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August 28, 2000

Ms. Bozier H. Demaree
Contracting Officer
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

Subject: Health and Safety Plan Amendment for Geophysical Survey Work at IRP Site 1 (EOD Range) at MCAS El Toro Contract N68711-93-D-1459, Delivery Order 065, Removal and Remedial Actions at IRP Sites, MCAS El Toro, California

Dear Ms. Hornecker:

The attached document is Health and Safety Plan (HSP) Amendment No. 6 for Delivery Order 065. This amendment provides the background health and safety details for the geophysical survey at IRP Site 1 that is currently anticipated to occur in the next few days. The amendment is necessary because the existing HSP does not address this type of work or the special considerations involved at the Explosive Ordnance Disposal (EOD) Range.

For consistency, OHM has coordinated our documents with those of Earth Tech, because they performed similar activities at the site in the last year.

If you have any questions or need additional information please call or e-mail me.

Sincerely,

William Sedlak
Sr. Project Manager

cc: Lucretria Holloway, SWDIV, COTR (1C/1E)
Content Arnold, SWDIV (1C/1E)
OHM PMO File (1C/1E)
Janet Corbett, SWDIV (1C/1E)
Project File, Correspondence B.01



**OHM Remediation
Services Corp.**
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OHM TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT N68711-93-D-1459

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Naval Facilities Engineering Command
Southwest Division
Bozier H. Demaree, Code 02R1.BD
1220 Pacific Highway
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Date: 30-Aug-00

D.O.: 65

Location: MCAS EL TORO

Edwin G. Bond

FROM: _____
Stewart Bornhoft, Program Manager

Edwin G. Bond, Contracts Manager

DESCRIPTION OF ENCLOSURE: *Health & Safety Amendment for Geophysical Survey Work at IPR Site 1 (EOD Range), Removal and Remedial Actions at IPR Sites, dated August 28, 2000*

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08 11 02 00 00

Date/Time Received: _____ /

SITE SPECIFIC HEALTH AND SAFETY PLAN Amendment 6

GEOPHYSICAL SURVEY AT INSTALLATION RESTORATION PROGRAM SITE 1 Marine Corps Air Station El Toro, Santa Ana, California

**SWDIV Contract No. N68711-93-D-1459, Delivery Order No. 0065
OHM Project No. 918708
Document Control No. SW8999
Revision No. 0
August 28, 2000**



**OHM Remediation
Services Corp.**

**3347 Michelson Drive, Suite 200
Irvine, California 92612-1692**

SITE SAFETY PLAN CHANGE APPROVAL FORM

Amendment No. 6

Project Name: DO:65 MCAS EL TAO Project Number: 918609

Section of SHSP: ALL Page Number: ALL Date of Change: 08/00

Change to read SEE ATTACHED SHSP FOR
SITE 1 GEOPHYSICAL SURVEY, DATED 8/28/00

Reason for change NOT PREVIOUSLY COVERED

Approvals:

Wa Salah (PM)

Site Superintendent

[Signature]

Site Safety Officer

Kevin Haddock

Project Health & Safety Manager

for
Fred Makar

1.0 SITE SPECIFIC HEALTH AND SAFETY PLAN

OHM Remediation Services Corp. (OHM), a division of The IT Group Inc., has developed this Site Health and Safety Plan (SHSP) which establishes the policies and procedures that will be followed during field activities involving geophysical surveying at IRP Site 1, MCAS El Toro, Santa Ana, California. This work will be performed under Southwest Division Naval Facilities Command (SWDIV) Contract No. N68711-93-D-1459, Delivery Order No. 0065.

This SHSP policies and procedures protect workers, subcontractors, and the public from potential hazards associated with activities at this site. OHM considers safety the highest priority during work at a site containing potentially hazardous materials and Unexploded Ordnance (UXO) and has established a policy of minimizing exposure, which must be upheld on all projects. All project activities will be conducted in a manner that minimizes and the probability of injury, accident or incident occurrence. *All OHM employees, subcontractors, and visitors are required to read and sign the SHSP prior to site entry.*

Although the SHSP focuses on the specific work activities planned for this site, it must remain flexible because of the nature of this work. Conditions may change and unforeseen situations may arise that require deviation from the original plan. This flexibility allows modification by the OHM project Supervisor and the Site Health and Safety Official to take into account changing site conditions such as new data on chemical hazards, weather, and deviations to scope of work.

Changes to the SHSP must be approved by the Health and Safety Officer (HSO), Health and Safety Manager (HSM), and Project Manager (PM) or Project Supervisor (PS) and recorded on the Safety Plan Change Approval Form. All Changes must be approved before implementation. The Navy Technical Representative (NTR) may review and acknowledge the change, but is not required to sign the form. The Program HSM will send a copy of the approved changes to the Navy Technical Remedial Manager.

1.2 OBJECTIVES

The objective of the field project is to perform a geophysical survey of a portion of Site 1, outside of the area normally used by the Marine Corps. for the training of personnel in practices concerning UXO. The training was conducted by the Explosive Ordnance Disposal unit at the Station. The intent of this work is to extend the geophysical clearance area from that performed by Earth Tech, to encompass the remaining area in Site 1. The area in question is a portion of a proposed property transfer between the Navy and the Federal Bureau of Investigation. It is presumed that since this work is outside of the area used by the EOD personnel that there will be a minimal potential for encounters with UXO. No intrusive activities will be performed while conducting the geophysical survey.

2.0 KEY PERSONNEL AND MANAGEMENT

OHM maintains a policy of providing its employees, subcontractors, and authorized visitors with information and procedures in order to protect them and the adjacent community from any adverse effects that might result from work at a job site involving potentially hazardous substances and/or UXO. All personnel involved with this project will follow the health and safety procedures set forth in this SHSP. Visitors will not be given entry unless they read and agree to comply with this plan. The SHSP acknowledgement will be signed by all that actively participate at this project.

2.1 PROJECT MANAGER

The OHM Project Manager, Mr. William Sedlak, communicates directly with the designated NTR and will serve as the primary point of contact. His responsibilities include project scheduling, cost updating, and overall project direction and overseeing site safety. In addition, Mr. Sedlak is responsible for determining the extent and level of input required for technical issues that arise during the tenure of the project.

2.2 PROJECT HEALTH AND SAFETY MANAGER

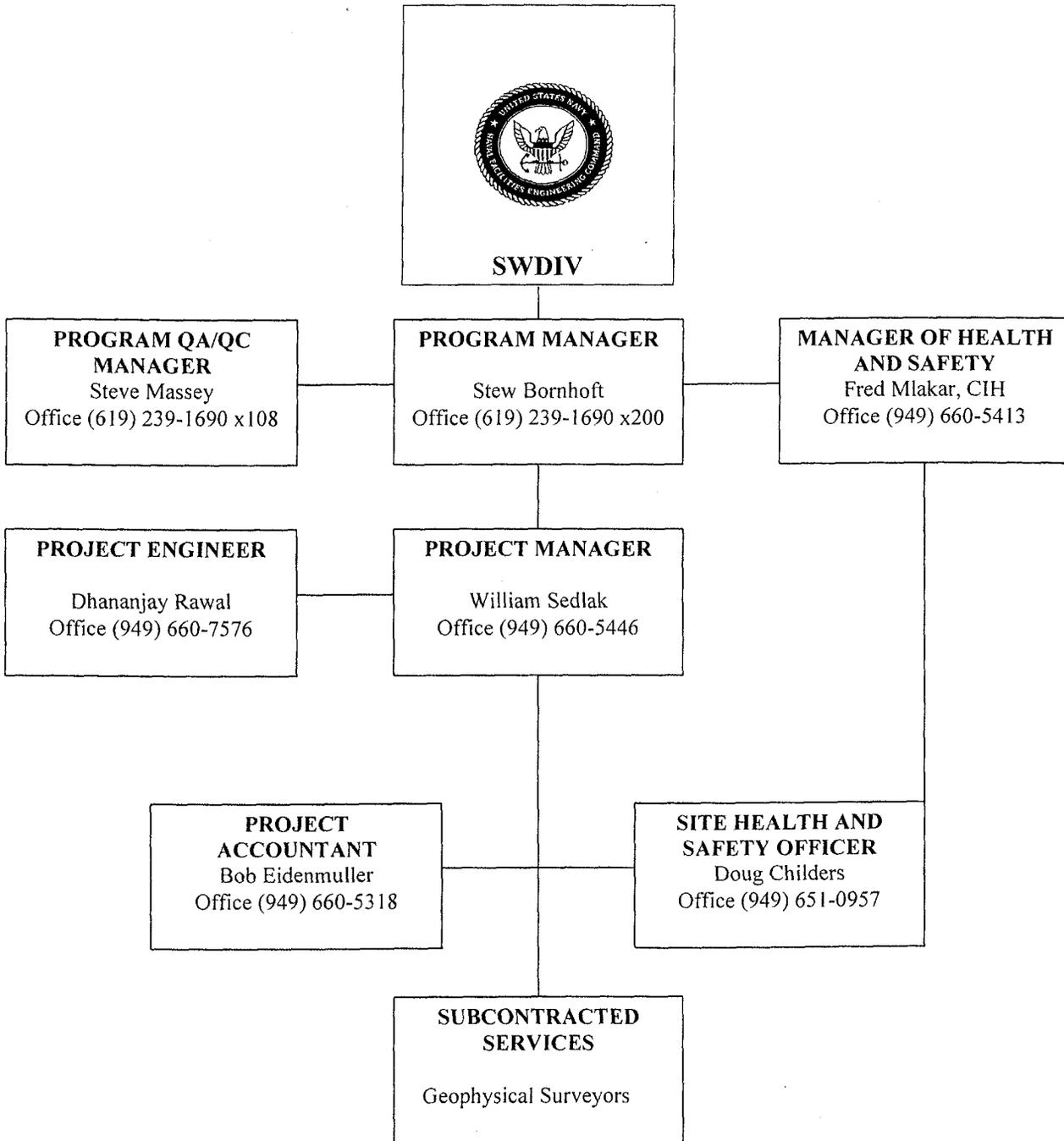
The Project HSM for the site is Mr. Fred Mlakar, CIH, the Manager of Health and Safety for SWDIV projects. Mr. Mlakar will be responsible for the review and approval of the SHSP, and will supervise and direct the activities of the SHO. Mr. Mlakar has the authority to stop unsafe operations, remove unqualified personnel from the work area, and approve changes to the SHSP.

Mr. Mlakar is responsible for all aspects of the SHSP from development to implementation. His duties include advising the SHO on all related Health and Safety aspects, reviewing any site-specific plans for compliance and completeness, and establishing and monitoring all related Health and Safety Procedures through site safety audits.

2.3 SITE HEALTH AND SAFETY OFFICER

The HSO responsible for enforcing the safety program and procedures at the project site is Mr. Doug Childers. Mr. Childers is responsible for conducting daily safety meetings and will interface as required with other site representatives. Mr. Childers duties include ensuring personnel are fit for duty, coordinating emergency medical care, conducting a daily site safety inspection, and inspecting health and safety equipment. In addition, Mr. Childers is responsible for reviewing daily air monitoring results, providing site orientation safety training for all personnel actively involved in site work, and other site safety documentation.

**FIGURE 1
PROJECT ORGANIZATION CHART
MCAS EL TORO**



3.0 SITE EMERGENCY AND HOSPITAL INFORMATION

TABLE 1 EMERGENCY NOTIFICATION LISTING

Hospital:	Irvine Medical Center 16200 Sand Canyon Ave. Irvine, CA 92618 (949)753-2000
Fire/Police/Ambulance/Poison Control Center:	911
OHM Contacts:	William Sedlak, Project Manager (949)660-5446 (Office) Fred Mlakar, Health and Safety Manager (949)451-7658 (Pager) Doug Childers, Health and Safety Officer (949)279-5320 (Cell)
EPA ERT Emergency:	(201)321-6660
Center for Disease Control:	(404)329-2888 (404)452-4100
CHEMTREC:	(800)424-9300
National Response Center:	(800)424-8802
Pesticide Information Center:	(800)845-7633
RCRA Hotline:	(800)424-9346
TSCA Hotline:	(202)554-1404

4.0 PHYSICAL HAZARDS

There are numerous physical hazards associated with this project which, if not identified and addressed, could present accidents and personal injury to the work force as well as operational problems. In order to minimize physical hazards, OHM has developed standard safety protocols, which will be followed at all times. Failure to follow safety protocol or continued negligence of these policies will result in expulsion of a crewmember from the site as well as possible termination of employment.

All OHM employees and subcontractors are familiar with the field activities that will be conducted at the site. They are trained to work safely under various field conditions. In addition, the Supervisor will observe the general work practices of each crewmember and enforce safe procedures to minimize physical hazards. In general, hard hats, safety glasses and safety boots are required for the fieldwork.

4.1.1 TRIPPING, SLIPPING, AND FALLING HAZARDS

OHM personnel and subcontractors will be reminded daily to maintain sure footing on all surfaces. In order to minimize tripping hazards caused by debris, job supplies, and equipment, material will be removed daily from the work areas and stockpiled in their respective storage areas. This effort will be enforced by the HSO throughout the day. Proper footwear and work procedures will be implemented to minimize tripping hazards from the job site.

Due to the undeveloped nature of the site, there may be hazards that are not visible due to weeds or vegetation. Care must be exercised when walking through these areas to observe the ground and possible hazards.

4.1.2 HEAD AND BACK INJURIES

No overhead obstructions are located in the survey area. As a result, hard hats may not be required, at the discretion of the HSO. However, due to the lack of shade and heat concerns, head protection of some sort is required for worker protection. As a minimum, hats and safety glasses will be worn prior to performing any site activities. Personnel are instructed in proper lifting techniques and will be reminded not to lift heavy items without assistance at the daily safety meeting.

4.2 ENVIRONMENTAL HAZARDS

Environmental hazards associated with this site will be discussed at the initial orientation meeting. Personnel will be apprised of symptoms of exposure to certain biological hazards and heat stress.

4.2.1 WEATHER AND HEAT STRESS

With the possible combination of ambient factors such as high air temperature, high relative humidity, low air movement, high radiant heat, and protective clothing, the potential for heat related illness is a concern. The potential exists for:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

An action level for heat stress has been established. At 78° Wet Bulb Globe Temperature (WBGT), the PS or HSO will begin heat stress control measures.

Heat stroke, heat cramps, and heat exhaustion are covered in detail during the 40 Hour HAZWOPER training. In addition, this information is re-addressed in the 8 hour refreshed as well as discussed during the daily safety meeting. Workers are encouraged to increase consumption of water and electrolyte-containing beverages such as Gatorade during warm weather. Water and electrolyte-containing beverages will be provided on site and will be available for consumption during work breaks.

The project site is located in an undeveloped area of the Station. The site is located within an area of rolling hills, which may reduce or deflect air movement. Due to the time of year that this work is planned for, workers must be careful to watch for signs of heat related injuries in themselves and co-workers.

At a minimum, workers will break every two hours for 10 to 15 minute rest periods. In addition, workers are encourage to take rests whenever they feel any adverse effects, especially those effects that may be heat-related.

4.2.3 BIOLOGICAL HAZARDS

The following biological hazards may be encountered on site:

- Animal bites and insect stings can caused localized swelling, itching, and minor pain that can be handled by first aid treatment. In sensitized individuals, effects can be more serious such as anaphylactic shock which can lead to severe reactions in the circulatory, respiratory, and central nervous system, and in come cases, even death. The HSO will identify personnel with a know reaction to bites and stings at the pre-job safety orientation meeting. No attempts should be made to capture any wild or semi-wild animals such as rats due to the possibility of a bite or parasitic infestation.
- Due to the inactivity at the Station over the last year, the wild animals may have grown unaccustomed to human activities. Wild animals such as coyotes, predatory birds and snakes may be encountered.
- The open terrain and vegetation may provide suitable locations for bee, wasp, or hornet nests. Workers must pay careful detail to any signs of possible nests, such as large numbers of insects in an area, buzzing sounds, etc. Areas where any unusual activity is observed shall be avoided and the HSO notified immediately.
- Animal or bird droppings often contain mold, fungus, or bacteria, which represent a significant respiratory hazard including lung diseases and allergies. Personnel will be instructed not to touch visual droppings, and to wear gloves and Tyvek at a minimum when going into limited access areas such as crawl spaces and high ceilings that may have become refuges or nesting areas.
- The hanta virus is sometimes transmitted by rodents found in the Southwestern United States, and causes respiratory distress, sometimes with fatal consequences. Transmission of the hanta virus occurs with exposure to rodent droppings. Good hygiene practices such as washing hands and face prior to eating and drinking will help to minimize the potential for exposure to the hanta virus. While work in progress, use of HEPA cartridges and work practices, which minimize generation of dust and aerosols, will help protect employees.

4.3 ACCIDENT PREVENTION

This SHSP has been developed with accident prevention as the primary goal. Details are discussed throughout this SHSP. This section will outline the Accident Prevention Plan put in place for this project.

4.3.1 ADMINISTRATIVE RESPONSIBILITY

The Project Manager is ultimately responsible for the safety and health of site personnel. The PM is to provide the materials and maintenance of equipment necessary to enhance and maintain safe site and work conditions.

The Project Supervisor has the responsibility and the authority to control the day to day remediation activities in the field. The PS reports to the Project Manager. His responsibility is to watch employees for signs of heat stress, excessive fatigue, and obvious outward signs of chemical exposure. In addition, he is to ensure that equipment brought to the site is in proper working condition and inspected regularly.

The HSO reports to the Project Manager and the Health and Safety Manager and is responsible to point out unsafe conditions that may pose a hazard to personnel or the public. The HSO is required to conduct regular safety inspection. The HSO, PS, and the Project Manager will perform accident investigations.

4.3.2 SITE SPECIFIC TRAINING

All field employees have received at least 40 hours of OSHA Hazardous Waste Operations and Emergency Response training (HAZWOPER). Prior to working on site, all site personnel will undergo a safety and health orientation where the SHSP and site conditions are discussed. Prior to each shift, a daily safety meeting will be held discussing the previous day's and the current day's health and safety issues.

4.3.3 SUBCONTRACTORS

All subcontractors are subject to the same training requirements as other field personnel. Subcontractors will be required to attend a pre-job safety orientation meeting, as well as attending a daily meeting to discuss operations and safety issues.

4.3.4 HOUSEKEEPING

The project site will be kept in a neat and orderly fashion to prevent common injuries due to slips, trips, and falls, accumulation of trash to keep insects away, and to maintain a professional work site. Personnel shall not leave a work area in a disorderly condition. The Site Foreman and Project Supervisor are responsible for maintaining continued job cleanup and safety access and egress.

4.3.5 ACCIDENT INVESTIGATIONS

All injuries or occupational illnesses will be investigated and an Accident/Injury Report form will be completed.

In the case of an injury to an employee that requires medical treatment, the following steps will be followed:

1. Procure medical treatment for employee as described in Section 9.0 of this SHSP.
2. The HSO, Project Supervisor, and Project Manager will investigate the incident and fill out the appropriate Accident/Injury Report Forms. These forms will be faxed to the Health and Safety Manager within 24 hours of incident occurrence.
3. The Health and Safety Manager will complete the Employer's Report of Injury and send it to the Worker's Compensation insurance company within 48 hours of an injury or within 24 hours of a lost time injury or death. A claim for worker's compensation benefits will also be submitted.
4. Notify the NTR within 24 hours of the injury.
5. OSHA 200 Log will be updated if the injury is recordable under 29 CFR 1904.

In the case of a fatal injury or where three or more persons are admitted to the hospital for an overnight stay, OSHA and other appropriate agencies will be notified and an in depth accident investigation will be conducted in addition to the steps identified above.

Post-Accident Testing. Alcohol and drug testing is required of employees immediately after an accident as detailed in I.T. Health and Safety Manual Procedure No. HS101. Reportable accidents, which require testing, include:

1. Death of any person
2. Bodily harm to any person resulting in one or more of the following:
 - Loss of consciousness.
 - Necessity to carry the person from the scene.
 - Necessity for medical treatment (beyond first aid).
 - Disability which prevents the discharge of normal duties or the pursuit of normal activities beyond the day of accident.
3. Explosion or fire not intentionally set.
4. Estimated property damage to the property of the company, property of others, or both, exceeding \$1000.00.
5. Any event that is significantly serious in the judgment of the company to require testing.

5.0 WORK ZONE AND ACCESS CONTROLS

The HSO and the Project Supervisor shall instruct all workers and visitors on the limits of the site, and restricted zones. No one shall be allowed to enter the restricted zone without the required protective equipment for that area. The Supervisor shall ensure compliance with all restricted area entry and exit procedures.

Visitors will be required to check in upon arrival at the site office. Only authorized visitors will be allowed access to the restricted zone. All visitors and subcontractors with access to the work zone must submit proof of 40 hour HAZWOPER training, current HAZWOPER refresher, and medical certification to the HSO. All visitors and subcontractors will be required to provide and wear the necessary protective equipment for use during their stay at the job site. Additionally, they will be required to sign the attached safety plan acknowledgement sheet to certify that they have read, understand, and will comply with this plan.

6.0 PROTECTIVE EQUIPMENT

This section describes the personal protective equipment and respiratory protection required for each type of task for this project. All personnel must wear appropriate protective equipment when activities involve exposure to hazards, which can not be adequately or feasibly controlled by engineering or administrative controls. Respiratory protection, skin, hand and foot protection are required when activities are known or suspected to result in chemical hazards such as atmospheric contamination in excess of action levels in the form of dusts, mists, fumes, vapors, gases, when direct contact with them may be a health hazard. The ensuing list briefly describes the EPA Level categories:

- **LEVEL A:** Used when the greatest level of skin, eye, and respiratory protection is needed and consists of a totally encapsulated suit with supplied breathing air.
- **LEVEL B:** Used when the highest level of respiratory protection is needed but a lesser level (than Level A encapsulated suit) of skin protection is required.
- **LEVEL C:** Used when criteria for using air-purifying respirators are met and a lesser level of skin protection is required.
- **LEVEL D:** Used only as a work uniform and in an area without respiratory hazards.

No chemicals are anticipated to be encountered during this activity, therefore Level D protection shall be utilized. Level D consists of Safety Boots, Safety Glasses, and Hard Hat.

7.0 PERSONAL HYGIENE

Before any eating, smoking, or drinking, personnel will wash hands, arms, neck, and face thoroughly. Washing facilities with soap will be available in the support zone.

8.0 EMERGENCY RESPONSE

Prior to field activities, the HSO will plan an emergency egress route and discuss them with all personnel who will be conducting the fieldwork. Initial planning includes establishing emergency warning signals, and evacuation routes in case of an emergency. Emergency egress will be discussed at the pre-job site safety orientation meeting.

9.0 EMERGENCY SERVICES

A system shall exist for rapid and clear distress communication. The HSO will verify that all telephone and radio systems operate correctly, that all personnel understand hand signals, and that emergency telephone numbers are accurate. All personnel shall be provided concise and clear directions and accessible transportation to local emergency services. All personnel will be trained in the use of portable fire extinguishers. The following emergency equipment will be brought onto the site or will be stationed near the work area:

- Fire extinguisher, minimum of one 20 lb. Dry chemical type ABC at the work site.
- Industrial first aid kit at the work site or work office.
- Portable eyewash, capable of supplying 15 minutes of water, where work is to take place.
- Air horn.

9.1 SITE COMMUNICATIONS

Personnel shall maintain verbal communication with each other. The following communication systems are available for use by the field crew:

- Cellular telephone and land telephone for emergency purposes.
- Compressed air horn (signals emergency evacuation only).
- Hand signals, as specified in EM385-1-1.

9.2 MEDICAL EMERGENCY PROCEDURES

The following procedures should be observed if an accident occurs:

1. Minor injury
 - Contact foreman or "buddy".
 - Have qualified first aid personnel treat injury.
 - Record injury and include name of injured person, nature of injury, and treatment given
2. Serious injury
 - Survey scene and evaluate whether the area is safe for entry.
 - Remove the exposed or injured person (s) from immediate danger.
 - Render first aid if necessary. Decontaminate affected personnel after critical first aid is given.
 - Obtain paramedic services or ambulance transport to local hospital. This procedure shall be followed even if there is no visible injury.
 1. Call 911.
 2. Identify location, request medical assistance, provide name and telephone number
 3. Request assistance from emergency medical service and/or additional assistance.

- Other personnel in the work area shall be evacuated to a safe distance until the project Supervisor determines that it is safe for work to resume. If there is any doubt regarding the condition of the area, work shall not commence until all hazard control issues are resolved
 - Notify ROICC of incident and fill out accident reporting forms and associated documents.
3. Fatal injury, if a fatal injury occurs, the following additional steps will be followed:
- Immediately notify supervisor.
 - Notify HSM and Corporate Health and Safety Dept. who will initiate contact with OSHA and other appropriate agencies.
 - Notify NTR/ROICC.
 - All work activities on the project must be stopped on the project for 24 hours.
 - Assist OSHA as directed.

Any personnel requiring emergency medical attention shall be evacuated immediately from the exclusion and contamination-reduction zones. Personnel shall not enter the area to attempt a rescue if their own lives would be threatened. The decision to decontaminate a victim prior to evacuation is based on the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life saving first aid. For others, decontamination may aggravate the injury or delay life saving treatment. If decontamination does not interfere with essential treatment, it should be performed.

If decontamination can be performed, the following steps apply:

1. Wash victim's external clothing and cut it away.
2. Wrap victim in clean blanket or towel if necessary.

If decontamination can not be performed, the following steps apply:

1. Wrap the victim in blankets or plastic to reduce contamination of other personnel.
2. Alert emergency and off-site personnel to potential contamination; instruct them about specific decontamination procedures.
3. An escort who is familiar with the incident will be required to escort victim.

FIRST AID

Only qualified personnel shall provide First Aid and stabilize an individual needing assistance. Life support techniques such as CPR and treatment of life threatening problems such as airway obstruction and shock will be given top priority. At least one person certified in First Aid techniques and CPR will be on site at all times. The HSO will be current in First Aid and CPR. First Aid will be administered in accordance with the universal precautions required by the OSHA Bloodborne Pathogens standard, and as outlined in I.T. Health and Safety Manual Procedure No. HS512. Professional medical assistance shall be obtained at the earliest possible opportunity.

To provide first-line assistance to field personnel in the case of sickness or injury, the following items will be immediately available:

- First Aid kit.
- Portable emergency eye wash station.
- Supply of clean water.
- Blanket or plastic for wrapping of contaminated victims.

The location of these items will be established prior to commencement of work and will be discussed in detail at the site orientation meeting.

9.3 EARTHQUAKE RESPONSE

In the event of an earthquake during site activities, the following steps should be taken:

- Stop work, and remain calm.
- If indoors, stay inside away from windows and take cover under heavy furniture or inside walls if possible.
- Do not use or do anything that might be a source of ignition.
- If outdoors, stay away from power lines, power poles, and windows.
- If in a vehicle, stay in the vehicle until the earthquake is over.

After the earthquake is over:

- Prepare for aftershocks. Stay out of severely damaged buildings.
- Personnel should meet for a head count at a location designated by the Supervisor and/or Health and Safety Officer.
- Check for injuries, do not move seriously injured personnel unless remaining where they are would create danger of further injury.
- Check vehicles, equipment, and buildings for obvious damage.
- Check utility lines for damage. Turn off power, water and gas until a utility official has inspected the building and determined it is safe.
- If driving, watch for hazards created by the earthquake, i.e.: undermined roads, weak bridges or overpasses, etc.

9.4 FIRE OR EXPLOSION RESPONSE

In the event of a fire or explosion the Fire Department will be summoned immediately, and a head count and evacuation procedures taking place concurrently. Upon their arrival, the Project Supervisor, Project Manager, or designated alternate will advise the fire department of the location, nature, and identification of the fire and any hazardous materials on site.

Upon arrival of the Project Supervisor or HSO, and if it can be done safely, site personnel may do the following:

- Use fire extinguishers available on-site to control or extinguish a small localized fire.
- Remove or isolate flammable or other hazardous materials that may contribute to the fire.
- Begin containment and recovery of the spilled material.

9.5 SITE EVACUATION PLAN

Portable air horns will be used to alert all site personnel of an evacuation of the site; the alarm procedures listed below will be implemented. The primary and secondary meeting area for the site will be, Primary: Exit gate from EOD Range, Secondary: Main Gate (at wet crossing) on Magazine Road. The Project Supervisor will complete a head count at the meeting area and further directions or response discussions coordinated at that point.

In the case of large fire, explosion, or toxic vapor release, a site evacuation shall be ordered and the following steps taken:

- Sound the applicable alarm (one long horn blast) and notify ROICC.

- Evaluate the immediate situation and downwind direction. All personnel will evacuate in the upwind direction.
- Personnel will exit through the CRZ and take off or scrub outer boots (as a minimum) and remove their outer suit prior to leaving the CRZ.
- All personnel will assemble in an upwind area when the situation permits, a head count will be taken.
- Determine the extent of the problem. Dispatch an OHM/IT response team in protective clothing and SCBA to site to evacuate any missing personnel or to correct the problem only if there is no risk to the health and safety of the team.
- The above procedures will apply to all OHM/IT subcontractors and will be discussed with them prior to commencement of work.

10.0 SITE SPECIFIC HAZARDS ASSOCIATED WITH UXO'S

The following section addresses hazards associated with the Geophysical Survey that will be conducted.

Basic safety precautions should always be taken if a suspected UXO is discovered. These precautions include not touching or moving any suspected ordnance. If discovered all personnel shall evacuate an area outside of the 300 meter safety zone. All radio transmissions shall cease within 150 feet of any suspected UXO. Personnel who locate a suspected UXO shall immediately notify the PM and HSO, who will then determine what further action may be necessary. Prior to notification, and without advancing on suspected UXO, the finder should note the location, approximate size, shape, color, and any other distinguishing features such as nomenclature or writing, fins, etc. Prior to leaving the vicinity of the object, flagging or paint should be used to mark the general area to aid in locating the object again.

There are many types of geophysical instrumentation, which emit or produce electromagnetic radiation (EMR), which can activate electronic fuses on UXO causing accidental detonation. Therefore, the use of Ground Penetrating Radar (GPR) is prohibited in areas where UXO are suspected. Additionally the use of Time-Domain Electromagnetic (TDEM) and Frequency Domain Electromagnetic (FDEM) devices are prohibited for identified trash piles and similar structures where the presence of UXO is suspected. An analysis of the safe separation distance (SSD) required for the EMR emissions associated with each allowable device will be accomplished using the Hazards of Electromagnetic Radiation to Ordnance (HERO) methodology found below. The Geophysical device, to include any associated electronics, data processor and battery pack, will not be placed on the ground during operation. The minimum above ground height at which any device can be operated is the device's calculated SSD, or if no SSD is available 3 feet.

The following is to be used in determining the SSD, based on the emission frequency of the EMR:

D = SSD (in feet)

F = EMR frequency (in megahertz [MHz])

P = EMR output power (in watts)

G = absolute (numerical) power gain ration of the transmitting antenna (unitless)

If the antenna gain is expressed in decibels (dB), the absolute gain can be calculated using the following formula:

$$G = 10^{(G /_{dB} / 10)}$$

Safe Separation Distance Formula	
Frequency Range	SSD Formula
$f < 0.02 \text{ MHz}$	$D = 0.093 \times (PG)^{0.5}$
$0.02 \text{ MHz} \leq f < 0.1 \text{ MHz}$	$D = 4.63f \times (PG)^{0.5}$
$0.1 \text{ MHz} \leq f < 2.0 \text{ MHz}$	$D = 18f \times (PG)^{0.5}$
$2.0 \text{ MHz} \leq f < 32 \text{ MHz}$	$D = 90 \times (PG)^{0.5}$
$32 \text{ MHz} \leq 1000 \text{ MHz}$	$D = 1200/f \times (PG)^{0.5}$

Where emissions occur over a range of frequencies the SSD will be determined for the highest and lowest frequency in the range, and the greater value accepted as the SSD for the device. If the device can be manually set to operate at different frequencies a separate distance can be calculated for each operating frequency. If frequencies can be changed automatically the set of available frequencies should be treated as a range and analyzed. All calculations should be recorded in an SSD Log established for the site.