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ABBREVIATED ACCIDENT PREVENTION PLAN FOR OVERSIGHT ACTIVITIES AT SOLID
WASTE MANAGEMENT UNIT 5 (SWMU 5) OLD BURN PIT SITE NSA CRANE IN
03/01/2010
TETRA TECH NUS INC

**ABBREVIATED
ACCIDENT PREVENTION PLAN**

FOR

**OVERSIGHT ACTIVITIES AT
SWMU 5 – OLD BURN PIT
NSA CRANE
CRANE, INDIANA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY CONTRACT**

**Submitted to:
Naval Facilities Engineering Command Mid-West
Contract Number N62472-03-D-0057
Contract Task Order C063**

**Submitted by:
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March 2010

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APPENDIX

- 1 Employee Training/Qualifications

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- 1 Activity Hazard Analysis

ACRONYMS

§	Section
dB	decibels
AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
APP	Accident Prevention Plan
BLS	Bureau of Labor Statistics
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CPR	Cardiopulmonary resuscitation
SCP	Certified Safety Professional
CTO	Contract Task Order
DART	Days Away/Restricted Duty/Transfer
dB	Decibels
DDESB	Department of Defense Explosives Safety Board
DEET	N, N-diethyl-m-toluamide
DNT	Dinitrotoluene
DPT	Direct Push Technology
EM	Engineer Manual
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSA	Hollow Stem Auger
HTRW	Hazardous Toxic and Radioactive Waste
MSDS	Material Safety Data Sheet
NAICS	North American Industry Classification System
NAVFAC	Naval Facilities Engineering Command
NRL	Naval Research Laboratory
NRR	Noise Reduction Rating
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
PHSO	Project Health and Safety Officer
PM	Project Manager
PPE	Personal protective equipment
RCIR	Recordable Case Incident Rate
RPM	Remedial Project Manager

SAP	Sampling and Analysis Plan
SHM	Safety and Health Manager
SSC	Site Safety Coordinator
SSO	Site Safety Officer
SI	Site Inspection
Tetra Tech	Tetra Tech NUS, Inc.
TP	Technical Paper
USACE	United States Army Corps of Engineers

A. TITLE, SIGNATURE, AND PHONE NUMBER OF THE PLAN PREPARER.

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B. BACKGROUND INFORMATION

Contractor: Tetra Tech NUS

Contract Number: N62472-03-D-0057, CTO C063

Project Name: Oversight Activities at SWMU 5 – Old Burn Pit

Project Description

The objective of this task will be to excavate and remove debris and to implement oversight and sampling activities at SWMU 5 at Naval Support Activity (NSA) Crane, Crane, Indiana. This Accident Prevention Plan (APP) and the associated Site-Specific Health and Safety Plan (HASP) addresses the activities to be performed by Tetra Tech NUS (Tetra Tech) and its subcontractor company, Lee and Ryan. These documents address applicable items specified under the U.S. Army Corps of Engineers Safety and Health Requirements Manual, Engineering Manual (EM) 385-1-1, and United States Occupational Safety and Health Administration (OSHA) Title 29 of Code of Federal Regulations (CFR), § 1910.120(b).

This APP and the accompanying HASP are available to (1) on-site personnel who may be exposed to hazardous on-site conditions, including Tetra Tech personnel participating in field activities, and (2) site visitors, including regulatory agency representatives. Site-specific sections of EM 385-1-1 applicable to this field effort are as follows:

- 1 - Program Management
- 2 - Sanitation
- 3 - Medical and First Aid Requirements
- 4 - Temporary Facilities
- 5 - Personal Protective and Safety Equipment
- 6 - Hazardous Substances, Agents, and Environments
- 7 - Lighting
- 8 - Accident Prevention Signs, Tags, Labels, Signals, Piping System Identification, and Traffic Control
- 9 - Fire Prevention and Protection
- 10 - Welding and Cutting
- 11 - Electrical
- 12 - Control of Hazardous Energy
- 13 - Hand and Power Tools
- 14 - Material Handling, Storage, and Disposal
- 15 - Rigging
- 16 - Machinery and Mechanized Equipment
- 17 - Conveyors
- 18 - Motor Vehicles and Aircraft
- 19 - Floating Plant and Marine Activities
- 20 - Pressurized Equipment and Systems
- 21 - Safe Access and Fall Protection
- 22 - Work Platforms
- 23 - Demolition
- 24 - Floor and Wall Holes and Openings
- 25 - Excavations
- 26 - Underground Construction, Shafts, and Caissons
- 27 - Concrete and Masonry Construction and Steel Erection
- 28 - Hazardous Waste Operations and Emergency Response (HAZWOPER)

- 29 - Blasting
- 30 - Contract Diving Operations

Site Maps

A facility location map and a site location map showing the location where Tetra Tech employees will be performing work are included as part of the Sampling and Analysis Plan (SAP) for the work associated with this field effort at NSA Crane. Figure B-1 is an aerial photograph which outlines the area where the work will be performed.

FIGURE B1
SWMU 5



Tetra Tech Safety Statistics

The following table presents safety statistics for Tetra Tech for the last 3 calendar years compared to the national averages for our industry. This comparison uses data collected by the United States Department of Labor, Bureau of Labor Statistics (BLS) for different types of employers, segregated by North American Industry Classification System (NAICS) codes.

Comparison of Tetra Tech and 2008 BLS Data for NAICS Code 541 (RCIR and DART Case Rates)

	NAICS 541 Professional, Scientific and Technical Services 2008	Tetra Tech 2006	Tetra Tech 2007	Tetra Tech 2008	Tetra Tech 2009
Total Recordable Case Incident Rate (RCIR)	1.1	0.55	0.91	0.3	0.2
Days Away/Restricted Duty/Transfer Case Rate (DART)	0.5	0.3	0.3	0.2	0.2

The data comparison illustrates that Tetra Tech' performance compares favorably with the most-recent national averages for the environmental engineering and hazardous waste services industries.

Tetra Tech, Inc. Experience Modification Rates and OSHA Logs:

Policy Year (October 1 - September 30) 2006-2007:	0.90
Policy Year 2007-2008:	0.92
Policy Year 2008-2009:	0.81

C. STATEMENT OF SAFETY AND HEALTH POLICY

Tetra Tech is committed to providing our employees with a safe and healthful workplace. It is the goal of Tetra Tech to continue excellent safety performance on NAVFAC contracts to support the Navy in their safety efforts. Specifically, Tetra Tech will perform work in a manner that is consistent with the Zero Incident Philosophy. It is our goal to plan and perform the work in a manner that integrates safety and health considerations so that worker injuries or illnesses, environmental releases/impacts, or property damage are eliminated. In addition to the line and staff management functions described in this APP and the accompanying HASP, each individual performing work under this contract has the responsibility for their own personal health and safety, as well as assisting in assuring the health and safety of their co-workers. This element is also the first one listed in our corporate Health and Safety Policy Statement, which requires that "each employee recognize a *personal* responsibility for their own health and safety and

for actions that affect the health and safety of fellow employees." This employee responsibility includes observing specified health and safety requirements and communicating with the designated SSO on matters such as the effectiveness of specified control measures, identification of new potential hazards, and other related issues.

An employee's failure to adhere to the requirements of this APP and HASP or to observe specified safety requirements and restrictions or to properly use identified protective equipment may lead to injury or illness. As a result, deviation from safety and health procedures is not tolerated. Failure to comply with health and safety procedures and requirements will lead to reprimand up to and including dismissal.

Health and safety-related information is communicated to employees through meetings, postings, written communications, and reporting of hazards.

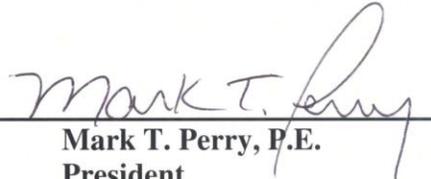
The principal elements of our program are founded on the requirements presented in the Health and Safety Policy on the following page.

TETRA TECH NUS, INC. HEALTH AND SAFETY POLICY

Tetra Tech NUS, Inc., is committed to providing our employees with a safe and healthful workplace. We believe that occupational injuries and illness can be prevented; and we are convinced that a strong Health and Safety Program is essential to achieve this objective.

The principal elements of our program are founded on the requirements that our managers and employees:

- Recognize a *personal responsibility* for their own health and safety and for actions that affect the health and safety of fellow employees.
- Integrate safety and health into *all aspects* of their work, with the well-being of employees as the primary concern in all activities.
- Comply with applicable *federal, state, and local regulations*, as well as with our internal Corporate and our clients' safety and health policies and procedures.
- Take an *active role* in the Health and Safety Program by providing input and constructive criticism for improvements to the program.


Mark T. Perry, P.E.
President


Matthew M. Soltis, CIH, CSP
Health and Safety Manager

 Tetra Tech NUS, Inc.
January 2010

D. RESPONSIBILITIES AND LINES OF AUTHORITY

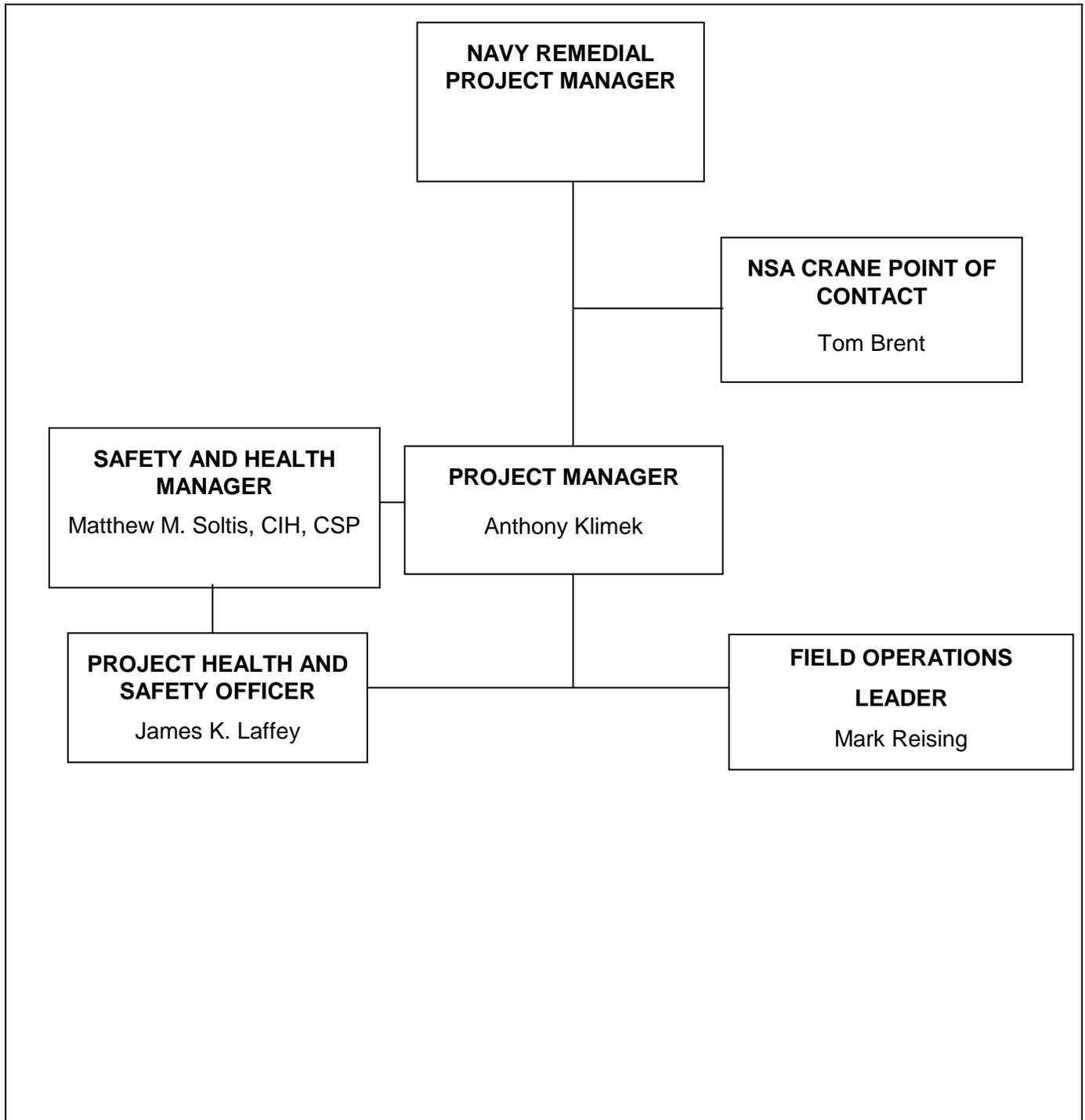
The Tetra Tech Project Manager (PM) appoints the Field Operations Leader (FOL) who is responsible for field implementation of tasks and procedures contained in the HASP and this APP. The FOL has completed OSHA 30-Hour Construction Safety Course, the 40-Hour HAZWOPER and subsequent 8-Hour HAZWOPER Refresher Training, 8-Hour HAZWOPER Supervisor Training, and First Aid/Cardiopulmonary Resuscitation (CPR) and Blood-borne Pathogen training in accordance with regulatory requirements applicable to the work that will be performed for this project. The Tetra Tech FOL will coordinate with the Lee & Ryan SHSO who has primary responsibility for responding to and correcting emergencies and for responding appropriately to ensure the safety of site personnel and the public (e.g., evacuation of personnel from the site area). The FOL is also responsible for ensuring that corrective measures have been implemented, appropriate internal and Navy authorities have been notified, and follow-up reports have been completed. Individual subcontractors are required to cooperate with the FOL within the parameters of their Scopes of Work.

Personnel are required to report injuries, illnesses, spills, fires, and property damage as soon as possible to the FOL and the Lee & Ryan SHSO. The Lee & Ryan SHSO is notified of any on-site emergencies and is responsible for ensuring that the appropriate emergency procedures described in this section are followed. The FOL is responsible for informing the government designated authority (GDA) and Navy Remedial Project Manager (RPM) of major incidents and associated corrective actions within 24 hours of the incident.

Management at Tetra Tech has the authority and responsibility for implementing and maintaining this APP and HASP. See the HASP for specific responsibilities. An organization chart presenting the lines of authority for this project is on the next page.

The work under this contract, including this field effort, is subject to a comprehensive health and safety program developed, designed, and implemented by Matthew M. Soltis, CIH, CSP. Mr. Soltis serves as Director of Health and Safety for Tetra Tech and as the Safety and Health Manager (SHM) for the planned work addressed in this APP.

**TABLE 4-1
ORGANIZATION CHART
ON-SITE SUPPORT OF
SI ACTIVITIES AT NSA CRANE**



This APP and associated HASP is rigorously followed during this field effort. Violators are verbally notified upon first violation. The Tetra Tech FOL then notes the violation in the field logbook. Upon second violation, the Tetra Tech PM, the violator and his/her supervisor are notified. A third violation will result in a written notification and the violator's eviction from the site. The written notification is sent to the human resources development and the Safety and Health Manager (SHM).

Any violations deemed serious, intentional, or otherwise egregious will be subject to immediate corrective action, up to and including removal from the site, and will not require adherence to this progressive, three-step disciplinary process.

Personnel will be encouraged to report to the SSO any conditions or practices that they consider detrimental to their health or safety, or those they believe violate applicable health and safety standards. Such reports can be oral or written. Personnel who believe that an imminent danger threatens human health or the environment are encouraged to bring the matter to the immediate attention of the SSO for resolution. Job site activities presenting danger to life or limb are stopped immediately and reported to the SSO for resolution.

At least one copy of this APP and the HASP will be available to Tetra Tech site personnel. Each vehicle taken to the job site will contain a copy of the APP and the HASP to ensure quick and easy access by employees. Minor changes in the HASP procedures are discussed at the beginning of each workday by the SSO at the daily tailgate safety meeting. Significant HASP revisions are discussed with the SHM and PM and approved via the HASP amendment form.

Specific Site Activities

The detailed Scope of Work for field activities performed during oversight and sampling support at NSA Crane will include the following tasks:

- Mobilization/demobilization
- Excavation
- Debris removal
- Oversight activities

For each of these tasks a detailed Activity Hazard Analyses (AHAs) are available in Section 14.0 of this APP.

E. TRAINING

Site personnel who will participate in on site activities are required to meet the training requirements outlined in EM 385-1-1. Furthermore, site personnel must satisfy any specialized training requirements that are presented in the AHAs for tasks to be completed under this Contract Task Order (CTO).

Tetra Tech personnel qualification and training certification documentation will be obtained by the PM/FOL and included in Appendix 1 of this APP, and a copy maintained on site. Training and certifications applicable to this project include the following:

- HAZWOPER as outlined in 29 CFR § 1910.120
- Current 8-hour HAZWOPER refresher
- The supervisory personnel will also have Supervisory Training in accordance with 29 CFR 1910.120(e)(4)
- OSHA 10 or 30 hour Construction Safety Training Course
- Specialized operations or responsibilities (Blood-borne pathogen, First Aid) will also require additional training for personnel filling those roles.

Site-Specific Safety and Health Training

Prior to accessing active work areas of the sites or participating in any intrusive activities, site personnel and visitors will first be required to undergo a site-specific safety and health training session conducted by the SSO, which will include a review of the HASP and signing of the Site-Specific Training Documentation form. Site workers will be required to sign a Daily Tailgate Safety Meeting form (included in HASP).

Before on-site activities begin, the Tetra Tech SSO will present a briefing for site personnel who will participate in on-site activities. The following topics will be addressed during the pre-work briefing:

- Names of the SSO and designated alternate
- Site history
- Work tasks
- Hazardous chemicals that may be encountered on site
- Physical hazards that may be encountered on site

- PPE, including types of respiratory protection to be used for work tasks
- Mandatory training and certification requirements (e.g., HAZWOPER; HAZWOPER 8-hour Refresher)
- Environmental surveillance (air monitoring) equipment use and maintenance
- Action levels and situations requiring an upgrade or downgrade of level of protection
- Site control measures including site communications and control zones
- Decontamination procedures
- Emergency communication signals and codes, including incident reporting procedures
- Environmental accident emergency procedures (in case contamination spreads outside the exclusion zone)
- Personnel exposure and accident emergency procedures (in case of falls, exposure to hazardous substances, and other hazardous situations)
- Fire and explosion emergency procedures
- Emergency telephone numbers
- Emergency routes

Any other health and safety-related issues that may arise before site activities begin are covered during the pre-work briefing by the SSO.

Issues that arise during implementation of on-site activities will be addressed during tailgate safety meetings to be held daily before the workday or shift begins and will be documented in a Daily Tailgate Safety Meeting form (included in the HASP). The tailgate safety meetings will be attended by site workers, subcontractors, and visitors and will be conducted by the PM and/or SSO. Any changes in procedures or site-specific health and safety-related matters will be addressed during these meetings.

These emergencies require follow-up and reporting. In addition to immediate reporting to the SSO and/or PM, an Incident Report Form must be completed, signed by the PM, SSO, and the employee's Office Manager, and submitted to the Tetra Tech SHM within 24 hours of an emergency situation. The report must include proposed actions to prevent similar incidents from occurring in the future. The SHM must be fully informed of the corrective action process so that the SHM may implement applicable elements of the process at other sites.

Emergencies are also reported to the Navy RPM. Contact information for these individuals is in the HASP.

F. PROCEDURES FOR JOB SITE INSPECTIONS

It is Tetra Tech's internal policy that job sites involving work for Naval Facilities Engineering Command (NAVFAC) Mid-West are subject to audits by corporate safety staff. The Tetra Tech SSO conducts Daily site safety inspections during this field effort to ensure safe work areas and compliance with the HASP. The Tetra Tech SHM maintains a corrective/preventive action database of the items noted during field audits. Responsibility for resolving each item noted during these audits is assigned and tracked through resolution. Results from field audits are also regularly communicated throughout Tetra Tech through training and electronic means as a method of continuous program improvement.

G. PROCEDURES FOR REPORTING MAN-HOUR WORKED AND INVESTIGATING ANY ACCIDENTS

Accidents or incidents as well as near-miss events are reported using the Tetra Tech incident reporting process and forms. Attachment IV of the HASP has the detailed information on incident reporting. The SHM is responsible for assuring that incidents and serious near-miss events are adequately investigated and is responsible for collecting, tracking, and trending incident data (e.g., recordable cases, employee hours worked, etc.). Accidents involving near misses, injuries, or illnesses must be immediately reported to the PM and the SHM, GDA and documented on the Tetra Tech Incident Report (in the HASP). Forms must be reviewed by the PM and the SSO.

Hazardous work conditions or unsafe work practices is corrected in a timely manner, both in the field and in the office. Upon discovery of an unsafe condition at a field site, the degree of hazard is assessed and action may range from complete shutdown of the operation to phased correction. Tetra Tech employees have "Stop Work" authority in the event that a potentially serious action or condition is observed. Tetra Tech will shut down a project during which life threatening, severe environmental impact, or significant equipment or property damage conditions may exist. Employees shall follow specific information for emergency evacuation and PPE usage as described in this APP and associated HASP. The PM and Navy RPM must be contacted regarding each incident.

H. EMERGENCY PLANNING

Since TtNUS personnel will be working in close proximity to each other, hand signals, voice commands, and air horns, will be sufficient to alert site personnel of an emergency. If site personnel will be working in remote locations or if site activities are conducted in separate sites simultaneously, two-way radios will be used to communicate between teams of workers.

If an emergency occurs on Base, the following procedures are to be initiated:

- Initiate an evacuation by hand signals, voice commands, air horn, or two-way radios. Report to the designated refuge assembly point in the support zone.
- Describe to the FOL (who will serve as the Incident Coordinator) what has occurred and as many details as possible. Once personnel are evacuated, incipient response procedures will be enacted to control the situation.

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

- On base call the emergency number (see HASP Table 2-1) and report the emergency. Give the emergency operator the location of the emergency, the type of emergency, the number of injured, and a brief description of what occurred. Stay on the phone and follow the instructions given by the operator. The operator will then notify and dispatch the proper emergency response agencies.

Conduct a head count of site personnel using the site logbook.

I. DRINKING WATER PROVISIONS, TOILET AND WASHING FACILITIES

This section will address the following items:

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

Toilets

One toilet will be provided for every 20 people. Toilets will be unisex and will have locking doors. The toilet provided will either be a chemical toilet and service provider or the flush toilet associated with a predetermined location.

Potable Water

Potable water as well as electrolyte balance sports drinks such as Gatorade will be provided to the field crews for fluid replacement. Storage and dispensing will proceed as follows:

- Containers will be clean and replenished daily.
- Containers will clearly marked as to their contents
 - (Potable Water – Drinking Water Only; Gatorade, etc.).
- Dispensing locations will be placed in identified break areas within the support zone.
 - The most likely location will be a break trailer.
 - This will serve as an area for cooling or warming as well as an identified food and drink consumption area.
- If larger containers are used, dispensing cups will be provided.
 - The coolers used for storage of potable drinks and cups will be stored in plastic bags away from potentially contaminating materials.

Showers and Change Rooms

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

Break Areas

Suitable locations will be provided for field personnel for the following use:

- Break areas for food and drink consumption
- Areas suitable for warming and cooling regimens
- Areas suitable for Safety Meetings

This location will be either the project trailer, or its own separate trailer based on the crew size. This area will be climate control to provide suitable shelter to combat heat or cold stress.

J. FIRST AID AND CPR TRAINING

As required by EM 385-1-1, Tetra Tech will ensure that a minimum of two people have current certifications in CPR, First Aid, and Blood-borne Pathogens. The two people with current training may be FOL or from the Sub-Contractor staff. Other than rendering basic CPR and First Aid, these employees are not expected to perform emergency medical duties. However, they are authorized to perform emergency rescue or other duties up to the level of their training.

Attachment III of the HASP is the Medical Data Sheet that is to be filled out by site personnel and made available in the case of an incident. The closest hospitals to these sites and directions to them are included in the HASP, as well as contact numbers for both the hospital and ambulance services. Tetra Tech personnel are to verify that the hospital route is accessible and available and that the most efficient route is well mapped.

K. PERSONAL PROTECTIVE EQUIPMENT

The levels of personal protection used for work tasks at the site is selected based on the nature of the planned work activities and on the known or anticipated hazards; types and concentrations of contaminants that may be encountered on site; and contaminant properties, toxicity, exposure routes, and matrixes. Specific PPE selected for this project is listed, by task, in the AHAs located in Section 14.0 of this APP.

PPE is selected by the Project Health and Safety Officer (PHSO) when writing the APP and HASP, and is confirmed through a rigorous review process by the Tetra Tech SHM. To assure proper PPE has been selected, both the physical and chemical hazards present at the job site are taken into account in both developing and reviewing safety-related documents. In lieu of a separate hazard assessment document being developed by Tetra Tech for Navy field efforts, the signatures of the SHM and the PHSO on the Signature Page of this APP constitute approval of the hazard assessment contained in the HASP.

The anticipated levels of protection selected for use by field personnel during site activities is Level D. If site conditions warrant a higher level of protection, the field personnel will withdraw from the site, immediately notify the Lee & Ryan SSO, and obtain further instructions.

PPE levels can be upgraded or downgraded based on a change in site conditions or investigation findings. When a significant change in site conditions occurs, hazards will be reassessed. Some indicators of the need for reassessment are discussed in Section 15.0.

PPE has been selected based on the results of task-specific hazard assessments. Through the completion of employee training (e.g., introductory 40-hour hazardous waste training, annual refresher training, etc.), Tetra Tech employees have been informed of the proper selection, use, and care of PPE items provided to them. After PPE is provided to an employee, the responsibility for using and caring for it appropriately is the responsibility of that employee.

The Tetra Tech FOL is responsible for assuring that these responsibilities are fulfilled through daily observations and work area inspections at the sites. The Tetra Tech FOL is also responsible for assuring that appropriate and adequate supplies of PPE are maintained such that they are readily available for issuance/replacement and in a clean and sanitary manner and location.

L. MACHINE GUARDS AND SAFETY DEVICES.

All equipment with machine guard and safety devices will be inspected and be in place and operational according to the manufactures instructions.

M. HAZARDOUS SUBSTANCES.

Tetra Tech's HASP must accompany this APP on job sites. The HASP contains information specific to the NSA Crane effort and provides requirements that employees must follow to ensure that their activities are carried out in accordance with both OSHA and applicable EM 385-1-1 requirements. Compliance with the HASP by Tetra Tech will be the means used to meet the requirements outlined in this APP.

Additionally, site-specific AHAs comply with OSHA requirements and EM 385-1-1 requirements. By adhering to requirements specified in the AHAs, work is performed on site in a safe manner. Minor changes to AHAs based on actual site conditions are permitted as necessary and applicable by the SSO in the field. Major changes to AHAs, such as Scope of Work changes, are documented on a revised AHA form and are subject to additional review by the Tetra Tech SHM.

Detailed task-specific hazards and controls are in the AHAs attached to this APP. Table 1 details the AHAs for the oversight and sampling activities provided in support of the NSA Crane field activities.

Table 1

Activity Hazard Analysis (AHA)

Activity/Work Task: Mobilization/Demobilization	Overall Risk Assessment Code (RAC) (Use highest code)	M				
Project Location: Naval Support Activity Crane—Crane, Indiana	Risk Assessment Code (RAC) Matrix					
Contract Number: N62472-03-D-0057	Severity	Probability				
Date Prepared: March 23, 2010		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title): Lauren Foster – Environmental Scientist	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
Reviewed by (Name/Title): Jim Laffey – Project Health & Safety Officer	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “ Hazard ” with identified safety “ Controls ” and determine RAC (See above)					
	“ Probability ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart	
	“ Severity ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk	
				M = Moderate Risk		
				L = Low Risk		
Job Steps	Hazards	Controls				RAC
1. Weather	1. Cold stress	<ol style="list-style-type: none"> 1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up. 				M
	2. Thunder/Lighting	<ol style="list-style-type: none"> 1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather. 4. Stop work for 20-minutes until storm passes or from last observed lighting strike. 				L

<p>2. Assembling, packing, unpacking equipment and supplies</p>	<p>1. Minor cuts, abrasions, or contusions handling equipment and tools.</p> <p>2. Heavy lifting (muscle strains and pulls).</p> <p>3. Vehicular traffic at the work site</p> <p>4. Intermittent high noise levels</p>	<p>1. Wear cut-resistant gloves when handling items with sharp or rough edges.</p> <p>1. Practice safe lifting techniques (use mechanical lifting devices such as a dolly whenever possible, ensure a clear path of travel and good grasp on object. Lift with legs not back, obtain help when needed to lift large, bulky, or heavy items).</p> <p>1. Locate vehicle and equipment staging areas. Inform site personnel of equipment areas and of their responsibility to stay clear of moving vehicles. 2. Observe designated and marked travel pathways. 3. Wear safety vests when activities involve encroaching on active traffic ways.</p> <p>1. Although not considered a highly probable event, based on the anticipated activities, the use of hearing protection may occasionally be required (at the onsite SSOs discretion). The SSO will observe the following:</p> <ul style="list-style-type: none"> • Available data or monitoring results collected from similar operations and/or collected during this activity. • Use of hearing protection within an established distance from an operation potentially generating excessive noise levels until these levels can be quantified. For instance, during the operation of heavy equipment (excavator) typical site control boundary will be the length of the boom/bucket plus 10 feet. This is a sufficient distance to remove personnel from excessive noise levels. Inside this boundary personnel will wear hearing protection. • The employees may utilize the following general rule of thumb to help make these determinations: • If noise levels are such that a worker must raise their 	<p>M</p> <p>M</p> <p>M</p> <p>L</p>
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<p>3. Performing a Job site Hazard Evaluation and Initial/Exit inspections of the intended work areas.</p>	<p>5. Slip/Trip/Fall Hazards</p>	<p>voice to communicate with someone who is within arm's reach (approximately 2 feet) of them, excessive noise levels are being approached and hearing protection is required.</p> <ol style="list-style-type: none"> 1. Implement and maintain good housekeeping practices throughout work areas 2. Preview walking/working areas and maintain them to identify and avoid when possible slipping/tripping hazards. 3. Preview work locations for unstable/uneven terrain. 	<p>M</p>
<p>3. Performing a Job site Hazard Evaluation and Initial/Exit inspections of the intended work areas.</p>	<p>1. Vehicular traffic at the work site</p>	<ol style="list-style-type: none"> 1. Locate vehicle and equipment staging areas. Inform site personnel of equipment areas and of their responsibility to stay clear of moving vehicles. 2. Observe designated and marked travel pathways. 3. Wear safety vests when activities involve encroaching on active traffic ways. 	<p>M</p>
<p>4. Performing initial clearance of travel pathways (foot/vehicular)</p>	<p>2. Slip/Trip/Fall Hazards</p>	<ol style="list-style-type: none"> 1. Implement and maintain good housekeeping practices throughout work areas 2. Preview walking/working areas and maintain them to identify and avoid when possible slipping/tripping hazards. 3. Preview work locations for unstable/uneven terrain. 	<p>M</p>
<p>4. Performing initial clearance of travel pathways (foot/vehicular)</p>	<p>1. Slip/Trip/Fall Hazards</p>	<ol style="list-style-type: none"> 1. Implement and maintain good housekeeping practices throughout work areas 2. Preview walking/working areas and maintain them to identify and avoid when possible slipping/tripping hazards. 3. Preview work locations for unstable/uneven terrain. 	

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ol style="list-style-type: none">1. Hand tools (dollies, hand carts, hand knives, shovels, etc.)2. Cut resistant gloves3. Work boots4. Hearing protection	None required.	<ol style="list-style-type: none">1. Visual inspection of hand tools, gloves, and boots prior to use by user. The SSO is to perform regular inspections for housekeeping issues and surveys of operational areas to insure compliance with the HASP.

Table 1

Activity Hazard Analysis (AHA)

Activity/Work Task: Multi-Media Sampling Activities	Overall Risk Assessment Code (RAC) (Use highest code)	M
Project Location: Naval Support Activity Crane—Crane, Indiana	Risk Assessment Code (RAC) Matrix	
Contract Number: N62472-03-D-0057	Severity	Probability
Date Prepared: March 23, 2010		Frequent Likely Occasional Seldom Unlikely
Prepared by (Name/Title): Lauren Foster – Environmental Scientist	Catastrophic	E E H H M
Reviewed by (Name/Title): Jim Laffey – Project Health & Safety	Critical	E H H M L
	Marginal	H M M L L
	Negligible	M L L L L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “ Hazard ” with identified safety “ Controls ” and determine RAC (See above)	
	“ Probability ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.	RAC Chart
	“ Severity ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible	E = Extremely High Risk
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.	H = High Risk
		M = Moderate Risk
		L = Low Risk
Job Steps	Hazards	Controls
		RAC

<p>1. Weather</p>	<p>1. Cold stress</p>	<p>1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up.</p>	<p>M</p>
<p>2. Oversight Activities</p>	<p>2. Thunder/Lighting</p>	<p>1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather. 4. The 30-30 rule shall be applied, which is, "if a time interval of 30 seconds or less is between lightning and its thunder, go inside (building/vehicle) and stay inside for at least 30 minutes." If no additional lightning and/or thunder is noted within this 30 minutes, work may resume at the SSO's direction. Personnel will be directed to seek suitable shelter that will provide adequate protection from the elements. Lightning threat detection will be coordinated within NSA Crane's existing systems.</p>	<p>L</p>
	<p>1. Insect/animal bites</p>	<p>1. Tape up joint between bottoms of pant legs and top of work boot with duct tape. 2. Apply insect repellants containing at least 10 percent N,N-diethyl-m-touluamide (DEET). Follow manufacturer's label instructions for proper application and re-application. 3. Perform close body inspections at the end of each day to detect/remove any insects. 4. If walking though high grass or brush areas, wear snake chaps and avoid approaching or disturbing potential nesting areas.</p>	<p>M</p>
	<p>2. Slips/Trips/Fall Hazards</p>	<p>1. Implement and maintain good housekeeping practices throughout work areas. 2. Maintain clear walking and working areas. 3. Eliminate, when possible, any debris and rutted areas that may create a tripping hazard. 4. Personnel will return the site to a neat and orderly</p>	<p>L</p>

<p>3. Sampling Activities</p>	<p>1. Chemical contaminants</p> <p>2. Insect/animal bites</p> <p>3. Slips/Trips/Fall Hazards</p> <p>4. Radiation (X-ray)</p>	<p>condition prior to leaving the site.</p> <p>5. Exit and access pathways will be maintained free of obstructions.</p> <p>1. Exposure to potential site contaminants during this activity is unlikely given the nature of the work and the limited contact with potentially contaminated media. However, as a precautionary procedure the FOL will use proper protective equipment and good hygiene practices, and will minimize contact with site contaminants.</p> <p>1. Tape up joint between bottoms of pant legs and top of work boot with duct tape.</p> <p>2. Apply insect repellants containing at least 10 percent N,N-diethyl-m-toluamide (DEET). Follow manufacturer's label instructions for proper application and re-application.</p> <p>3. Perform close body inspections at the end of each day to detect/remove any insects.</p> <p>4. If walking through high grass or brush areas, wear snake chaps and avoid approaching or disturbing potential nesting areas.</p> <p>1. Implement and maintain good housekeeping practices throughout work areas.</p> <p>2. Maintain clear walking and working areas.</p> <p>3. Eliminate, when possible, any debris and rutted areas that may create a tripping hazard.</p> <p>4. Personnel will return the site to a neat and orderly condition prior to leaving the site.</p> <p>5. Exit and access pathways will be maintained free of obstructions.</p> <p>1. The area where the XRF device is used will be restricted. The operator will ensure that only personnel critical to the operation are in the area.</p>	<p>L</p> <p>M</p> <p>L</p>
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		<ol style="list-style-type: none">2. The operator will ensure good general housekeeping is practiced to control potential contamination within a confined area. The operator will practice good work hygiene practices to minimize potential introduction of residual contamination into the body through hand to mouth contact.3. Knowledgeable personnel will operate the XRF instrument.4. The operator must never point the instrument at themselves or another person.5. The location of storage and use should be of restricted access to limit potential exposure to possible ionizing radiation.6. In use, the target should not be hand held and the area at least three paces beyond the target should be unoccupied.7. The instrument should be stored, in a locked case, or locked cabinets when not in use.8. When in use, the instrument must remain in the direct control of the trained and certified operator.9. Operators should minimize the time around the energized instrument, maximize the distance from the instrument window during shots, and shoot into high-density materials whenever possible.10. All reasonable measures, including labeling, operator training and certification, and the concepts of time, distance, & shielding, should be implemented to limit radiation exposure to “as low as reasonably achievable” (ALARA).	L
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Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<p>Personal Protective Equipment <u>Minimum:</u></p> <ul style="list-style-type: none"> • Safety toe boots, hard hats, and safety impact eye protection • Nitrile gloves for sampling events • Work clothes <p><u>Optional Items:</u></p> <ul style="list-style-type: none"> • High-visibility vests when near active traffic areas. • Sampling equipment • XRF Detector 	<ol style="list-style-type: none"> 1. PPE training in proper use, care, storage, and limitations. It is anticipated that this has been covered in employees' 40-hour HAZWOPER training, which is to be verified by the FOL through initial training documentation and reviewed prior to permitting personnel to participate in site activities, and will be confirmed by visual observations of worker activities. <p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Mark Reising • Lauren Foster <ol style="list-style-type: none"> 2. Field personnel operating the XRF equipment will have read and will be completely familiar with the manufacturers' instructions and operations manual. <p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Mark Reising • Lauren Foster 	<ol style="list-style-type: none"> 1. Initial PPE Inspection performed by the FOL. Ongoing (prior to each use) Inspections are the responsibility of PPE users.

Table 1

Activity Hazard Analysis (AHA)

Activity/Work Task: Operating Gasoline Powered Chain Saw to Remove Small Brush as Necessary	Overall Risk Assessment Code (RAC) (Use highest code)					M
Project Location: Crane Naval NSA Facility – Crane, Indiana	Risk Assessment Code (RAC) Matrix					
Contract Number: N62472-03-D-0057	Severity	Probability				
Date Prepared: January 15, 2010		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title): Jeff Eads – Health & Safety Manager	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
Reviewed by (Name/Title): Kyle Wiggerly – QA/QC Manager	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “Hazard” with identified safety “Controls” and determine RAC (See above)					
	“Probability” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart	
	“Severity” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk	
				M = Moderate Risk		
				L = Low Risk		
Job Steps	Hazards	Controls				RAC
1. Weather	1. Cold stress	1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up.				L
	2. Thunder/Lighting	1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather. 4. Stop work for 20-minutes until storm passes or from				L

<p>2. Filling the chain saw with oil and gasoline.</p>	<p>1. Spilling gasoline and oil on the ground surface.</p> <p>2. Fire/explosion.</p>	<p>last observed lighting strike.</p> <p>1. Use a proper sized funnel to facilitate filling activities.</p> <p>2. No not fill the chain saw directly on the ground; perform in the bed of the truck or use an impermeable barrier between the saw and the ground.</p> <p>3. Keep spill response materials near-by in the event of a spill.</p> <p>1. Ensure no ignition sources are in the immediate area; no smoking or open flames when performing pre-use inspection.</p> <p>2. Ensure that the chain saw is not hot, allow for a cooling period.</p>	<p>L</p> <p>L</p>
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<p>3. Operating the chain saw to remove small brush.</p>	<ol style="list-style-type: none"> 1. Ensure chain saw is in good operating condition. 2. Flying debris into eyes, head and hands, legs and torso when operating the saw. 3. Kick-back from the chain saw. 4. Slip, trip and fall hazards from operating on uneven topography. 	<ol style="list-style-type: none"> 1. Perform pre-use inspection, including verification of idle speed, functioning chain brake, or anti-kickback device. 1. Wear PPE including safety glasses, safety shoes, hard hat, leg protection, hearing protection, and level D clothing. 1. Ensure all safety devices are in place and operational (pre-use inspection). 2. Wear PPE including safety glasses, safety shoes, hard hat, leg protection, hearing protection, and level D clothing. 3. The operator will hold saw with both hands during all cutting operations. 1. Wear proper foot wear (safety boots) and maintain situational awareness when walking and positioning feet and body when operating the chain saw. 	<p>L</p> <p>M</p> <p>M</p> <p>M</p>

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ul style="list-style-type: none"> • Gasoline powered chain saw • Spill response supplies and equipment • Gasoline • Oil 	<p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Chad McKnight • Rene Zamuido • Kyle Wiggerly <p><u>Training Requirements:</u></p> <p>Competent person in operating a gasoline powered chain saw.</p>	<ul style="list-style-type: none"> • Pre-use inspection.

Table 1

Activity Hazard Analysis (AHA)

Activity/Work Task: Use of an Oxygen/Acetylene Cutting Torch in the Field to Cut Metal Debris as Necessary	Overall Risk Assessment Code (RAC) (Use highest code)	M				
Project Location: Crane Naval NSA Facility – Crane, Indiana	Risk Assessment Code (RAC) Matrix					
Contract Number: N62472-03-D-0057	Severity	Probability				
Date Prepared: January 15, 2010		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title): Jeff Eads – Health & Safety Manager	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
Reviewed by (Name/Title): Kyle Wiggerly – QA/QC Manager	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “ Hazard ” with identified safety “ Controls ” and determine RAC (See above)					
	“ Probability ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart	
	“ Severity ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk	
		M = Moderate Risk				
		L = Low Risk				
Job Steps	Hazards	Controls				RAC
1. Weather	1. Cold stress	1. Monitor for cold-stress 2. Drink warm liquids throughout the day. 3. Layer clothing 4. Provide adequate breaks to warm-up				L
	2. Thunder/Lighting	1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather.				L

<p>2. Prepping the torch for use in the field.</p>	<p>1. Leaking connections, fittings, hoses and gauges. High pressure (2,500-psi) present.</p> <p>2. Fire/explosion.</p>	<p>4. Stop work for 20-minutes until storm passes or from last observed lighting strike.</p> <p>1. Perform a pre-use inspection to ensure all fitting, connections, hoses and gauges are in good shape and not leaking or have the potential to leak.</p> <p>1. Ensure no ignition sources are in the immediate area; no smoking or open flames when performing pre-use inspection.</p> <p>2. Maintain an appropriate fire extinguisher on-site</p>	<p>M</p> <p>M</p>
<p>3. Loading the oxygen/acetylene torch assembly into the bucket of the rubber tire skid steer.</p>	<p>1. Heavy and awkward load with possible ergonomic concerns.</p> <p>1. Maintain the cylinders in an upright position to prevent acetone from damaging regulators and restricting gas flow. .</p>	<p>1. Use at least 2 people to perform this task. Use proper lifting technique. Wear gloves to protect hands and secure a firm footing.</p> <p>1. Adequately secure the cylinders in the bucket in an upright position.</p> <p>2. Ensure all safety devices are in place and operational (pre-use inspection).</p>	<p>M</p> <p>M</p>

Job Steps	Hazards	Controls	RAC
<p>4. Operating the cutting torch in the field to facilitate debris removal</p>	<ol style="list-style-type: none"> 1. Unsecured cylinders 2. Leaking connections, fittings, hoses, regulators. 3. Open valves and pressurized regulators prior to use. 	<ol style="list-style-type: none"> 1. Perform pre-use inspection to ensure both cylinders are adequately secured in an upright position; all connections are tight and hoses are in good condition; ensure all valves are closed and regulators are reading zero. If gauges are not reading zero, purge lines to let gauges zero out. 	<p>M</p> <p>M</p> <p>M</p>
	<ol style="list-style-type: none"> 4. Explosion when lighting the torch 	<ol style="list-style-type: none"> 1. Open oxygen cylinder valves very slowly; determine proper pressure setting and set gauge, purge lines individually; open acetylene valve 1/4 turn and light torch; add oxygen to flame until blue cone creates a neutral flame. 	<p>M</p>
	<ol style="list-style-type: none"> 5. Potential eye injury due to intense cutting flame and burns to exposed body parts (hands and arms) when using torch. 	<ol style="list-style-type: none"> 1. All work activity will be conducted in level D; wear proper PPE including proper eyewear (shade 3) and gloves when operating the torch. 	<p>M</p>
	<ol style="list-style-type: none"> 6. Fire 	<ol style="list-style-type: none"> 1. Obtain a Hot Works Permit and have available a fire extinguisher when operating the torch. 2. Remove leaves and litter a minimum of a 6-foot radius from cutting zone. 3. Maintain a Fire Watch during cutting activities. 	<p>M</p> <p>M</p>

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ul style="list-style-type: none"> • Oxygen/Acetylene Cutting Torch • Rubber Track Skid-Steer 	<p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Chad McKnight • Rene Zamudio • Kyle Wiggerly <p><u>Training Requirements:</u></p> <p>Competent person in operating an oxygen/acetylene cutting torch</p>	<ul style="list-style-type: none"> • Pre-use inspection of both the cutting torch and rubber track skid-steer.

Table 1

Activity Hazard Analysis (AHA)

Activity/Work Task: Walking the Project Site and Debris Removal as Necessary	Overall Risk Assessment Code (RAC) (Use highest code)				L	
Project Location: Crane Naval NSA Facility – Crane, Indiana	Risk Assessment Code (RAC) Matrix					
Contract Number: N62472-03-D-0057	Severity	Probability				
Date Prepared: January 15, 2010		Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title): Jeff Eads – Health & Safety Manager	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
Reviewed by (Name/Title): Kyle Wiggerly – QA/QC Manager	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “ Hazard ” with identified safety “ Controls ” and determine RAC (See above)					
	“ Probability ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.			RAC Chart		
	“ Severity ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible			E = Extremely High Risk		
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.			H = High Risk		
			M = Moderate Risk			
			L = Low Risk			
Job Steps	Hazards	Controls			RAC	
1. Weather	1. Cold stress	1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up.			L	
	2. Thunder/Lighting	1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop.			L	

<p>2. Walking the project site.</p> <p>3. Picking up debris as needed</p>	<p>1. Slip, trips and falls.</p> <p>1. Slips, trips and falls</p> <p>2. Cuts, lacerations and punctures</p>	<p>3. Seek safer shelter according to site safety plan for inclement weather.</p> <p>4. Stop work for 20-minutes until storm passes or from last observed lightning strike.</p> <p>1. Wear a good work boot and maintain situational awareness at all times to prevent slips, trips and falls.</p> <p>1. Wear a good work boot and watch where you step to avoid stepping on objects that have the potential to puncture your boot.</p> <p>2. Wear cut resistant gloves to protect your hands.</p>	<p>L</p> <p>L</p> <p>L</p>
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Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ul style="list-style-type: none"> • Cut resistant gloves • Work boot • Debris collection container 	<p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Angelo Dattilo • Kyle Wiggerly • Chad McKnight • Rene Zamudio • Jeff Eads <p><u>Training Requirements:</u></p> <p>None</p>	<ul style="list-style-type: none"> • Pre-use inspection of gloves and boots

Activity Hazard Analysis (AHA)

Activity/Work Task: Operating Rubber Track Skid-Steer to Excavate and Load Soil and Debris	Overall Risk Assessment Code (RAC) (Use highest code)	L				
Project Location: Crane Naval NSA Facility – Crane, Indiana	Risk Assessment Code (RAC) Matrix					
Contract Number: N62472-03-D-0057	Severity	Probability				
Date Prepared: January 15, 2010		Frequent Likely Occasional Seldom Unlikely				
Prepared by (Name/Title): Jeff Eads – Health & Safety Manager	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
Reviewed by (Name/Title): Kyle Wiggerly – QA/QC Manager	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “Hazard” with identified safety “Controls” and determine RAC (See above)					
	“Probability” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.				RAC Chart	
	“Severity” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk	
		M = Moderate Risk				
		L = Low Risk				
Job Steps	Hazards	Controls				RAC
1. Weather	1. Cold stress	<ol style="list-style-type: none"> 1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up. 				L
	2. Thunder/Lighting	<ol style="list-style-type: none"> 1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather. 4. Stop work for 20-minutes until storm passes or from 				L

<p>2. Operating skid-steer equipment for loading lead impacted soil into 1-yd³ Gaylord boxes.</p>	<p>3. Equipment is in good working order.</p> <p>4. Mounting and dismounting skid-steer.</p> <p>1. Moving machinery.</p> <p>2. Suspended loads.</p> <p>3. Potential exposure to lead dust</p> <p>4. Fire.</p> <p>5. Equipment is in good working order.</p>	<p>last observed lighting strike.</p> <p>1. Perform pre-use inspection of equipment to ensure good working order.</p> <p>1. Maintain 3-points of contact and ensure good footing when mounting and dismounting equipment</p> <p>1. Personal on-foot must use extra caution and stay clear of moving equipment.</p> <p>1. On-ground personnel and/or vehicles are prohibited to approach opposite side of Gaylord being loaded to avoid being struck by falling debris/soil that could potentially fall over the side.</p> <p>1. All work will be conducted in level D protection at a minimum. Air monitoring will be performed to determine the need for a respirator. Operator will load from an upwind position when possible and an air-purifying respirator will be readily available if warranted. The action limit for the operator is 0.4 mg/m³; engineering techniques will be implemented if action limit is exceeded.</p> <p>1. The skid-steer will be equipped with a fire extinguisher.</p> <p>1. Perform pre-use inspection of equipment to ensure good working order.</p>	<p>L</p> <p>L</p> <p>L</p> <p>L</p> <p>L</p> <p>L</p>
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<p>3. Operating skid-steer equipment to move loaded Gaylord boxes to the staging area for transportation and disposal.</p>	<p>6. Mounting and dismounting skid-steer.</p> <p>1. Attaching fork attachment to skid-steer.</p> <p>2. Moving machinery.</p> <p>3. Suspended loads</p> <p>4. Fire</p>	<p>1. Maintain 3-points of contact and ensure good footing when mounting and dismounting equipment.</p> <p>1. Use 2 people and proper lifting technique to reduce the potential for back strain.</p> <p>1. Personal on-foot must use extra caution and stay clear of moving equipment.</p> <p>1. On-ground personal are not to walk under the elevated forks on the skid-steer.</p> <p>1. The skid-steer will be equipped with a fire extinguisher.</p>	<p>L</p> <p>L</p> <p>L</p> <p>L</p> <p>L</p> <p>L</p>
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Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ul style="list-style-type: none"> • Rubber Track Skid-Steer • Fork Lift Attachment • 1-yd³ Gaylord boxes • Air Monitoring Equipment 	<p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none"> • Chad McKnight • Rene Zamuido • Kyle Wiggerly <p><u>Training Requirements:</u></p> <p>Competent person in operating the skid-steer and air monitor.</p>	<ul style="list-style-type: none"> • Pre-use inspection of all machinery and equipment. • Calibration as needed for the air monitor.

Activity Hazard Analysis (AHA)

Activity/Work Task: Surveying of the Lead Impacted Soil Excavation Area	Overall Risk Assessment Code (RAC) (Use highest code)	L	
Project Location: Crane Naval NSA Facility – Crane, Indiana	Risk Assessment Code (RAC) Matrix		
Contract Number: N6247-03-D-0057	Severity	Probability	
Date Prepared: January 15, 2010		Frequent Likely Occasional Seldom Unlikely	
Prepared by (Name/Title): Jeff Eads – Health & Safety Manager	Catastrophic	E E H H M	
Reviewed by (Name/Title): Kyle Wiggerly – QA/QC Manager	Critical	E H H M L	
	Marginal	H M M L L	
	Negligible	M L L L L	
Notes: (Field Notes, Review Comments, etc.)	Step 1: Review each “ Hazard ” with identified safety “ Controls ” and determine RAC (See above)		
	“ Probability ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.	RAC Chart	
	“ Severity ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible	E = Extremely High Risk	
	Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.	H = High Risk M = Moderate Risk L = Low Risk	
Job Steps	Hazards	Controls	RAC
1. Weather	1. Cold stress	<ol style="list-style-type: none"> 1. Monitor for cold-stress. 2. Drink warm liquids throughout the day. 3. Layer clothing. 4. Provide adequate breaks to warm-up. 	L
	2. Thunder/Lighting	<ol style="list-style-type: none"> 1. Any visual or audible signs of lightning or thunder, stop work. 2. Tornado warnings in the general area will require work to stop. 3. Seek safer shelter according to site safety plan for inclement weather. 4. Stop work for 20-minutes until storm passes or from last observed lighting strike. 	L

2. Surveying Activities.

1. Slip, trips and falls.

1. Wear a good work boot and maintain situational awareness at all times to prevent fall and trips.

L

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
<ul style="list-style-type: none">• Surveying Equipment	<p><u>Competent/Qualified Personnel:</u></p> <ul style="list-style-type: none">• Contracted surveyor <p><u>Training Requirements:</u></p> <p>License Surveyor.</p>	<ul style="list-style-type: none">• Equipment pre-use inspection

This APP and the site-specific HASP must be used together and be available for site personnel during the duration of this work.

References

United States Army Corps of Engineers (USACE) 2008 Engineer Manual (EM) 385-1-1, Safety and Health Requirements Manual. It is available online at:

<http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/entire.pdf>

Revision 0
March 2010

APPENDIX TO ACCIDENT PREVENTION PLAN

Appendix 1

Employee training/qualifications are to be collected and attached by PM/FOL prior to the start of site activities.

(40-Hour HAZWOPER Certificates; 8-Hour HAZWOPER Refresher Certificates; First Aid/CPR Certificates; Employee Resumes as required)