to medical services personnel. This information is listed on Medical Data Sheets filed onsite (see Attachment II of this HASP). If an exposure to hazardous materials has occurred, provide hazard information from Table 6-1 to medical service personnel.

## **Figure 2-2 Emergency Response Protocol**

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

In the event of a personnel injury or accident:

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

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

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

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

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

Name: \_\_\_\_\_ Date of Exposure: \_\_\_\_\_

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

Client Contact: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Company Name: \_\_\_\_\_

**I. Exposing Agent**

Name of Product or Chemicals (if known): \_\_\_\_\_

Characteristics (if the name is not known)

Solid            Liquid            Gas            Fume            Mist            Vapor

**II. Dose Determinants**

What was individual doing? \_\_\_\_\_

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

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

Was their skin contact? \_\_\_\_\_

Was the exposing agent inhaled? \_\_\_\_\_

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

**III. Signs and Symptoms** (check off appropriate symptoms)

**Immediately With Exposure:**

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

Chest Tightness / Pressure  
Nausea / Vomiting  
Dizziness  
Weakness

**Delayed Symptoms:**

Weakness  
Nausea / Vomiting  
Shortness of Breath  
Cough

Loss of Appetite  
Abdominal Pain  
Headache  
Numbness / Tingling

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

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

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

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

Improved: \_\_\_\_\_ Worsened: \_\_\_\_\_ Remained Unchanged: \_\_\_\_\_

**V. Treatment of Symptoms** (check off appropriate response)

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

## **3.0 SITE BACKGROUND**

### **3.1 SITE HISTORY**

NAS Key West is in southern Monroe County, Florida. The U.S. Navy manages 6,323 acres of land divided into twenty 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, counternarcotics air surveillance operations, a weather service, and several other activities on Key West. In addition to the Naval activities and units, other 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 and 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 connects to the mainland by the Overseas Highway (U.S. Highway No. 1). The topography at the NAS Key West is generally flat.

### **3.2 PROJECT SITE DESCRIPTION**

#### **3.2.1 Former Water Tower Site**

The Former Water Tower Site is located on the eastern end of the DRMO Waste Storage Area at Truman Annex. The DRMO Waste Storage Area was used to store excess government materials, primarily metal debris. Several investigations were conducted to determine the nature and extent of contamination at the DRMO Waste Storage Area. Low concentrations of polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs) and inorganic chemicals were detected in the surface soil at the DRMO Waste Storage Area. Based on results of these investigations, the DRMO Waste Storage Area was remediated in early 1999. Approximately 12,000 cubic yards of soil were removed from the area, including portions of the Former Water Tower Site, and replaced with clean backfill. The majority of the property has been transferred from Navy ownership to the City of Key West. However, the water tower and an area immediately surrounding the tower that measures 170 feet by 171.97 feet were retained by NAS Key West. In the fall of 2003 the Navy removed the water tower.

In June 2004, additional delineation of the Former Water Tower Site was performed to identify any soil contamination that could pose a risk to human or ecological receptors in the future, based on the planned reuse of the property. Due to uncertainty about the location of underground structures a geophysical

survey was performed prior to sampling. The Base Reuse Plan indicates that the property will be designated as Mixed Use and Pocket Parks

In August 2004, the Navy removed contaminated soils from the Former Water Tower Site. Approximately 1,930 cubic yards of contaminated soils from depths of 2 feet and 6 feet below land surface (bls) were removed. Contaminants were left in place in the side walls of the excavation at three locations where the excavation was completed to the Navy's property line. Clean fill was placed in the excavation to reduce the possibility of exposure to the potentially contaminated soil remaining below the depth of excavation.

## 4.0 SCOPE OF WORK

This section describes the project tasks that will be performed as part of the delineation and confirmation sampling at the Former Water Tower Site at NAS Key West. Each site task has been evaluated and the associated hazards and recommended control measures are listed in Table 5-1 of this HASP. If new tasks are to be performed at the site, Table 5-1 and this section will be modified accordingly. Specific tasks to be conducted include, but are not necessarily limited to, the following:

- Mobilization and demobilization
- Delineation soil sampling using hand augering techniques
- Decontamination of equipment
- Surveying of sampling locations using global positioning system (GPS)

The above listing represents a summarization of the tasks as they apply to the scope and application of this HASP. For more detailed description of the associated tasks refer to the Work Plan for Delineation and Confirmation Sampling to Support the Removal Action at the Former Water Tower Site. If additional tasks are determined to be necessary, this HASP will be amended and a hazard evaluation will be performed for each additional task to be conducted at the site.



## **5.0 TASKS/HAZARDS/ASSOCIATED CONTROL MEASURES SUMMARIZATION**

Table 5-1 of this section serves as the primary portion of this HASP and identifies the tasks that are to be performed as part of the scope of work. This table may be modified if new or additional tasks become necessary. For each of the planned tasks, Table 5-1 specifies the anticipated hazards, recommended control measures, air monitoring recommendations, required Personal Protective Equipment (PPE), and decontamination measures.

Through using this 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 as well as proper air monitoring techniques.

As discussed earlier, a Health and Safety Guidance Manual accompanies this table and HASP. The manual has been 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 of Tetra Tech NUS' SOPs are also provided in the Guidance Manual.

Safe Work Permits issued for exclusion zone activities (See Section 9.2) will use elements defined in Table 5-1 as its primary reference. The FOL and/or the SSO completing the Safe Work Permit (SWP) will be required to add certain task/site-specific information. The SWPs are to be used by the SSO as the outline for task-specific tailgate safety briefings, which are to be conducted prior to the initiation of each task, and at the beginning of each work shift.

### **5.1 GENERAL SAFE WORK PRACTICES**

In addition to the task-specific work practices identified on Table 5-1, the following general safe work practices are to be followed when conducting work on-site. These safe work practices address a pattern of general precautions and measures for reducing risks associated with site operations. This list may be amended as necessary.

- Eating, drinking, chewing gum or tobacco, taking medication, or smoking is prohibited in contaminated or potentially contaminated areas or where the possibility for the transfer of contamination exists.
- Wash hands and face thoroughly upon leaving a contaminated or suspected contaminated area. A thorough shower and washing must be conducted as soon as possible if excessive skin contamination occurs.
- Avoid contact with potentially contaminated substances. Avoid puddles, pools, mud, or other such areas. Avoid, whenever possible, kneeling on the ground or leaning or sitting on equipment. Keep monitoring equipment away from potentially contaminated surfaces.
- If hand augering deeper than 24 inches below ground surface (bgs) follow the TtNUS Standard Operating Procedure for Utility Locating and Excavation Clearance found on the TtNUS web site <http://webmail.nus.tetrattech.com/>.
- Attend briefings on anticipated hazards, equipment requirements, safe work permits, emergency procedures, and communication methods before going on site.
- Buddies should maintain visual contact with each other and with other on-site team members by remaining in close proximity to assist each other in case of emergency.
- Establish appropriate Safety Zones including Support, Contamination Reduction, and Exclusion Zones.
- Minimize the number of personnel and equipment in contaminated areas (such as the Exclusion Zone). Non-essential vehicles and equipment should remain within the Support Zone.
- Establish appropriate decontamination procedures for leaving the site.
- Immediately report injuries, illnesses, and unsafe conditions, practices, and equipment to the Site Safety Officer (SSO).
- Observe coworkers for signs of toxic exposure and heat stress.
- Inform co-workers of potential symptoms of illness, such as headaches, dizziness, nausea, or blurred vision.

**TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES  
NAVAL AIR STATION, 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
Delineation sampling using hand augering methods	<p><b>Chemical Hazards:</b></p> <p>1) PCBs, antimony, arsenic, chromium and lead are the primary contaminants of concern associated with the Former Water Tower Area Site. Delineation sampling using hand augering methods is not anticipated to create airborne dusts. Primary routes of exposure are anticipated to be through incidental ingestion or skin contact. Observations of site dusts, will require area wetting methods to be implemented to control airborne dusts. If area wetting is not successful in controlling airborne dusts, this approach and the HASP will require modification.</p> <p>It is recommended that exposure (via ingestion due to hand to mouth contact) be minimized due to bio-accumulative properties of many of the contaminants. For more information on these contaminants, see Table 6-1.</p> <p>Further information on this contaminant is presented in Table 6-1.</p> <p>2) Transfer of contamination into clean areas or onto persons</p> <p><b>Physical hazards:</b></p> <p>3) Natural Hazards (Insect/animal bites and stings)</p> <p>4) Inclement weather/heat stress</p>	<p>1) Avoid contact with potentially contaminated soils. Observations of airborne dust will require notification of the PHSO. Use safe work practices, PPE, and decontamination/personal hygiene practices to minimize potential exposures via incidental ingestion and skin contact.</p> <p>2) Decontaminate all equipment and supplies between boreholes and prior to leaving the site. Visual inspect to ensure no contamination exists.</p> <p>3) Avoid nesting areas, use commercially available repellents. Report potential hazards to the SSO.</p> <p>4) Suspend or terminate operations until directed otherwise by SSO. Drink plenty of fluids and seek shelter (shade or air conditioned areas) for breaks. If necessary, evaluate workers for heat stress and follow ACGIH guidelines for work/rest regimens.</p>	<p>The primary contaminants of concern are solids. Although not anticipated, any generation of dusts should be minimized to the greatest extent possible to avoid inhalation of lead contaminated dusts or particulates.</p> <p>Evaluation of dust concentrations will be qualitative by observing work conditions for visible dust clouds or accumulations. Potential exposure to contaminants attached to dust particles will be controlled by using water to suppress dusts, by avoiding dust plumes, or by upgrading the level of protection.</p> <p>If airborne dusts are observed, immediately contact the PHSO for additional guidance and modification of this HASP. If necessary, particulate/aerosol monitoring devices and personnel exposure monitoring will be performed.</p>	<p>All subsurface operations are to be initiated in Level D protection. Level D protection constitutes the following minimum protection</p> <ul style="list-style-type: none"> <li>- Standard field attire (Sleeved shirt; long pants)</li> <li>- Surgical style nitrile gloves (layered as necessary)</li> <li>- Steel toe safety shoes/boots</li> <li>- Safety glasses</li> <li>- Hardhat</li> <li>- Hearing protection for high noise areas, as directed by the SSO.</li> <li>- Tyvek coveralls and disposable boot covers if surface contamination is present or if the potential exists for soiling work attire.</li> <li>- Reflective vest for high traffic areas</li> </ul> <p><b>Note:</b> 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><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for outer protective equipment (boots, gloves, coveralls, etc.). This function will take place at an area adjacent to the site activities. This procedure will consist of:</p> <ul style="list-style-type: none"> <li>- Equipment drop</li> <li>- Soap/water wash and rinse of outer boots and gloves</li> <li>- Soap/water wash and rinse of the outer splash suit, as applicable</li> <li>- Outer suit, boot covers, outer glove removal</li> <li>- Wash hands and face, leave contamination reduction zone</li> </ul> <p>Equipment used in the exclusion zone will require a complete decontamination between locations and prior to removal from the site. The FOL or the SSO will be responsible for evaluating equipment arriving onsite and that which is to leave the site. No equipment will be authorized access or exit without this authorization.</p> <p>Evaluation will consist of</p> <ul style="list-style-type: none"> <li>- Visual inspection</li> <li>- Scanning equipment with monitoring instruments</li> </ul>
Mobilization/ Demobilization	<p><b>Chemical Hazards</b></p> <p>Site contaminants are not anticipated to be encountered during this activity. However, chemical hazards may be associated with chemicals that are brought on-site. Site personnel must maintain chemical inventories and manufacturer material safety data sheets (MSDS) and follow the TtNUS Hazard Communication Program in the Guidance Manual (Section 5.0).</p> <p><b>Physical Hazards:</b></p> <p>1) Lifting (muscle strains and pulls)</p> <p>2) Slip, trips, and falls</p> <p>3) Moving machinery</p> <p>4) Natural hazards (Insect/animal bites and stings)</p> <p>5) Vehicular and foot traffic</p>	<p>1) Use machinery or multiple personnel for heavy lifts. Use proper lifting techniques.</p> <p>2) Preview work locations for unstable/uneven terrain. Barricade all excavations from access closer than two feet from the edge.</p> <p>3) All equipment will be</p> <ul style="list-style-type: none"> <li>- Inspected in accordance with OSHA, and manufacturers design. (See Attachment VI of this HASP or Section 10.0 of the TtNUS Health and Safety Guidance Manual).</li> <li>- Operated by qualified operators, and knowledgeable ground crew.</li> </ul> <p>4) Avoid nesting areas, use commercially available repellents. Report potential hazards to the SSO.</p> <p>5) Traffic and equipment considerations are to include the following:</p> <ul style="list-style-type: none"> <li>- Establish safe zones of approach (i.e. Boom + 3 feet).</li> <li>- Secure all loose articles to avoid possible entanglement.</li> <li>- All equipment shall be equipped with movement warning systems.</li> <li>- Employ safety belts and follow the site traffic rules.</li> </ul> <p>Traffic patterns will be required supporting onsite activities. However, regulated patterns in and about the work zones and support thereof will be established to safely control moving equipment, vehicles, and pedestrians around the area of operation.</p>	Not required	<p>Level D - (Minimum Requirements)</p> <ul style="list-style-type: none"> <li>- Standard field attire (Sleeved shirt; long pants)</li> <li>- Steel toe safety shoes</li> <li>- Safety glasses</li> <li>- Hardhat (when overhead hazards exists, or identified as a operation requirement)</li> <li>- Reflective vest for high traffic areas</li> <li>- Hearing protection for high noise areas, or as required based on the noise level at each operation.</li> </ul> <p><b>Note:</b> 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

**TABLE 5-1  
TASKS/HAZARDS/CONTROL MEASURES  
NAVAL AIR STATION, 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
Decontamination of Sampling Equipment	<p><b>Chemical Hazards:</b></p> <p>1) PCBs, antimony, arsenic, chromium and lead are the primary contaminants of concern associated with the Former Water Tower Area Site. Delineation sampling using hand augering methods is not anticipated to create airborne dusts. Primary routes of exposure are anticipated to be through incidental ingestion or skin contact. Observations of site dusts, will require area wetting methods to be implemented to control airborne dusts. If area wetting is not successful in controlling airborne dusts, this approach and the HASP will require modification.</p> <p>It is recommended that exposure (via ingestion due to hand to mouth contact) be minimized due to bio-accumulative properties of many of the contaminants. For more information on these contaminants, see Table 6-1.</p> <p>2) Decontamination fluids - Liquinox (detergent); isopropanol (decontamination solvent)</p> <p><b>Physical hazards:</b></p> <p>3) Lifting (strain/muscle pulls)</p> <p><b>Natural hazards:</b></p> <p>8) Inclement weather/heat stress</p>	<p>1) and 2) Employ protective equipment to minimize contact with site contaminants and hazardous decontamination fluids. Control potential non-occupational exposures through good work hygiene practices (i.e., avoid hand to mouth contact; wash hands and face before breaks and lunch; minimize contact with contaminated media). Obtain manufacturer's MSDS for any decontamination fluids used on-site. Solvents may only be used in well-ventilated areas, such as outdoors. Use appropriate PPE as identified on MSDS or within this HASP. All chemicals used must be listed on the Chemical Inventory for the site, and site activities must be consistent with the Hazard Communication Program provided in Section 5.0 of the TtNUS Health and Safety Guidance Manual.</p> <p>3) Use multiple persons where necessary for lifting and handling heavy equipment for decontamination purposes.</p> <ul style="list-style-type: none"> <li>- Employ proper lifting techniques as described in Table 5-1, Mobilization/Demobilization.</li> </ul> <p>8) Suspend or terminate operations until directed otherwise by SSO. Drink plenty of fluids and seek shelter (shade or air conditioned areas) for breaks. If necessary, evaluate workers for heat stress and follow ACGIH guidelines for work/rest regimens. .</p>	Use visual observation, to ensure all equipment has been properly cleaned of contamination and dried.	<p>For sampling equipment, the following PPE is required</p> <p>Level D Minimum requirements -</p> <ul style="list-style-type: none"> <li>- Standard field attire (Sleeved shirt; long pants)</li> <li>- Steel toe safety shoes</li> <li>- Nitrile outer gloves, cotton liners</li> <li>- Safety glasses underneath a splash shield</li> </ul> <p>In the event of overspray of chemical decontamination fluids use PVC Rainsuits or PE or PVC coated Tyvek as necessary.</p> <p><b>Note:</b> 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><b>Personnel Decontamination:</b> This decontamination procedure for Level D protection will consist of:</p> <ul style="list-style-type: none"> <li>- Soap/water wash and rinse of outer gloves</li> <li>- Soap/water wash and rinse of the outer splash suit, as applicable</li> <li>- Wash hands and face, leave contamination reduction zone</li> </ul> <p>All equipment used in the exclusion zone will require a complete decontamination between locations and prior to removal from the site.</p> <p>Evaluation will consist of</p> <ul style="list-style-type: none"> <li>- Visual inspection</li> <li>- Scanning equipment with monitoring instruments</li> </ul> <p>Sampling equipment will be decontaminated as per the requirements in the Sampling and Analysis Plan and/or Work Plan.</p> <p>MSDS for any decon solutions (Alconox, methanol, isopropanol, hexane, etc.) will be obtained and used to determine proper handling / disposal methods and protective measures (PPE, first-aid, etc.).</p> <p>The FOL or the SSO will be responsible for evaluating equipment arriving onsite and that which is to leave the site. No equipment will be authorized access or exit without this evaluation</p>
GPS Surveying	<p><b>Chemical hazards:</b></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. To further reduce the potential for exposure, site personnel performing surveying activities will minimize contact with potentially contaminated media and will avoid areas where chemical hazards may exist.</p> <p>Refer to Section 6.0 for a list of potential and representative site contaminants. See individual Safe Work Permits contained in Attachment III for specific contaminants of concern associated with particular sites and site activities.</p> <p><b>Physical hazards:</b></p> <p>1) Slip, trips, and falls</p> <p>2) Lifting (strain/muscle pulls)</p> <p>3) Natural hazards (Insect/animal bites and stings, poisonous plants)</p> <p>4) Inclement weather/heat stress</p>	<p>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).</p> <p>2) Use multiple persons where necessary for lifting and handling heavy equipment for decontamination purposes.</p> <ul style="list-style-type: none"> <li>- Employ proper lifting techniques as described in Table 5-1, Mobilization/Demobilization.</li> </ul> <p>3) 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.</p> <p>4) All operations will be temporarily suspended during electrical storms. Drink plenty of fluids and seek shelter (shade or air conditioned areas) for breaks. If necessary, evaluate workers for heat stress and follow ACGIH guidelines for work/rest regimens.</p>	Not required	<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"> <li>- Standard field dress including sleeved shirt and long pants</li> <li>- Steel-toe work boots or shoes</li> <li>- <i>Safety glasses, hard hats (if working near machinery)</i></li> <li>- <i>Tyvek coveralls may be worn to provide additional protection against poisonous plants and insects, particularly ticks.</i></li> <li>- <i>Work gloves may be worn if desired.</i></li> <li>- <i>Snake chaps for heavily wooded area where encounters are likely.</i></li> </ul> <p><b>Note:</b> 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><b>Personnel Decontamination</b> will consist of a soap/water wash and rinse for outer protective equipment (e.g. boots, gloves, coveralls, etc.). This function will take place at a satellite location. Disposable PPE will be bagged between sampling events. This procedure will consist of</p> <ul style="list-style-type: none"> <li>- Sample acquisition</li> <li>- Clean (Deionized water spray) the outside of the sample containers/label/bag</li> </ul> <p>This decontamination procedure for Level D protection will consist of</p> <ul style="list-style-type: none"> <li>- Equipment drop</li> <li>- Soap/water wash and rinse of outer boots and outer gloves, as applicable</li> <li>- Soap/water wash and rinse of the outer splash suit, as applicable</li> <li>- Wash hands and face, leave contamination reduction zone</li> </ul>

## 6.0 HAZARD ASSESSMENT

The following section provides information regarding the chemical, physical, and natural hazards associated with the sites of interest and the proposed site activities. Table 6-1 provides information related to primary contaminants of concern that have been identified through analysis and interpretation of available analytical data from previous site investigations. 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

Historical information and data from previous site investigations have determined the chemicals of concern are polychlorinated biphenyl and the metals antimony, arsenic, and lead.

The tasks TtNUS and subcontractor personnel will be performing present limited potential for exposure given the fact that hand augering sampling activities do not typically create significant amounts of airborne dusts. Exposures via other routes (incidental ingestion, skin contact) will be minimized through the use of safe work practices, PPE, decontamination and personal hygiene practices (washing hands and face prior to performing hand to mouth activities). The greatest potential for exposure to lead is anticipated to occur when TtNUS personnel collect confirmation soil samples during excavation activities performed by another contractor. Excavation activities may result in the generation of airborne dusts that may be inhaled or otherwise ingested. However, confirmation soil sampling activities do not require TtNUS personnel to be in close proximity to excavation operations where potential exposures may occur. Furthermore, TtNUS site personnel can situate themselves in an upwind area that will not be impacted by potential airborne dusts. To the extent possible, efforts will be made to coordinate sampling and excavation activities so that they are not performed simultaneously. Based on available analytical data that indicate the highest previous lead concentration in soil to be 7,170 milligrams per kilogram (mg/kg), airborne concentrations of dust greater than 3.0 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) may result in exposures to lead that approach the OSHA Time-Weighted Average (TWA) Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Dusts are typically visually perceptible at an airborne concentration of approximately  $2.5 \text{ mg}/\text{m}^3$ . As a result, TtNUS personnel can prevent potential exposures to lead via inhalation by avoiding visible dusts and using area wetting to control airborne dusts.

**TABLE 6-1  
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA  
NAS KEY WEST, FLORIDA**

Substance	CAS No.	Air Monitoring/Sampling Information		Exposure Limits	Warning Properties	Physical Properties	Health Hazard Information
Aroclor-1260 (Polychlorinated Biphenyl, PCB) It should be noted that this substance is representative of the more common isomers Aroclor - 1242, 1254, which may be encountered.	11096-82-5 53469-21-9 (42%) 11097-69-1 (54%)	Substance is not volatile (VP=0.00006 mmHg), I.P. is unknown however is anticipated to be elevated, therefore, PID is not anticipated to detect substance.  Substance is non combustible and as a result will not be detected by FID.	Air sample using a particulate filter, Florisil sorbent tube with glass fiber filter; hexane desorption; gas chromatography-electron capture detector. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #5503 (PCBs).	OSHA; ACGIH: 0.5 mg/m <sup>3</sup> (skin)  NIOSH: 0.001 mg/m <sup>3</sup>  IDLH: 5 mg/m <sup>3</sup>	Inadequate - However due to the low volatility it is assumed unless agitated this substance does not present a volatile vapor or gas respiratory threat. For dusty conditions where this material may cling to particulates, use a HEPA filter.  APRs are approved for escape only when concentrations exceed the exposure limits. Concentrations greater than the exposure limits require PAPR or supplied air respirators.  <b>Recommended glove:</b> Butyl rubber >24 hrs; Neoprene rubber >24.00 hrs; Silver shield or Viton (for pure product).	<b>Boiling Pt:</b> distillation range 689- 734°F; 365-390°C <b>Melting Pt:</b> -2 to 50°F; -19 to 10°C <b>Solubility:</b> Insoluble <b>Flash Pt:</b> Not applicable <b>LEL/LFL:</b> Not applicable <b>UEL/UFL:</b> Not applicable Nonflammable liquid, however, exposure to fire results in black soot containing PCBs, dibenzofurans, & chlorinated dibenzo-p-dioxins <b>Vapor Density:</b> Not available <b>Vapor Pressure:</b> 0.00006 - 0.001 mmHg <b>Specific Gravity:</b> 1.566 @ 60°F; 15.5°C <b>Incompatibilities:</b> Strong oxidizers <b>Appearance and Odor:</b> Colorless to pale yellow, viscous liquid or solid (Aroclor 54 below 50°F) with a mild, hydrocarbon odor	This substance is irritating to the eyes and skin. Chronic effects of overexposure may include potential to cause liver damage, chloracne, and reproductive effects. Recognized as possessing carcinogenic properties by NIOSH, and NTP.
Antimony	7440-36-0	Particulate form - unable to be detected by PID/FID.	Air sample using particulate filter; acid desorption; atomic absorption spectrometry PeCam Sampling and analytical protocol shall proceed in accordance with NIOSH Method #261.	OSHA/NIOSH/ACGIH: 0.5 mg/m <sup>3</sup>  IDLH: 50 mg/m <sup>3</sup>	Metallic taste resulting from exposure.  <b>Recommended Air Purifying Cartridges:</b> Protect from dusts, fumes, and mists use HEPA filters.  <b>Recommended gloves:</b> This is in the particulate form. Therefore any glove suitable to prevent skin contact.	<b>Boiling Pt:</b> 2975°F; 1635°C <b>Melting Pt:</b> 1166°F; 630°C <b>Solubility:</b> Insoluble <b>Flash Pt:</b> Nonflammable <b>LEL/LFL:</b> Nonflammable <b>UEL/UFL:</b> Nonflammable NOTE: This substance is nonflammable but may present a moderate explosion hazard when airborne dusts of an adequate concentration are exposed to flames. <b>Vapor Density:</b> Not available <b>Vapor Pressure:</b> 1 mmHg @ 1627°F; 886°C <b>Specific Gravity:</b> 6.684 @ 77°F; 25°C <b>Incompatibles:</b> Acids, oxidizers, halogens <b>Appearance and odor:</b> silvery gray, lustrous metal	This substance is considered a poison by ingestion, irritating to the skin and mucous membranes causing inflammation to the nose, mouth, and throat. Chronic exposure may result in some forms of dermatitis. Ingestion may result in a metallic taste, vomiting, colic, and diarrhea. Chronic exposure may result in addition to those stated above indigestion, loss of appetite and weight, and diarrhea. Sores in the mouth along with a sore throat help distinguish this form of poisoning from other forms of metallic poisoning such as lead and arsenic. Inhalation at excessive concentrations may result in difficulty in breathing, headaches and a bloody discharge from the nose, and chemical pneumonitis.

**TABLE 6-1  
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA  
NAS KEY WEST, FLORIDA**

Substance	CAS No.	Air Monitoring/Sampling Information	Exposure Limits	Warning Properties	Physical Properties	Health Hazard Information	
Arsenic	7440-38-2	Particulate form - This substance is not detectable using a PID or FID.	Sample with a Mixed-cellulose ester (MCE) filter and analyze using Inductively coupled plasma / atomic emission spectroscopy in accordance with NIOSH Method 7300.	OSHA: 0.010 mg/m3 (1910.1018)  NIOSH: 0.002 mg/m3 (Ceiling)  ACGIH: 0.010 mg/m3	The substance will generally be present in a particulate form or bound to particulates. As a result, air purifying respirators equipped with High Efficiency Particulate Air (HEPA) filters are suitable for use.  Recommended glove: Given this chemicals particulate form, any glove material is suitable for protection. Nitrile is the most common glove material.	<b>Boiling Pt: Sublimes</b> <b>Melting Pt: 1135°F; 613°C</b> <b>Solubility: Insoluble</b> <b>Flash Pt: Not available</b> <b>LEL/LFL: Not available</b> <b>UEL/UFL: Not available</b> <b>Vapor Density: Not available</b> <b>Vapor Pressure: 0 mmHg (approx.)</b> <b>Specific Gravity: 5.73 (metal)</b> <b>Incompatibilities: Strong oxidizers, bromine azide. Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.</b> <b>Appearance and Odor: Metal - Silver-gray or tin-white, brittle, odorless solid.</b>	Exposure to arsenic may cause ulceration of the nasal septum, dermatitis, gastrointestinal disturbances, respiratory irritation, hyperpigmentation of the skin, and peripheral neuropathy. Arsenic is recognized as a carcinogen by IARC, NTP, OSHA, and ACGIH.  Target organs include the liver, kidneys, skin, lungs, and lymphatic system (lung and lymphatic cancer).
Chromium Compounds	7440-47-3 (Element)	Not detectable by PID. Not detectable by FID.	Air sample using mixed cellulose - ester filter; acid desorption and analysis by atomic absorption. Sampling and analytical protocol shall proceed in accordance with NIOSH Method #7024.	OSHA & NIOSH: (Chromium II, III) 0.5 mg/m3 (Chromium VI) 0.1 mg/m3 (Ceiling)  ACGIH: 0.5 mg/m3 (Chromium II, III compounds), 0.05 mg/m3 (Chromium VI compounds)  IDLH: 30 mg/m3 (Chromium VI compounds)	The use of a air purifying, full face-piece respirator with a high efficiency particulate filter for concentrations up to 0.1 mg/m3.  Recommended Gloves: This is in particulate form. Therefore any glove suitable to prevent skin contact.	<b>Boiling Pt: 4788°F; 2642°C</b> <b>Melting Pt: 3452°F; 1900°C</b> <b>Solubility: Insoluble</b> <b>Flash Pt: Not applicable (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals)</b> <b>LEL/LFL: Not applicable</b> <b>UEL/UFL: Not applicable</b> <b>Vapor Density: Not available</b> <b>Vapor Pressure: 0 mmHg</b> <b>Specific Gravity: 7.14</b> <b>Incompatibilities: Strong oxidizers, peroxides, and alkalis</b> <b>Appearance and Odor: Appearance and odor vary depending upon the specific compound.</b>	Health hazards are characterized normally through chronic exposure manifesting as histologic fibrosis of the lungs and ulceration of the nasal septum and skin. IARC, NTP and ACGIH list various chromium compounds as possessing carcinogenic properties.

**TABLE 6-1  
CHEMICAL, PHYSICAL, AND TOXICOLOGICAL DATA  
NAS KEY WEST, FLORIDA**

Lead	7439-92-1	Particulate form - Unable to be detected by either PID or FID.	Air sample using a mixed cellulose ester filter; or HNO <sub>3</sub> or H <sub>2</sub> O <sub>2</sub> desorption; or Atomic absorption detection. NIOSH Method #7082 or #7300.	OSHA: 0.05 mg/m <sup>3</sup>  ACGIH: 0.05 mg/m <sup>3</sup>  NIOSH: 0.10 mg/m <sup>3</sup>  IDLH: 100 mg/m <sup>3</sup> as lead	The use of a air purifying, full-face respirator with high efficiency particulate air filter for up to 2.5 mg/m <sup>3</sup> .  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).	<b>Boiling Pt: 3164°F; 1740°C</b> <b>Melting Pt: 621°F; 327°C</b> <b>Solubility: Insoluble</b> <b>Flash Pt: Not applicable (Airborne dust may burn or explode when exposed to heat, flame, or incompatible chemicals)</b> <b>LEL/LFL: Not applicable</b> <b>UEL/UFL: Not applicable</b> <b>Vapor Density: Not available</b> <b>Vapor Pressure: 0 mmHg</b> <b>Specific Gravity: 11.34</b> <b>Incompatibilities: Strong oxidizers, peroxides, sodium acetylide, zirconium, and acids</b> <b>Appearance and Odor:</b> <b>Metal: A heavy ductile, soft gray solid.</b>	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.
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## **6.2 PHYSICAL HAZARDS**

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

- Slips, trips, and falls
- Lifting (strain/muscle pulls)
- Heat Stress (Ambient temperature extremes)

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

### **6.2.1 Slip, Trip and Fall Hazards**

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

- 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.
- Use footwear with adequate traction.
- Prepare work areas by removing tripping hazards (ruts, roots, debris). This is especially critical concerning approach pathways leading to or around heavy equipment.

## **6.3 NATURAL HAZARDS**

Insect/animal bites and stings, inclement weather, and other natural hazards must be considered given the location of activities to be conducted. In general, avoidance of areas of known infestation or nesting will be the preferred exposure control. Use of additional PPE with joints (ankles and wrists) taped, such as long pants tucked into boots or coveralls, is also recommended. Specific discussion on principle hazards of concern follows:

### **6.3.1 Fire Ants**

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

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

### **6.3.2 Snakes, Insects, and Other Animals**

The site is suspected of supporting a large population of eastern diamondback rattlesnakes. Given that areas to be investigated could be prime nesting and/or hiding locations for snakes and insects, precautions will be taken when opening manholes and other access doors. When possible, doors and manhole covers will be opened away from personnel to allow snakes or insects to escape. 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 since severe illness and death may result from allergic reactions. As with any medical condition or allergy, information regarding the condition must be listed on the Medical Data Sheet and the FOL and SSO notified.

There are various areas throughout the U.S. where Lyme Disease is endemic. Fortunately, Florida is not one of these areas. Nonetheless, personnel should be aware of the hazards of tick bites, Lyme Disease, and Southern Tick Associated Rash Illness (STARI). The longer a disease carrying tick remains attached to the body, the greater the potential for contracting the disease. Wearing long sleeved shirts and long pants (tucked into boots). As well as performing frequent body checks will 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.

An Office of Natural Resources or similar entity on Base should be contacted for further direction on the hazards and precautions of naturally occurring wildlife and insects.

### **6.3.3 Inclement Weather**

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

### **6.3.4 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. Heat stress monitoring will be conducted at the SSO's discretion.

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.



## **7.0 AIR MONITORING**

Direct reading air monitoring instruments are not anticipated to be necessary for site work since the primary contaminants of concern are PCB and metals. Airborne concentrations of dusts at levels that are capable of producing an exposure above the OSHA PEL are unlikely. Additionally, if airborne dusts are determined to be a problem, a direct read particulate/aerosol monitor will be used to ensure airborne dusts do not reach concentrations that are capable of causing an exposure. If the use of such a device is determined to be necessary or if the scope of work changes, this HASP will be modified accordingly to include procedures for use, frequency of use, calibration requirements, and appropriate action levels.



## **8.0 TRAINING/MEDICAL SURVEILLANCE REQUIREMENTS**

### **8.1 INTRODUCTORY/REFRESHER/SUPERVISORY TRAINING**

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

TtNUS personnel must complete 40 hours of introductory hazardous waste site training prior to performing work at NAS Key West. Additionally, TtNUS personnel who have had introductory training more than 12 months prior to site work must have completed 8 hours of refresher training within the past 12 months before being cleared for site work. In addition, 8-hour supervisory training in accordance with 29 CFR 1910.120(e)(4) will be required for site supervisory personnel. Documentation of TtNUS introductory, supervisory, and refresher training as well as site-specific training will be maintained at the project. Copies of certificates or other official documentation will be used to fulfill this requirement.

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 will 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 9.2).

#### **8.1.1 Requirements for Subcontractors**

Identified TtNUS subcontractor personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field work at the NAS Key West. TtNUS subcontractors must certify that each employee has had such training by sending TtNUS a letter, on company letterhead, containing the information in the example letter provided in Figure 8-1. This letter will be accompanied by training certificates or some other form of official documentation for subcontractor personnel participating in site activities.

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

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

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

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

### **8.3 MEDICAL SURVEILLANCE**

TtNUS personnel participating in project field activities will have had a physical examination meeting the requirements of TtNUS's medical surveillance program and will be medically qualified to perform hazardous waste site work using respiratory protection. Documentation for medical clearances will be maintained in the TtNUS Pittsburgh and/or Aiken offices and made available as necessary.

Each field team member and visitor entering the Exclusion Zone(s) shall be required to complete and submit a copy of Medical Data Sheet presented in Figure 8-4. 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.

#### **8.3.1 Medical Surveillance Requirements for Subcontractors**

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

Subcontractors who have a company medical surveillance program meeting the requirements of paragraph (f) of OSHA 29 CFR 1910.120 can substitute "Subcontractor Medical Approval Form" with a

letter, on company letterhead, containing the information in the example letter presented in Figure 8-3 of this HASP.

### **8.3.2 Other Requirements for Field Personnel**

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

## **8.4 SUBCONTRACTOR EXCEPTIONS**

**The use of the subcontractor exception is strictly limited to the authority of the CLEAN Health and Safety Manager.**

In situations in which the exclusion zone is not entered or when there is no potential for exposure to site contaminants, subcontractor personnel may be exempt from some of the training and medical surveillance requirements. Subcontractors and visiting personnel are required to receive site-specific training (as discussed in Section 8.2) regarding information provided in this HASP. Examples of subcontractors who may be exempt from training and medical surveillance requirements may include surveyors who perform surveying activities at the site perimeters or in areas where there is no potential for exposure to site contaminants, and in this case the subcontractor providing concrete coring services.

**Figure 8-1**  
**Example Training Letter**

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

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

Month, day, year

Mr. Charles Bryan  
Task Order Manager  
Tetra Tech NUS, Inc.  
900 Trail Ridge Road  
Aiken, South Carolina 29803

Subject: HAZWOPER Training for Naval Air Station Key West, Florida

Dear Mr. Bryan:

As an officer of XYZ Corporation, I hereby state that I am aware of the potential hazardous nature of the subject project. I also understand that it is our responsibility to comply with applicable occupational safety and health regulations, including those stipulated in Title 29 of the Code of Federal Regulations (CFR), Parts 1900 through 1910 and Part 126.

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

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

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

Sincerely,

(Name and Title of Company Officer)



**Figure 8-3**  
**Subcontractor Medical Approval Form**  
**Page 1 of 2**

For employees of \_\_\_\_\_  
Company Name

Participant Name: \_\_\_\_\_ Date of Exam: \_\_\_\_\_

**Part A**

The above-named individual has:

1. Undergone a physical examination in accordance with OSHA Standard 29 CFR 1910.120, paragraph (f) and found to be medically -  
  
 qualified to perform work at the NAS Key West work site  
 not qualified to perform work at the NAS Key West work site  
  
and,
2. Undergone a physical examination as per OSHA 29 CFR 1910.134(b)(10) and found to be medically -  
  
 qualified to wear respiratory protection  
 not qualified to wear respiratory protection

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

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

**Part B**

I, \_\_\_\_\_, have examined \_\_\_\_\_  
Physician's Name (print) Participant's Name (print)

and have determined the following information:

**Figure 8-3**  
**Subcontractor Medical Approval Form**  
**Page 2 of 2**

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

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

---

---

---

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

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---

---

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

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

- may  
 may not

perform his/her assigned task.

Physician's Signature \_\_\_\_\_

Address \_\_\_\_\_

Phone Number \_\_\_\_\_

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

---

Address



## 9.0 SITE CONTROL

Site operations and control will be facilitated through the use of established work zones and security and control of those zones. These activities will minimize the impact and spread of contaminants brought to the surface through demolition and excavation methods as well as protect personnel and visitors within these zones during ongoing operations.

### 9.1 WORK ZONES

Tetra Tech NUS will delineate and use work zones in conjunction with decontamination procedures to prevent the spread of contaminants to other areas of the site. A three-zone approach will be used for work at this site; an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. These will be used to control access to the work areas, restricting the general public, avoiding potentials to spread any contaminants, and to protect individuals who are not cleared to enter by way of training and/or medical surveillance qualifications.

#### 9.1.1 Exclusion Zone

An Exclusion Zone will be established at each location where intrusive site work will be performed. The purpose of an exclusion zone is to define an area where specified requirements and restrictions must be observed (such as PPE usage, restrictions against smoking/eating etc.). These are areas that could be adversely impacted by either chemical or physical hazards. Exclusion Zone sizes and dimensions can vary based on various factors, such as:

- The nature of planned activities and the size of the area needed to safely perform them
- Physical and topographical features of the site
- Weather conditions
- Field and analytical measurements of air and environmental contaminants
- Air dispersion calculations
- Physical, chemical and toxicological properties of the contaminants being investigated

The following dimensions are to be observed for establishing the initial size of Exclusion Zones for this project:

- Surface soil sampling: The exclusion zone for this activity will be set at 10 feet surrounding the personnel and sampling equipment.
- Decontamination operation. The exclusion zone for this activity will be set at 10 feet surrounding the personnel and sample equipment decontamination wash and rinse.

Exclusion zones shall remain marked until the SSO has evaluated the restoration effort and has authorized changing the zone status.

Exclusion zones will be marked using fencing, barrier tape, traffic cones and/or drive poles. Signs will be posted to inform and direct site personnel and site visitors.

### **9.1.2 Contamination Reduction Zone**

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

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

- As samplers move from location to location during sampling activities, dedicated sampling devices and PPE will be washed of gross contamination, removed, separated, and bagged. Personnel will use hygienic wipes, such as Handy Wipes, as necessary for personnel decontamination until they can access the centralized decontamination unit. At the first available opportunity personnel will wash their face and hands. This is also true prior to breaks and lunch when contamination can be transferred to the mouth through hand to mouth contact. This route of exposure is estimated to have the greatest and most likely potential for exposure to the contaminants of concern.
- Muddy over-boots and gloves may be required to go through a gross contamination wash at the exclusion zone. These items will then be cleaned thoroughly at the centralized decontamination unit.
- Potentially contaminated tooling along with PPE will be wrapped, when necessary, for transport to the decontamination area.

- Upon completion of the assigned tasks personnel will move through the central decontamination area to clean reusable PPE and field equipment. Based on ambient conditions medical evaluations may take place at the termination point of the decontamination line. These evaluations will include pulse rate, oral temperature, and breathing rate to evaluate physiological demands on site personnel. As stated earlier, these evaluations will be based on ambient conditions and acclimation periods.

### **9.1.3 Support Zone**

The Support Zone will consist of a field trailer, storage, lay-down areas, or some other uncontaminated, controlled point. The Support Zone for this project will include a staging area where site vehicles can be parked, equipment will be unloaded, and where food and drink containers will be maintained. The support zones will be established in clean areas of the site.

## **9.2 SAFE WORK PERMITS**

Exclusion Zone work and certain support tasks conducted in support of this project will be performed using Safe Work Permits to guide and direct field crews on a task by task basis. Partially completed Safe Work Permits have been prepared for each of the planned tasks and are included in Attachment III of this HASP. The SSO is responsible for completing the remaining portions of these permits, and for reviewing them with the task participants as part of daily task-specific tailgate meetings. A blank Safe Work Permit is included in Figure 9-1 as an example.

The use of these permits will ensure that site-specific considerations and changing conditions are incorporated and addressed into the field activities. Safe Work Permits will require the signatures of either the FOL or the SSO, as well as the signature of a representative of any subcontractors that will participate in the task (when appropriate). personnel that will be engaged in on-site activities must be made aware of the contents of the appropriate Safe Work Permits before participating in any of the covered tasks. If additional tasks become necessary, the PHSO is to be notified so that this HASP can be appropriately reviewed/modified and to help prepare the necessary Safe Work Permit(s).

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

Upon completion of the work for which the Safe Work Permit was assigned, the Safe Work Permit will be turned into the FOL or the SSO. Concerns, complaints, and suggestions may be made on the reverse of the Safe Work Permit for consideration by the FOL and/or the SSO. Permits turned in with suggestions, difficulties, or complaints are to be forwarded to the PHSO for review.

### **9.3 SITE MAP**

Once the areas of contamination, access routes, topography, dispersion routes are determined, a site map will be generated and adjusted as site conditions change. This map will be posted to illustrate up-to-date information of contaminants and adjustment of zones and access points. This map will be posted at the field support trailer or other centralized location. Figure 2-1 in the Work Plan will serve as the preliminary version until investigation reveals more information.

### **9.4 BUDDY SYSTEM**

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

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

Tetra Tech NUS and subcontractor personnel will provide MSDSs for chemicals brought on-site. The contents of these documents will be reviewed by the SSO with the user(s) of the chemical substances prior to any actual use or application of the substances on-site. The MSDSs will be maintained in a central location (i.e., temporary office) and will be available for anyone to review upon request. The SSO will be responsible for implementing a site-specific Hazard Communication Program (See Section 5.0 of the TtNUS Health and Safety Guidance Manual). This includes collection of MSDSs, creation and maintenance of an accurate Chemical Inventory Listing, container labeling and personnel training issues, and other aspects of Hazard Communication.

**FIGURE 9-1  
SAFE WORK PERMIT**

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

**SECTION I: General Job Scope** (To be filled in by person performing work)

- I. Work limited to the following (description, area, equipment used): \_\_\_\_\_  
 II. Names: \_\_\_\_\_  
 III. On-site Inspection conducted  Yes  No Initials of Inspector \_\_\_\_\_  
TtNUS

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

- IV. Protective equipment required  
 Level D  Level B   
 Level C  Level A
- Respiratory equipment required  
 Full face APR  Escape Pack   
 Half face APR  SCBA   
 PAPR  Bottle Trailer   
 Skid Rig  None
- Modifications/Exceptions: \_\_\_\_\_

V. Chemicals of Concern	Action Level(s)	Response Measures
_____	_____	_____
_____	_____	_____
_____	_____	_____

- VI. Additional Safety Equipment/Procedures
- |   |  |                                       |  |
|---|--|---------------------------------------|--|
| Hardhat.....                            | <input type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) .... | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Safety Glasses .....                    | <input type="checkbox"/> Yes <input type="checkbox"/> No | Safety belt/harness .....             | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Chemical/splash goggles.....            | <input type="checkbox"/> Yes <input type="checkbox"/> No | Radio .....                           | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash Shield.....                      | <input type="checkbox"/> Yes <input type="checkbox"/> No | Barricades.....                       | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Splash suit/coveralls (Type: _____) ... | <input type="checkbox"/> Yes <input type="checkbox"/> No | Gloves (Type) .....                   | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Steel toe/shank Workboots.....          | <input type="checkbox"/> Yes <input type="checkbox"/> No | Work/rest regimen.....                | <input type="checkbox"/> Yes <input type="checkbox"/> No |
- Chemical Protective Over-boots (Type: \_\_\_\_\_)  Yes  No  
 Modifications/Exceptions: \_\_\_\_\_

- VII. Procedure review with permit acceptors
- |  |                          |                          |                        |                          |                          |
|--|--------------------------|--------------------------|------------------------|--------------------------|--------------------------|
|  | Yes                      | NA                       |                        | Yes                      | NA                       |
| Safety shower/eyewash (Location & Use) ..... | <input type="checkbox"/> | <input type="checkbox"/> | Emergency alarms.....  | <input type="checkbox"/> | <input type="checkbox"/> |
| Procedure for safe job completion .....      | <input type="checkbox"/> | <input type="checkbox"/> | Evacuation routes..... | <input type="checkbox"/> | <input type="checkbox"/> |
| Contractor tools/equipment inspected .....   | <input type="checkbox"/> | <input type="checkbox"/> | Assembly points .....  | <input type="checkbox"/> | <input type="checkbox"/> |

- VIII. Site Preparation
- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
|   | Yes                      | No                       | NA                       |
| Utility Locating and Excavation Clearance completed .....       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Equipment and Foot Traffic Routes Cleared and Established ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Physical Hazards Barricaded and Isolated .....                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Equipment Staged.....                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- IX. Additional Permits required (Hot work, confined space entry, excavation, etc.).  Yes  No  
 If yes, See SSO for appropriate permit

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

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

## 9.6 COMMUNICATION

It is anticipated that site personnel will be working in close proximity during proposed field activities. In the event that site personnel are in isolated areas or are separated by significant distances, a supported means of communication between field crews will be utilized. Two-way radio communication devices, if needed, will be used only with NAS Key West approval.

External communications may be accomplished utilizing telephones that have been/can be installed at predetermined and approved locations, or through cellular phones. External communication will primarily be used for the purpose of resource and emergency resource communications. Prior to the commencement of site activities, the FOL will determine and arrange for appropriate means to accomplish external communications.

Switch off the phone when in any area with a potentially explosive atmosphere and obey signals and instructions. Most manufacturers advised users to switch off the phone when at a refueling point. Do not use near fuels or chemicals or where blasting is in progress. Also, any restrictions or regulations in force at the base related to cellular phone use must be observed.

## 9.7 SITE VISITORS

Potential site visitors that may be encountered during the performance of the fieldwork could include the following:

- Personnel invited to observe or participate in operations by Tetra Tech NUS.
- Regulatory personnel (i.e., DOD, FDEP, EPA, OSHA, etc.)
- US Naval 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 PM or designee and following established base access procedures.

Once access to the base is obtained, personnel who require access to Tetra Tech NUS work sites (areas of ongoing operations) will be required to obtain permission from the FOL and the Base Contact. Upon gaining access to the work site, site visitors wishing to observe operations in progress will be required to meet the minimum requirements as stipulated 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 individuals name (proper identification required), who they represent, and the purpose for the visit. **The FOL is responsible for ensuring that site visitors are escorted.**
- site visitors will be required to produce the necessary information supporting clearance on to the site. This includes information attesting to applicable training (40-hours of HAZWOPER, 8-Hour Refresher as applicable), and medical surveillance as stipulated in Section 8.4, of this document. In addition, to enter the sites 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 site and applicable operational areas. visitors are required to observe the protective equipment and site restrictions in effect at the work areas visited. Any and 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 on-site activities to be terminated until that visitor can be removed. Removal of unauthorized visitors will be accomplished with support form the Base Contact, if necessary. At a minimum, the Base Contact will be notified of any unauthorized visitors.

## **9.8 SITE SECURITY**

As this activity will take place at a United States Naval facility, the first line of security will be provided by the base gate restricting the general public. The second line of security will take place at the work site referring interested parties to the FOL and Base Contact.

Security at the work areas will be accomplished using field personnel. This is a multiple person operation, involving multiple operational zones. Tetra Tech NUS personnel will retain complete control over active operational zones.

The Base Contact will serve as the focal point for base personnel and interested parties and will serve as the primary enforcement contact.



## **10.0 SPILL CONTAINMENT PROGRAM**

### **10.1 SCOPE AND APPLICATION**

It is not anticipated that bulk hazardous materials (over 55-gallons) will be accumulated or handled as part of the scope of work. It is also not anticipated that spillage of stored materials would constitute a danger to human health or the environment. Prior remediation activities have disturbed and homogenized the surface soil at the water tower site. Any soil IDW that is generated will be placed back into the sample excavation at each respective sampling location. Decontamination fluids, and disposable PPE, and investigation materials (e.g., acetate liners) will be drummed or bagged and disposed of in accordance with Federal, State, and local regulations.

### **10.2 POTENTIAL SPILL AREAS**

Potential spill areas will be monitored in an ongoing attempt to prevent and control further potential contamination of the environment. Currently, there are few areas vulnerable to this hazard including the area used for central staging and decontamination.

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

To establish an early detection of potential spills or leaks, a periodic walk-around by personnel staging or disposing of containers will be conducted at least once each week while site activities are underway. These inspections are to be performed during working hours, to visually determine that containers are not leaking. Any leaks identified will be collected and contained using absorbents such as Oil-dry, vermiculite, or sand, stored at the staging area in a drum conspicuously marked. This material too, will be containerized for disposal pending analyses. inspections are to 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 or 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 examples of the equipment that may be maintained at the staging area for the purpose of supporting this Spill Prevention/Containment Program.

- 55-gallon U.S. DOT 17-E or 17-H drums
- Shovels, rakes, and brooms
- Labels

## **10.6 SPILL CONTROL PLAN**

It is not anticipated that a spill will occur which the field crews cannot handle. Should one occur, however, the FOL or SSO will carry out notification of appropriate emergency response agencies. The following describes the steps field personnel will implement upon detecting a spill or leak.

- Notify the SSO or FOL immediately upon the detection of a leak or spill.
- Use the personal protective equipment stored at the staging area. Take immediate actions to stop the leak or spill by plugging or patching the drum/container or raising the leak to the highest point. Spread the absorbent material in the area of the spill covering completely.
- Transfer the material to a new drum/container, collect and containerize the absorbent material. Label the new drum/container appropriately. Await analyses for shipment or disposal options.

## 11.0 CONFINED-SPACE ENTRY

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

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

A Permit-Required Confined Space is one that:

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

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



## 12.0 MATERIALS AND DOCUMENTATION

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

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

### 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 specified documents is not feasible, (such as no office trailer), these documents should be separated and immediately accessible.

**Chemical Inventory Listing (maintained)** - This list represents 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 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. **It also states that reproductions or facsimiles of the poster shall be at least 8 1/2 by 14 inches with 10 point type.** A copy of the OSHA poster is included in Attachment IV of this HASP.

**Site Clearance Posting (maintained)** - This list is found within the training section of the HASP (See Figure 8-2). This list identifies 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 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 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.

## 13.0 GLOSSARY

ACGIH	American Conference of Governmental Industrial Hygienists
APR	Air Purifying Respirators
AST	Aboveground Storage Tank
BGS	Below Ground Surface
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
CNS	Central Nervous System
CRZ	Contamination Reduction Zone
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
HEPA	High Efficiency Particulate Air
I.P.	Ionization Potential
N/A	Not Available
NIOSH	National Institute Occupational Safety and Health
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PAH	Polycyclic Aromatic Hydrocarbons
PEL	Permissible Exposure Limit
PHSO	Project Health and Safety Officer
PPE	Personal Protective Equipment
PVC	Poly Vinyl Chloride
SAP	Sampling and Analysis Plan
SCBA	Self Contained Breathing Apparatus
SSO	Site Safety Officer
STEL	Short Term Exposure Limit
SWMU	Solid Waste Management Unit
TOM	Task Order Manager
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
WP	Work Plan



**ATTACHMENT I**

**INJURY/ILLNESS PROCEDURE  
AND REPORT FORM**



## TETRA TECHNUS, INC.

### INJURY/ILLNESS PROCEDURE WORKER'S COMPENSATION PROGRAM

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#### 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.tetratech.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](http://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 the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project \_\_\_\_\_

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

Address \_\_\_\_\_

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

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  
DECONTAMINATION ACTIVITIES  
FORMER WATER TOWER SITE AREA NAS KEY WEST, FLORIDA**

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

**SECTION I: General Job Scope**

- I. Work limited to the following (description, area, equipment used): Decontamination of sampling equipment (brushes and spray bottles will be used).
- II. Required Monitoring Instrument(s): None required – visual observation
- III. Field Crew: \_\_\_\_\_
- IV. On-site Inspection conducted  Yes  No Initials of Inspector TtNUS

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

- |   |  |
|---|--|
| IV. Protective equipment required<br>Level D <input checked="" type="checkbox"/> Level B <input type="checkbox"/><br>Level C <input type="checkbox"/> Level A <input type="checkbox"/><br>Detailed on Reverse | Respiratory equipment required<br>Full face APR <input type="checkbox"/> Escape Pack <input type="checkbox"/><br>Half face APR <input type="checkbox"/> SCBA <input type="checkbox"/><br>PAPR <input type="checkbox"/> Bottle Trailer <input type="checkbox"/><br>Skid Rig <input type="checkbox"/> None <input checked="" type="checkbox"/> |
|---|--|

Modifications/Exceptions: Minimum requirement include sleeved shirt and long pants, safety glasses, safety footwear, and nitrile gloves. When using pressure washers, steam cleaners field crews will wear hearing protection, and face shields (over safety impact glasses).

- |  |  |  |
|--|--|--|
| V. Chemicals of Concern<br><u>PCBs, antimony, arsenic, chromium and lead</u> | Action Level(s)<br><u>Visual observation</u> | Response Measures<br><u>Repeat decontamination</u> |
|--|--|--|

- VI. Additional Safety Equipment/Procedures
- |   |   |  |
|---|---|--|
| Hard-hat ..... <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Safety Glasses ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Chemical/splash goggles ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Splash Shield ..... <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Splash suits/coveralls ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Steel toe Work shoes or boots ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Hearing Protection (Plugs/Muffs) ..... <input type="checkbox"/> Yes <input type="checkbox"/> No<br>Safety belt/harness ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Radio ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Barricades ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Gloves (Type - <u>Nitrile</u> ) ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Work/rest regimen ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |  |
|---|---|--|

Modifications/Exceptions: PVC rain suits or PE or PVC coated Tyvek for protection against splashes and overspray. Chemical resistant boot covers if excessive liquids are generated or to protected footwear. Hard hat at SSO discretion or if required for face shield. Face shield over safety glasses and hearing protection when operating pressure washer.

- |   |  |
|---|--|
| VII. Procedure review with permit acceptors Yes NA<br>Safety shower/eyewash (Location & Use) ..... <input type="checkbox"/> <input type="checkbox"/><br>Procedure for safe job completion ..... <input type="checkbox"/> <input type="checkbox"/><br>Contractor tools/equipment/PPE inspected ..... <input type="checkbox"/> <input type="checkbox"/> | Yes NA<br>Emergency alarms ..... <input type="checkbox"/> <input type="checkbox"/><br>Evacuation routes ..... <input type="checkbox"/> <input type="checkbox"/><br>Assembly points ..... <input type="checkbox"/> <input type="checkbox"/> |
|---|--|

- VIII. Site Preparation
- |  |     |    |    |
|--|-----|----|----|
| Utility Locating and Excavation Clearance completed..... <input type="checkbox"/>      | Yes | No | NA |
| Vehicle and Foot Traffic Routes Cleared and Established ..... <input type="checkbox"/> | Yes | No | NA |
| Physical Hazards Barricaded and Isolated..... <input type="checkbox"/>                 | Yes | No | NA |
| Emergency Equipment Staged ..... <input type="checkbox"/>                              | Yes | No | NA |

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

- X. Special instructions, precautions: Chemical hazards with decontamination because of use of fluids such as alconox, isopropyl alcohol, methanol, etc. To minimize the potential for exposure, site personnel will use PPE and prevent contact with potentially contaminated equipment. Refer to the manufacturer's MSDS regarding PPE, handling, storage, and first-aid measures related to any decontamination solvents used.

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







**ATTACHMENT IV**

**OSHA POSTER**



# You Have a Right to a Safe and Healthful Workplace. IT'S THE LAW!

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



The *Occupational Safety and Health Act of 1970 (OSH Act)*, P.L. 91-596, assures safe and healthful working conditions for working men and women throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primary responsibility for administering the *OSH Act*. The rights listed here may vary depending on the particular circumstances. To file a complaint, report an emergency, or seek OSHA advice, assistance, or products, call 1-800-321-OSHA or your nearest OSHA office: • Atlanta (404) 562-2300 • Boston (617) 565-9860 • Chicago (312) 353-2220 • Dallas (214) 767-4731 • Denver (303) 844-1600 • Kansas City (816) 426-5861 • New York (212) 337-2378 • Philadelphia (215) 861-4900 • San Francisco (415) 975-4310 • Seattle (206) 553-5930. Teletypewriter (TTY) number is 1-877-889-5627. To file a complaint online or obtain more information on OSHA federal and state programs, visit OSHA's website at [www.osha.gov](http://www.osha.gov). If your workplace is in a state operating under an OSHA-approved plan, your employer must post the required state equivalent of this poster.

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

