Task Specific Health and Safety Plan
Remediation Investigation and Feasibility Study Activities
Leviathan Mine Site
Alpine County, California

Prepared for:
Atlantic Richfield, La Palma, CA

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AMEC Geomatrix

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LIST OF ABBREVIATIONS AND ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
AMEC	AMEC Geomatrix, Inc.
ANSI	American National Standards Institute
AS	Aspen Seep (a.k.a. Overburden Seep [OS])
ASB	Aspen Seep Bioreactor
Atlantic Richfield	Atlantic Richfield Company
ATV	all-terrain vehicle
ATW	Authorization to Work
BP	British Petroleum Company
CA	California
CPR	Cardiopulmonary Resuscitation
CUD	Channel Underdrain
DQO	Data Quality Objectives
DS	Delta Seep
DWC	Department of Workers Compensation
EBM	Environmental Business Manager
EMT	Emergency Medical Technician
EZ	exclusion zone
FCR	field change request
ft.	feet
H_2S	hydrogen sulfide
H&S	Health and Safety
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HSO	Health and Safety Officer
HSSE	Health, Safety, Security, and Environment
Hwy	highway
JSA	job safety analysis
Lat:	latitude
Long:	longitude
MOC	management of change
mph	miles per hour
MSDS	Materials Safety Data Sheets
msl	mean sea level
NV	Nevada
PFD	personal floatation devices
PM	project manager
PPE	personal protective equipment
ppm	parts per million
RI	Remedial Investigation
RI/FS	Remedial Investigation Feasibility Study
RWQCB	Regional Water Quality Control Board
site	Leviathan Mine Site
SOLAS	Safety of Life at Sea
SOW	statement of work
SR	State Route
UAO	Unilateral Administrative Order

LIST OF ABBREVIATIONS AND ACRONYMS
(Continued)

U.S.	United States
U.S. EPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service

TASK SPECIFIC HEALTH AND SAFETY PLAN
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
Leviathan Mine Site
Alpine County, California

1.0 INTRODUCTION

This Task Specific Health and Safety Plan (HASP) describes the health and safety program that will be implemented during the Remedial Investigation/Feasibility Studies (RI/FS) activities at the Leviathan Mine Site (site) (Figures 1 and 2) for AMEC Geomatrix (AMEC) personnel and any vendors that deliver or pick up materials on behalf of AMEC. All AMEC subcontractors performing work at the site for the RI/FS will develop their own Task Specific HASP that covers their activities.

This HASP is used in conjunction with the Leviathan Mine Site Health, Safety, Security and Environment (HSSE) Program Document. AMEC accepts the requirements of the aforementioned HSSE Program Document and intends this RI/FS HASP to be subordinate to that document. This HASP governs only AMEC and vendor activities and does not have authority over other Atlantic Richfield Company (Atlantic Richfield) employees, other contractors, subcontractors or visitors.

The HASP provides a description of the AMEC RI/FS Scope of Work, identifies the potential physical and chemical hazards that may be encountered, outlines emergency response procedures, and specifies the health and safety control measures to be followed during implementation of RI/FS activities. This HASP identifies the Health and Safety supervisory personnel and their responsibilities, medical surveillance and training requirements, personal protective equipment (PPE) and control measures, required air monitoring, and decontamination protocols. This HASP is subject to revision as conditions change or new information becomes available.

1.1 FIELD CHANGES TO THE HASP

Changes to the HASP must follow a prescribed process, which is consistent with the British Petroleum (BP) Management of Change (MOC) procedure. Changes can be made to the HASP in the field using a Field Change Request (FCR) Form, located in Appendix A. FCRs cannot be used to change the site minimum PPE requirements or to change a requirement that is in the Leviathan Mine Site HSSE Program Document. Once a FCR has been approved, then the HASP will be revised to reflect the change.

1.2 AUTHORIZATION OF HASP SIGNATURES

This Task Specific Health and Safety Plan is Approved By:

Britt Jones **Date**
AMEC Leviathan Site Coordinator and RI/FS Field Coordinator

Marc R. Lombardi, PG, CEM **Date**
AMEC Leviathan Site Project Manager

Joe Niland, PG **Date**
AMEC Leviathan Site Program Manager

I have reviewed a copy of the AMEC Geomatrix Task Specific Health and Safety Plan, Remedial Investigation and Feasibility Study. I have read and understood its contents and I agree that I will abide by its requirements.

Name	Signature	Date	Company

2.0 SCOPE OF WORK

AMEC has been contracted by Atlantic Richfield to conduct the investigations necessary to complete the RI/FS, as set forth in the Administrative Order for Remedial Investigation and Feasibility Study (UAO) issued by the United States (U.S.) Environmental Protection Agency (U.S. EPA) on June 23, 2008 and the attached Statement of Work (SOW). Those investigations may include determining actual or potential contaminant migration pathways (Environmental Setting and Pathway Characterization); defining the source (Source Characterization); defining the nature and extent of contamination (Contaminant Characterization); identifying actual or potential receptors (Receptor Identification); and conducting an assessment of risks posed to actual or potential receptors (Risk Assessment).

The Study Area for the Remedial Investigation is defined in the SOW as follows: "the areal extent of the Leviathan Mine, the groundwater, surface water and flood plain areas affected by contaminant migration, and all other areas necessary for an understanding of the actual or potential threats to human health or the environment from Leviathan Mine activities, including Leviathan, Aspen and Bryant Creek watersheds, East Fork Carson River, reference areas and areas directly or indirectly disturbed by Leviathan mining activities." AMEC anticipates that AMEC employees will complete the following specific activities during completion of the RI/FS:

Table 1

RI/FS Scope of Work

AMEC Activity	Description
Plan and conduct all remedial characterization of the Leviathan Mine to supplement and verify existing information.	Remedial characterization activities to include: • Determine contamination source and migration pathways • Define the nature and extent of contamination • Identify actual or potential receptors • Conduct a risk assessment for all elements • Conduct a geotechnical engineering assessment • Conduct and prepare a feasibility study report to evaluate alternative remedial actions.
Prepare a Data Quality Objectives (DQOs) report for the U.S. Environmental Protection Agency (U.S. EPA) approval.	Preparation of a technical report that encompasses each component of the Remedial Investigation (RI) to ensure that the collected data is suitable for use in decision making in the development and evaluation of the remedial action.
Prepare and submit for EPA approval a Sampling and Analysis Plan	Document all sample planning and analysis as well as sampling locations in an EPA approved format.
Submit written progress reports to the EPA as required by the UAO	Prepare and submit progress reports to the EPA with periodic submission of requested data and augmented by frequent communication during time of increased site activity.

The specific field activities that may be performed during the RI/FS process include:

- Remote Sensing;
- Site Reconnaissance;
- Mapping;
- Locating Previous Wells;
- Well Rehabilitation and Sampling;
- Surface Geophysical Surveys;
- Surface Water Monitoring;
- Pit Flow Monitoring;
- Flooding Tendency Monitoring;

- Sediment Sampling;
- Soil Logging;
- Excavation of Test Pits;
- Drilling including the use of a Geoprobe™;
- Soil Sampling;
- Borehole Geophysical Surveys;
- Borehole Destruction;
- Groundwater Well Rehabilitation;
- Groundwater Well Installation;
- Grab Groundwater Sampling;
- Hydropunch™ Sampling;
- Groundwater Monitoring;
- Pumping Tests;
- Groundwater Well Abandonment;
- Identifying Gaining and Losing Stream Conditions;
- Water Sampling at the Surface Water-Groundwater Interface;
- Stormwater Investigations;
- Geotechnical Investigations for New Construction;
- Geotechnical Investigations for Existing Construction;
- Meteorological Investigations; and
- Bioassessment Investigations.

3.0 EMERGENCY RESPONSE INFORMATION

IN AN EMERGENCY, CALL THE ALPINE COUNTY SHERIFF'S DEPARTMENT AT 530-694-2231 AND NOTIFY THE HEALTH AND SAFETY (H&S) OFFICER.

Table 2

Emergency Response Telephone Numbers

Description	Address	Telephone Number	Comments
EMERGENCY SERVICE PROVIDER			
Alpine County Sheriff's Office	P. O. Box 278 12777 State Route 89 Markleeville, CA 96120	530-694-2231	Emergency assistance: police, ambulance, emergency rescue
Carson Valley Medical Center	1107 Hwy. 395 Gardnerville, NV 89410	775-782-1600	See Figures 1 and 2 for route maps
Barton Memorial Hospital	2170 South Avenue South Lake Tahoe, CA 96150	530-542-3000 ext 2222	See Figures 1 and 2 for route maps.
Care Flight – Emergency Helicopter Service	450 Edison Way Reno, NV 89502	800-648-4888	Site GPS coordinates should be provided when calling See Section 5.4 for coordinates.
National Response Center		800-424-8802	Toxic chemical releases/spills
Poison Control Center		800-222-1222	Poison control information
Ambulance Service		530-694-2231	Non-emergency number for ambulance service
Volunteer Fire Department, Markleeville	P.O. Box 45 Markleeville, CA 96120	530-694-2223	Chief – Wayne Thomson
Volunteer Fire Department, Woodfords	P.O. Box 21 Markleeville, CA 96120	530-694-2922	Chief – Paul Washam, Jr.
Concentra Health Site	3488 Goni Road, Bldg. E Carson City, NV 89706	775-887-5030	Concentra Health Site Clinic hours 8am-5pm, M-F
Med Direct Urgent Care	120 S. Carson Street Carson City, NV 89706	775-885-4685	Med Direct Urgent Care Hours 8am-8pm
Carson-Tahoe Hospital	775 Fleischmann Way Carson City, NV 89703	775-882-1361	Carson Tahoe Hospital for after-hours, holidays, or weekends in addition to 24-hour emergency care

Table 2
(continued)

Emergency Response Telephone Numbers

Description	Address	Telephone Number	Comments
Atlantic Richfield Company – Owner's Representative Team On Site			
Jerry Johnson		Mobile: 303-906-7251	Owner's Representative
Phil Thompson		Mobile: 951-537-9177	Atlantic Richfield HSSE Oversight
Britt Jones		Mobile: 916-612-6237	RI/FS Field Coordinator
Michelle Souza		Site Phone: 539-554-2599	Site Administrator
When calling Atlantic Richfield Company personnel to report an incident, keep calling in the order below until you obtain ***direct voice*** contact:			
ATLANTIC RICHFIELD COMPANY			
Tony Brown	4 Centerpointe Drive, LPR 4-435 La Palma, CA 90623	Day: 714-228-6770 Mobile: 951-265-4277	Atlantic Richfield Company Environmental Business Manager (EBM)
Chris Winsor	6 Centerpointe Drive LPR 6-174 La Palma, CA 90623	Day: 714-228-6710 Mobile: 714-264-3202	Atlantic Richfield Company Regional Manager
Ray Vose	6 Centerpointe Drive LPR 6-172 La Palma, CA 90623	Day: 714-670-5359 Mobile: 818-398-4177	Atlantic Richfield Company Safety Representative
Alan Delise	2010 Crow Canyon Place San Ramon, CA. 94583	Day: 925-275-3810 Mobile: 916-496-2676	Atlantic Richfield Company West Deputy Regional Manager – North
AMEC			
Satellite Phone #1 Satellite Phone #2	On Site	8816-5146-3502 8816-5146-3499	To Call: 1) Dial 1-480-768-2500; 2) When prompted enter Satellite phone number; 3) wait for connection.
AMEC Satellite Phone	On Site	8816-3164-4827	
Skype Phone	On Site	530-554-2599	Phone number can be used to contact personnel on Site
Marc Lombardi	10670 White Rock Road Suite 100 Rancho Cordova, CA 95670	Office: 916-853-8903 Mobile: 916-302-6326	Project Manager
Britt Jones	10670 White Rock Road Suite 100 Rancho Cordova, CA 95670	Mobile: 916-612-6237	Site Coordinator RI/FS Field Coordinator
Michael Trynor	10670 White Rock Road Suite 100 Rancho Cordova, CA 95670	Mobile: 775-230-4608	Health and Safety Officer

Table 2
(continued)

Emergency Response Telephone Numbers

Description	Address	Telephone Number	Comments
ENVIRONMENTAL PROTECTION AGENCY, REGION 9			
Kevin Mayer	75 Hawthorne Street, SFD-7-2 San Francisco, CA 94105-3901	Day: 415-972-3176	Project Manager
Gary Riley	75 Hawthorne Street, SFD-7-2 San Francisco, CA 94105-3901	Day: (415) 972-3003	Assistant Project Manager
REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)			
Chein Kao	South Lake Tahoe	Day: 530-543-6754	Project Manager
Douglas Carey	South Lake Tahoe	Day: 530-542-5468 Pager: 530-494-8052	Site Manager
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION			
Fatality / Hospitalization Incident Reporting		1-800-321-6742	Call within 8 hours if a fatality or three or more injuries requiring hospitalization occur
PARK CATTLE CO. RANCH			
Park Cattle Co. Main Office	Minden, NV	Day: 775-782-2144	Report injured free-range cattle in immediate off-Site vicinity to RWQCB first. If RWQCB staff is unavailable contact Park Cattle Co. and notify them of injury directly.

3.1 EVACUATION PROCEDURES

In case of an emergency on site that requires evacuation of AMEC or vendor personnel, two off site muster points are set up to meet, perform a head count, and assess the situation and any injuries. In the case of a site evacuation, notification will be made using the 2-way radios and if needed the satellite phone. Site evacuation will also be signaled using the air raid siren located at Aspen Seep (AS) and Pond 4.

Personnel not able to make their way to the muster point should find safety and contact the Health and Safety Officer or Site Coordinator via 2-way radios, satellite phone or mobile phone when able to do so safely.

Evacuation Plan A:

This on site muster point is located at the site trailer at the water treatment plant at Pond 4. (Latitude [Lat]: 38.706579N, Longitude [Long]: 119.662539W).

Evacuation Plan B:

This California (CA) off site muster point is south of the site at the Heenan Lake parking area. Take the US Forest Service (USFS) Road 10052 South to CA State Route 89 (SR 89); turn right on CA 89 to the Heenan Lake parking area on the left. (Lat: 38.6562096N, Long: 119.6646157W).

Evacuation Plan C:

This Nevada (NV) off site muster point is north of the site at the intersection of Leviathan Mine Road and State Highway 395 (Hwy 395). Take Leviathan Mine Road North to Hwy 395 (Lat: 38.80306N, Long: 119.6072647W).

Evacuation Plan D:

This on site muster point is at the upper staging area of AS near the emergency evacuation shelter. (Lat: 38.71111N, Long: 119.65318W).

See Figure 3 for emergency evacuation muster points and helicopter landing area locations.

3.2 NOTIFICATION AND RESPONSIBILITIES

Maintaining the health and safety of our workforce is a responsibility AMEC takes seriously. To uphold this responsibility, AMEC has implemented a proactive health and safety program that includes nurse care management and Incident Intervention® services for all employees. AMEC has contracted WorkCare, an occupational health-consulting firm, to carry out these services for AMEC's employees.

The following incident reporting procedures are critical in ensuring that if an incident does occur AMEC will properly manage it.

For a non emergency incident:

1. Report the situation to your immediate supervisor and health and safety officer (all incidents with the clear starting event should be reported within 1 hour of occurrence).

    - Immediate supervisor or health and safety officer will provide employee with a copy of (Department of Workers Compensation) form DWC-1 within 24 hours of notification.
    - Health and safety officer will complete an incident investigation and complete Form 5020 and/or OSHA 300a as appropriate.

2. Call WorkCare 24/7 Hotline at (888) 449-7787.

WorkCare will assess the situation telephonically and determine whether the incident requires medical attention. During this process, the WorkCare will perform the following duties:

- Explain the process to the caller;
- Determine the nature of the concern;
- Provide appropriate medical advice to the caller;
- Determine appropriate path forward with the caller;
- Maintain appropriate medical confidentiality;
- Help caller to execute path forward, including referral to the appropriate local medical facility ; and
- Send an email notification to the corporate safety contact.

For an emergency incident:

1. Supervisor on duty must immediately call the local sheriffs office at (530) 694-2231; no employee may respond to outside queries without prior authorization. Any outside media calls concerning this incident must be referred immediately to external communications director Brad Christensen at 602-432-1339.

    - Provide copy of form DWC-1 to employee within 24 hours of reporting injury.

2. Health and safety officer will complete an incident investigation and complete Form 5020 and/or OSHA 300a as appropriate.

3. Once medical attention is sought and provided, the supervisor must contact WorkCare 24/7 Hotline at (888) 449-7787.

WorkCare will be responsible for performing the following duties:

- Contact the treating physician;
- Inform the physician of the injury/illness;
- Request to be consulted on treatment;
- Determine appropriateness of treatment;
- Request copies of all medical records from clinic;
- Remind the treating physician of the care management philosophy; and
- Send an email update to the Corporate Safety contact.

Your immediate supervisor or safety coordinator should follow the instructions on the AMEC, Safety Health and Environment, Incident Reporting Intranet Page.

Initial reporting of any incident on site will follow the requirements of the Leviathan Mine Site HSSE Program Document and will be reported to Atlantic Richfield HSSE Oversight personnel. If an incident involves an AMEC employee or AMEC contracted vendor employee and requires more than first aid, the AMEC Health and Safety Officer in consultation with Atlantic Richfield HSSE Oversight/ Emergency Medical Technician (EMT) will determine whether emergency services are needed or whether the employee can be safely driven off the site.

If emergency services are needed, the Alpine County Sheriff's department will be called. Upon arrival of the appropriate emergency response personnel, field personnel shall defer authority but shall remain on the scene if necessary to provide possible assistance.

At the earliest opportunity, the AMEC Site Coordinator shall contact the Project Manager and the Project Manager will contact the Atlantic Richfield Company EBM. All incidents, including injuries and incidents (such as property damage, material releases, and unauthorized discharges) must be reported to the Project Manager within one hour or as the situation permits. Table 1 lists project emergency response phone numbers.

3.3 DIRECTIONS TO NEAREST MEDICAL FACILITIES

The selection of a medical facility may be determined by driving conditions on Forest Service Road 10052 and Leviathan Mine Road. See Figures 1 and 2 for hospital route maps.

The nearest emergency medical facilities are:

Carson Valley Medical Center at 1107 Hwy 395 in Gardnerville, NV (775-782-1600)

Primary Route: The primary route to the Carson Valley Medical Center, NV is as follows: take the Leviathan Mine Road north to Hwy 395 and turn left and proceed to Gardnerville. Proceed to the first stoplight in town. The crossroad is Riverview Road to the left and Pine Nut Road to the right. The medical center is just past the stoplight on the right side of Hwy 395.

Alternate Route: Pending driving conditions on Leviathan Mine Road, an alternate secondary route to the Carson Valley Medical Center, NV is as follows: take Forest Service Road 10052 south, approximately 2.6 miles, south to CA SR 89. Go approximately 10 miles and turn right on NV State Route 88 north and travel approximately 13 miles to Minden. Turn right onto Hwy 395 and proceed to Gardnerville. Drive past Virginia Ranch Road (on the left). The medical center is on the left side of Hwy 395, just prior to the stop light at Riverview Road to the right and Pine Nut Road to the left.

Barton Memorial Hospital at 2170 South Avenue in South Lake Tahoe, CA (530-541-3420)

Primary Route: To get to the Barton Memorial Hospital, take Forest Service Road 100 South, approximately 2.6 miles to CA State Route 89, and turn right. Go approximately five (5) miles to State Route 89/4 Junction. Turn right on State Route 89 to Markleeville and proceed to

South Lake Tahoe. In South Lake Tahoe, continue on SR 89 past F, E, and C Streets, and turn right on South Avenue. Follow the hospital signs and continue past 4th Street. The hospital is on the right side.

3.4 HELICOPTER EMERGENCY OPERATIONS

In case of emergency evacuation by helicopter, the Site Coordinator will give the Site's Latitude and Longitude to the emergency operators. Emergency evacuation landing area locations are:

Aspen Creek: Latitude 38.71308 N and Longitude 119.65014 W
Pond 4: Latitude 38.70674 N and Longitude 119.66155 W

3.5 POTENTIAL INCIDENTS

Although unlikely, the following situations could occur at the site and would require emergency response actions:

- Release of hazardous liquids or gases;
- Uncontrolled release and/or spill;
- Fire;
- Adverse weather and natural phenomenon; or
- Medical emergency.

The appropriate emergency actions for each potential situation are listed in the following table:

Table 3

Emergency Actions

Cause	Action
Release of H_2S	In the event of detection by handheld air monitoring of a sudden release of hazardous vapors or gases constituting a potentially hazardous situation, the field team will halt operations and evacuate the work area (in a diagonal and upwind direction) using appropriate emergency signals (air raid siren, alarm or hand signals). The Health and Safety Officer will notify appropriate emergency response and supervisory personnel identified in Table 1.
Uncontrolled Release or Spill	Sorbent materials, pads, booms, or pillows and other cleanup materials and equipment will be used to neutralize and/or absorb spills and provide for a quick, easy, and safe response to any release or spill of fuels or hazardous materials. Winter clean up of spills will be conducted as weather permits. Due to the extreme contact hazard associated with Sodium Hydroxide, any significant release or spill of this material will require the development of a spill response plan and detailed Job Safety Analysis (JSA) prior to implementing any cleanup actions.
Fire- Incipient or Small Fires	Small fires will be managed using on site fire extinguishers. Personnel who may respond to emergencies will be trained in the use of fire extinguishers on an annual basis.
Fire- Uncontrollable	In case of a potentially uncontrollable fire, the Health and Safety Officer will: 1. Immediately notify the Alpine County Sheriff's office at 530-694-2231; 2. Determine the extent of the fire; 3. Assess the hazard posed to the treatment system and ancillary facilities at the site and to on site personnel; 4. Determine whether or not it is safe to attempt to control or extinguish the blaze while waiting for emergency response to arrive; and 5. Depending on the location of the fire the Health and Safety Officer will determine the best route to evacuate all site personnel.

Table 3
(continued)

Emergency Actions

Cause	Action
Fires- Ethanol related	Ethanol is highly flammable and explosive. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Containers may explode in the heat of a fire. Flammable liquid and vapor may form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.
Wildfires	Wildfires often begin un-noticed. They spark quickly, igniting brush and trees. If you notice a fire: 1. Call the Alpine County Sheriff Office 530-694-2231 as soon as safely possible; 2. Evacuate to the immediate vicinity of the Pond 4; Evacuation A and/or D; 3. If there is a fire alert or an evacuation request: choose a route away from the fire hazards; and 4. Watch for changes in the speed and direction of the fire and smoke.
Adverse Weather- Electrical Storms	If lightning is spotted near the site, the Health and Safety Officer or Site Coordinator will determine if a lightning danger exists at the site by using the 30/30 Rule. The 30/30 Rule is defined as follows: if the time between seeing lightning and hearing thunder is <30 seconds, personnel shall go inside or take shelter in a vehicle. Personnel will stay indoors for 30 minutes after hearing the last clap of thunder or seeing lightning. If lightning is visible but thunder is not heard, personnel will take shelter.

Table 3
(continued)

Emergency Actions

Cause	Action
Adverse Weather-High Winds	If it is determined by the Health and Safety Officer or Site Coordinator that a high wind emergency is occurring, or eminent, a site wide high wind emergency shall be declared. A high wind emergency is determined to be when winds reach a speed of 35 miles per hour (mph). Dust storms will be evaluated by the Health and Safety Officer to determine if work can continue or evacuation or shelter must be obtained. The Health and Safety Officer or Site Coordinator will then direct site personnel to evacuate or take cover in the appropriate site trailers or low profile vehicles, and account for all personnel at each shelter location. The Health and Safety Officer or Site Coordinator will determine when the high wind emergency is over, and assess whether the site is safe to allow a return to work by all or some of the employees (some tasks may have to be postponed until the wind speeds diminish). If minor damage is noted following the high wind event, the Health and Safety officer or Site Coordinator shall assess the damage and determine if repairs are needed before personnel can return and safely resume normal site activities.
Adverse Weather-Flash Floods	If it is determined by the Health and Safety Officer or Site Coordinator that a flash flood emergency is occurring, or imminent, a site wide flash flood emergency shall be declared. The Health and Safety Officer or Site Coordinator shall determine if the site can be evacuated safely during the flash flood emergency. If it is determined by site management and the local authorities that travel is too hazardous to leave the site, the Health and Safety Officer or Site Coordinator will designate safe areas on site which can be used for assemble and shelter until such time that travel is deemed safe enough for site evacuation. Any areas of flowing water should be avoided both on foot and in an automobile, as it is often impossible to judge the speed and depth of the flowing water. The Health and Safety Officer with assistance from the local emergency response personnel shall determine when the flash flood emergency is over and will assess any damage which has occurred on the site and determine whether or not site personnel can return to all or a portion of the site.

Table 3
(continued)

Emergency Actions

Cause	Action
Adverse Weather-Avalanche	Avalanche conditions form as a result of the interaction of terrain, weather, and snow pack. The combination of new snowfall and wind creates the unstable layering that result in slab avalanches. A prolonged period of cold and clear weather can substantially weaken the snow pack. Qualities like the stiffness or a Styrofoam texture of the snow cover are significant. Hollow sounds, cracking, or collapsing are also important field observations. If you are caught in an avalanche, try to travel off the slab at a 45-degree angle before it breaks up and tumbles you, grab trees or other secure objects once you begin to tumble and use swimming motions and fight hard to stay on top of the snow. As the slide begins to slow, clear an air space in front of your face, and thrust a hand towards the snow surface and try to remain calm. Personnel who may be potentially exposed to areas where avalanches are likely will carry avalanche beacons. Avalanche beacons are a class of radio transceivers specialized to the purpose of finding people or equipment buried under snow. When transmitting, the device emits a pulsed signal, which another transceiver can receive. All new beacons transmit and search at an operating frequency of 457 kHz (international standard).
Earthquake	The Health and Safety Officer or Site Coordinator should then coordinate an evacuation of the site to the predetermined muster points, in the case of an earthquake. All employees, contractors and visitors shall be accounted for and not allowed to leave the site until given permission by the Health and Safety Officer or Site Coordinator. If a significant earthquake event does occur, the most likely place for injuries or fatalities on the site will be in locations where falling debris or soil collapse could occur, or where flood waters may flow in the event of a breached pond. Therefore, once the quake has stopped or slowed to only minor aftershocks, response efforts should focus on those locations where personnel were in or near, collapsed buildings, open trenches, steep slopes or tailings piles. If personnel are missing, the Health and Safety Officer or Site Coordinator shall immediately help coordinate search efforts with local emergency crews (if they can reach the site) and on site employees and/or contractors.

Table 3
(continued)

Emergency Actions

Cause	Action
Medical Emergency	In the event of a serious injury or illness, the Health and Safety Officer in consultation with Atlantic Richfield HSSE Oversight/ EMT the will evaluate whether emergency services should be called or if the individual can be safely moved to a medical facility. The selection of the medical facility depends on existing road conditions. Workers with suspected back or neck injuries are not to be moved. If there is evidence of serious trauma or unknown chemical exposure, Care Flight out of Reno, NV will provide emergency helicopter service to the site from a base in the Minden-Gardnerville, NV area. In such instances, the worker should be stabilized while waiting for assistance. First aid kits will be maintained at the site for treating minor injuries. At least two regular on site AMEC personnel will have First Aid/CPR training.

Additional information on emergencies is available in the Leviathan Mine Site HSSE Program Document.

3.6 INCLEMENT WEATHER PROCEDURE

AMEC will institute the following procedure to be followed in case of inclement weather:

Snowing or raining at the start of the day:

1. If it is snowing or raining in Gardnerville, Minden, Markleeville, or Carson River Resort we will automatically go with a delayed start to the workday. This means all contractors will be on standby until a go / no-go decision is made on whether or not work will be conducted at the site for the day. This "standby notification" will be communicated to all subcontractors and vendors by 0530 the morning in question. The Site Coordinator will notify one representative from Atlantic Richfield and one representative from each contract company. Each contractor in turn will then have a designated phone tree to notify all personnel that nobody heads to the site during inclement weather.

2. Any contractors or subcontractors staying at Carson River Resort will be required to call the Site Coordinator via a landline to find out if there is a delayed start on a day of inclement weather.

3. Each Contractor will call all of their respective subcontractors, vendors, and expected deliveries scheduled for the day and tell them to hold until further notice. No subcontractors or deliveries will be allowed on site until the hold is lifted.

4. If it is determined that the weather is breaking, a scouting crew comprised of two to three BP/Atlantic Richfield and AMEC representatives will make a test run to the site on either the Nevada or California Access road.

5. The scouting crew will either: turn around if the weather is too bad and call off work for the day, or they will call the designated company representatives from the site and notify them to come to work and what time the daily safety meeting will take place. Notifications will be done using the same phone tree from step 1.

Snowing after personnel are on site:

1. If it starts snowing (more than light snow) while personnel are on site, all deliveries and new personnel coming to the site will be called and told to cancel for the day.

2. If snow starts to stick and conditions at the site are deteriorating, the health and safety officer or designated representative will be dispatched to check the Nevada road conditions every two hours while personnel are on site.

3. No one will exit the California side and the goat trail from/to Aspen will not be used if snow is sticking to the ground.

4. BP/Atlantic Richfield will make the final call of when to exit the site. Everyone will go out the Nevada side and muster at Evacuation Plan C (Intersection of Highway 395 and Leviathan Mine Road).

5. Once the decision has been made, everyone will leave the site within 30 minutes.

4.0 KEY PROJECT PERSONNEL AND RESPONSIBILITIES

To meet its health and safety objectives for AMEC and AMEC contracted vendor activities, an organizational system of personnel with various health and safety responsibilities has been developed. Duties are outlined below.

4.1 PROJECT MANAGER - MARC LOMBARDI

The Project Manager (PM) shall:

- Direct all AMEC operations;
- Be ultimately responsible for compliance with BP HSSE Programs;
- Inform the Site Coordinator and Health and Safety Officer of all pertinent project developments and plans;
- Provide resources necessary for a safe working environment;
- Investigate incidents;
- Maintain communications with the client and Owner's Representative; and
- Report incidents to EBM.

4.2 RI/FS FIELD COORDINATOR – BRITT JONES

The RI/FS Field Coordinator shall:

- Coordinate and manage AMEC field activities;
- Manage safety into the planned activities;
- Stop work as necessary to prevent incidents or impact to the environment;
- Fill out permits and Job Safety Analysis for AMEC workers and subcontractors;
- Evaluate hazards;
- Communicate safety requirements to staff members;
- Conduct daily safety meetings utilizing the Authorization to Work process;
- Manage emergency situations, as necessary;
- Investigate incidents;
- Monitor compliance with BP requirements, federal regulations and the HASP;
- Suggest modifications to the HASP as necessary;
- Perform work in a safe manner, thus being a good role model for safe behavior;

- Verify staff and contractors have had adequate training for the work;
- Manage change in accordance with BP procedures; and
- Support the Health and Safety Officer in daily safety related decisions.

4.3 HEALTH AND SAFETY OFFICER – MICHAEL TRYNOR

The Health and Safety Officer shall:

- Stop work as necessary to prevent incidents or impact to the environment;
- Ensure personnel coming onto the site have received Orientation Training;
- Verify all personnel working on the site meet the training and medical requirements;
- Keep site records both on the site and in the AMEC Rancho Cordova office;
- Ensure compliance with BP requirements, Federal and State Regulations and this HASP;
- Direct all health and safety aspects of field activities;
- Ensure that the Drug and Alcohol program is implemented and enforced;
- Prepare incident reports;
- Modify the site Health and Safety Plan as required based on incidents and findings regarding work practices;
- Suggest modifications to the HSSE Program document as necessary;
- Implement Behavior Based Safety Principals into the work;
- Discuss Safety and Health practices with employees and vendors, and
- Report all incidents and findings regarding work practices to the Site Coordinator and Project Manager.

4.4 EMPLOYEES

Employees shall:

- Stop work as necessary to prevent incidents or impact to the environment;
- Obey health and safety work practices and procedures;
- Immediately report unsafe conditions;
- Read, understand, and follow the requirements of the HSSE Program Document and the AMEC Task Specific HASP. All workers must sign the Compliance Agreement form;

- Participate in and attend training sessions, safety meetings and safety related briefings. Maintain appropriate and current training documentation, and provide documentation to the Health and Safety Officer;
- Provide Material Safety Data sheets (MSDS) for all chemicals brought on site;
- Wear PPE as directed by this HASP and manufacturer recommendations, and
- Report recognized unsafe conditions, near misses, and other incidents to the Health and Safety Officer.

4.5 VENDORS

Vendors shall:

- Stop work as necessary to prevent incidents or impact to the environment;
- Follow the direction of the RI/FS Field Coordinator and Health and Safety Officer;
- Notify the RI/FS Field Coordinator of delivery times;
- Be informed on the requirements of the Nevada and California access roads;
- Follow the directions of traffic control personnel;
- Immediately report unsafe conditions;
- Stay out of restricted areas;
- Provide MSDS for all chemicals brought on site;
- Participate in site orientation training; and
- Be aware of and follow emergency procedures.

5.0 GENERAL HAZARD IDENTIFICATION AND CONTROL METHODS

For every task identified in Section 2.0 of this plan, AMEC has evaluated the hazards associated and devised control measures for those hazards. In addition to Table 4, which outlines hazard identification and control methods, a corresponding JSA will be completed prior to work, which details the hazards and controls.

Additionally, work is controlled using the Authorization to Work and Permits described below.

It should be noted that a significant portion of this work will be conducted in off-site areas where the environment is less controlled and predictable. Hazards in these areas must be carefully examined and documented in order to predict and mitigate them. Hazards in these off-site areas include unstable slopes, rock slides, moving water, bears, hunters, mountain lions, remote terrain, fallen trees and unpredictable weather.

5.1 ENGINEERING AND ADMINISTRATIVE CONTROLS

When controlling hazards, engineering and administrative controls are the first choice. If engineering out the hazard or controlling the hazard via administrative means does not alleviate the issue, then PPE is used as a last resort.

5.2 PERSONAL PROTECTIVE EQUIPMENT

The following constitutes Level D PPE and the minimum requirements for this site:

- High visibility orange shirt or orange safety vest;
- Long sleeved shirt;
- Full-length pants;
- Boots/shoes, safety toe, chemical resistant (as applicable);
- Gloves, (type of glove dependant on the work task);
- Safety glasses or chemical splash goggles meeting American National Standards Institute (ANSI) Z.87.1 requirements or full mask face shield depending on the work task;
- Hardhat meeting ANSI Z.89.1 requirements; and
- Earplugs and/or earmuffs in work areas where noise levels equal or exceed 85 decibels A-weighted (dBA). A general field rule to determine areas with noise greater than 85 dBA, is to evaluate how hard it is to hear normal conversation at 3 feet (ft.) from the speaker. If conversation is difficult without shouting, then the area should be considered to be above 85 dBA. Noise surveys will be completed on an as needed basis.

5.3 AUTHORIZATION TO WORK

All site fieldwork will be performed after completing an Authorization to Work (ATW) form, located in Appendix A. The ATW needs to be completed before the work commences each day and covers the task to be completed in the period covered by the form and stipulates the Control of Work procedures and permits required. ATW forms can be self-authorized for work not requiring a permit. An ATW is only valid when all required signed permits are attached to it. The RI/FS Field Coordinator, Health and Safety Officer, and anyone who has attended the permit writer training have been trained to sign off on ATW's.

Each ATW will be developed by personnel directly involved in the task and each report will be reviewed by the Health and Safety Officer prior to initiation of the job. After the ATW has been reviewed and signed by the appropriate person, the original will be filed in the office trailer, and a copy will be kept at the work location with the applicable JSA's. If the ATW needs to be changed during the work, then the original in the office must be changed as well as the field copy.

5.4 PERMITS

Certain tasks that AMEC will be performing require a permit as detailed in the Leviathan Mine Site HSSE Program Document. Permits should be filled out by the personnel performing the work, however it can only be signed by a person authorized to do so and cannot be the person doing the work. The RI/FS Field Coordinator, Health and Safety Officer and anyone who has attended permit writer training are authorized permit writers.

Once a permit is written, it must be signed by the permit writer, reviewed and countersigned by a third party who will be one of the Atlantic Richfield HSSE Oversight personnel and signed by the person doing the work. The original permit will be filed in the office trailer, and a copy will be kept at the work location with the applicable ATW and JSA's. If the Permit ATW needs to be changed during the work, then the original in the office must be changed as well as the field copy. Once the work under the permit is complete then each permit (the original and the copy) must be signed out as complete. If the work is not complete at the end of the day then a new permit must be issued the following day. Hot work permits are the only permits that can be re-endorsed the following day.

The following is a list of permits that may be used for this project:

- Hot Work Permit
- Confined Space Entry Permit

- Ground Disturbance Permit
- Working at Heights (> 6 ft.) Permit

5.5 JOB SAFETY ANALYSES

A JSA is a pre-job planning tool used for hazard identification that involves breaking a job down into basic work elements. Each element is scrutinized to identify all conditions or activities that could lead to an incident. JSA's have been prepared for most activities to be conducted at the site. Additional JSA's for the project will be developed as various tasks are defined over time. The RI/FS Field Coordinator and Health and Safety Officer have been trained to prepare JSA's. Appendix C contains current JSA's for AMEC's scope of work.

JSA's will be modified and updated electronically on a monthly basis to capture the field changes made by the crews. The original JSA's will be filed in the on site filing system. Copies will be filed at the AMEC Rancho Cordova, California office.

6.0 TASK SPECIFIC HAZARDS AND CONTROL METHODS

AMEC has identified major hazards for employees in Table 4; control methods are delineated following the table.

Table 4

AMEC RI/FS Specific Hazard and Controls

AMEC Task	Expected Hazards	Applicable Section to Refer to for Control Measures
All AMEC RI/FS Tasks Including: Site Reconnaissance Mapping Locating Previous Wells Surface Geophysical Surveys Meteorological Investigations Geotechnical Investigations for New Construction Geotechnical Investigations for Existing Construction	Unstable slopes Slips and trips Access road Cold stress Heat stress Altitude sickness Poisonous snakes, ticks, insects, plants UV radiation exposure Explosives Other contractor related hazards Bloodborne pathogens Bears Mountain Lions Hunters	6.5 6.15 6.1 6.8 6.9 6.6 6.7 6.10 6.11 6.21 6.16 6.24 6.25 6.26
Surface Water Monitoring Including: Pit Flow Monitoring Flooding Tendency Monitoring	Work around water Hazards associated with sampling activities Acid rock drainage Hydrogen sulfide gas	6.2 6.4 6.17 6.20
Sediment Sampling	Work around water Hazards associated with sampling activities Musculoskeletal injuries from lifting Acid rock drainage Hydrogen sulfide gas	6.2 6.4 6.13 6.17 6.20
Soil Logging	Hazards associated with sampling activities	6.4
Excavation of Test Pits	Heavy equipment operation Noise Energized equipment Acid rock drainage Diesel fuel Hydrogen sulfide gas	6.3 6.12 6.14 6.17 6.18 6.20
Drilling including the use of a Geoprobe	Noise Energized equipment Acid rock drainage Diesel fuel Hydrogen sulfide gas Drilling or Geoprobe operation hazards	6.12 6.14 6.17 6.18 6.20 6.22 and 6.23

Table 4
(Continued)

AMEC RI/FS Specific Hazard and Controls

AMEC Task	Expected Hazards	Applicable Section to Refer to for Control Measures
Soil Sampling	Hazards associated with sampling activities Musculoskeletal injuries from lifting Acid rock drainage Sludge	6.4 6.13 6.17 6.19
Borehole Geophysical Surveys	Musculoskeletal injuries from lifting Acid rock drainage	6.13 6.17
Borehole Destruction And Groundwater Well Abandonment	Noise Energized equipment Acid rock drainage Diesel fuel Hydrogen sulfide gas Drilling or Geoprobe operation hazards	6.12 6.14 6.17 6.18 6.20 6.21 and 6.22
Groundwater Well Installation	Noise Energized equipment Acid rock drainage Diesel fuel Hydrogen sulfide gas Drilling operation hazards	6.12 6.14 6.17 6.18 6.20 6.21
Groundwater Sampling Including: Grab Groundwater Samples Hydropunch™ Sampling Groundwater Monitoring Pump Tests Water Sampling at the Surface Water-Groundwater Interface Identifying Gaining and Losing Stream Conditions Flooding Tendency Monitoring Stormwater Investigations	Work around water Hazards associated with sampling activities Musculoskeletal injuries from lifting Energized equipment Acid rock drainage Hydrogen sulfide gas	6.2 6.4 6.13 6.14 6.17 6.20
Bioassessment Investigations	Hydrogen sulfide gas	6.20

Remote sensing is listed as one of the RI/FS activities; however, remote sensing will be completed using aircraft. Aircraft hazards will not be covered in this HASP since this activity will not include any AMEC staff. The company chosen for remote sensing will have a HASP that they will follow.

6.1 TRAFFIC MANAGEMENT AND ACCESS ROADS

Access to the site is provided by Leviathan Mine Road which is an unpaved road that connects to CA SR 89 over Monitor Pass to Interstate 395 (Hwy 395) in the Double Spring Flat area between Gardnerville, NV and Topaz Lake, NV. Leviathan Mine Road skirts the eastern boundary of the site with access to the site controlled by locked gates that are kept closed and locked at all times to prevent unauthorized access.

The elevation of Leviathan Mine Road varies from approximately 5,800 ft. above mean sea level (msl) to 8,000 ft. above msl with potential inherent extreme variations in weather. Fog and inclement weather may be encountered during the course of the work, including accumulation of ice and snow from precipitation. In normal years, wheeled-vehicle access is limited to late spring through mid-fall, with wheeled-vehicle travel discouraged during heavy rains or wet/icy conditions due to potential road hazards.

Leviathan Mine Road is a public access road and is subject to recreational users such as campers, off-road 4x4 vehicles, all-terrain vehicles (ATVs), bikers, hikers and hunters. In addition, wildlife may also be encountered on the roadway.

Access to the site from Hwy 395 in Nevada is via approximately 10 miles of single lane unpaved road. Some sections of this access route are very rough and rocky with unguarded curves that have steep embankments. In general, the Nevada side access road is not as steep and the turns more broad than the CA side access. The Nevada side access road varies in width and has limited shoulder area. However, a few widened areas exist for relief to get outside of the main lane for passing. One tight hairpin turn is located on a steep grade just after the road crosses Leviathan Creek on the way into the site. This turn is the only paved section of the Nevada side access. The maximum speed limit is posted as 25 miles per hour (mph). This section of road may be used by the public. Rockslides are also possible on this road.

Access to the site from SR 89 in California is via approximately 2.6 miles of single lane gravel road. In general the CA side access road is steeper with tighter “S” turns than the NV side access. The CA side access road varies in width with limited shoulder area and unguarded curves that have steep embankments. However, a few widened areas exist for relief to get outside of the main lane for passing. Two sections of the CA side access road are paved, the first being a windy stretch with a steep grade located just off SR 89 and the second being a fairly straight section on a steep grade where the road crosses the summit. The maximum speed recommended is 15 mph. This section of road may be used by the public. Rockslides are also possible on this road.

AMEC requests all vendors limit the size of trucks delivering to the site to the extent possible and will inform all vendors of changing road conditions. Due to road conditions and the relatively tight "S" turns on the CA side, only trucks less than 30 ft. total length will be allowed to access the site via the CA Access Road. Trucks larger than 30 ft. total length must access the site via the NV Access Road. Please see the road guidelines presented in Revision 1 of The Traffic Management Plan for more information on roads and site access.

Once on site, all vehicles will obey the 15-mile per hour speed limit and travel with their lights on.

In order to ensure that AMEC personnel leave the site safely, site personnel working on RI/FS activities will notify the Health and Safety Officer via mobile phone that they have reached either Hwy 395 or SR 89. Subcontractors will be encouraged to participate in this system with their own crews. One person from each subcontract company will contact the AMEC Health and Safety Officer at the end of the day. If someone does not call in, then an attempt to contact that person via cell phone will be made. If no contact is made, the AMEC HSSE officer and Atlantic Richfield HSSE Oversight will be notified and will begin to search for the missing person.

6.2 WORKING AROUND WATER

There are several ponds and streams at the Leviathan Site that require that special precautions be taken within their vicinity. Hazards associated with these bodies of water include contact with low pH water and drowning hazards. It is important that personnel exposed to water-related-hazards be provided with immediate access to emergency communications such as radio communications and/or satellite phones. In addition, like all locations on the site, the use of a buddy system should be maintained in areas with water-related-hazards.

If there is potential for drowning within 6 ft. of your work area, AMEC personnel will use Type III Personal Flotation Devices (PFDs) when working near water. This includes the areas along ponds and creeks, and when working in offsite areas. Recreational boating PFDs such as ski jackets are not allowed for work applications. PFDs shall be fitted with a SOLAS (Safety of Life At Sea convention) compliant whistle or noise-making device.

Pond areas are also equipped with life buoys at regular intervals around the edge and a rescue skiff is available as well. At least one paddle, attached by lanyard to the skiff (or a fixed oar) shall be included in the skiff, as well as at least one PFD for each rescue person and at least one throwing ring or throwing bag.

6.3 HEAVY EQUIPMENT

During RI/FS activities, a variety of heavy equipment may be used. Because heavy equipment presents a diverse number of hazards, the following practices will be observed:

- On site equipment shall meet the requirements of relevant California OSHA standards.
- Equipment will be inspected upon arrival to the site. All deficiencies will be corrected before use.
- Operator qualifications to use equipment will be verified and documented. Equipment operators shall have the experience, skills and knowledge to safely operate the equipment to be used. AMEC will assess whether the operators have appropriate skills and training by: obtaining copies of relevant licenses, evaluating experience relative to job tasks, and evaluate skills by observation. Documentation of evaluations will be maintained by AMEC.
- Operators should always use the three-point contact rule when climbing onto or off heavy equipment. The three-point rule means having both feet and one hand, or one foot and both hands in contact with the ladder access at all times.
- Operators and/or mechanics will complete daily inspections on all heavy equipment at the beginning of each shift to ensure that parts, accessories, and equipment are in safe operating condition and free of apparent damage. The inspection shall be documented and include as a minimum, basic equipment and motor vehicle components and systems such as service brakes, parking brakes, emergency brakes, horn, steering mechanisms, operating controls, windshields, windows, mirrors, tires, lights, seat belts, head lamps, brake lights, rollover protection, backup alarms, and evidence of fluid leaks. Deficiencies shall be documented and corrected prior to use. Copies of inspections shall be maintained on site. Vehicles must be taken out of service if they don't pass inspection.
- Each piece of equipment being operated will have a designated spotter at all times.
- Operators will set parking breaks and place attachments on the ground when getting out of equipment or when someone is on equipment speaking to the operator.
- Spotters will wear high visibility orange vests and be trained in the correct methods of spotting equipment. Spotters will remain in the operators line of sight at all times and will not stand in the swing radius of equipment.
- Personnel working on site will wear high visibility orange shirts or orange traffic vests. If a person must approach a piece of equipment, the person will make eye contact with the operator and wait for a signal to approach. Personnel will not approach equipment from the back.
- Site personnel will stay out of the range of the swing arm of equipment and will not at any time ride in or step on the point of operation of the equipment.
- All personnel will stay out of traffic patterns, if not essential to the operation, and will understand the path of travel of the equipment.

- Fueling will take place in designated areas. Fueling will not be conducted on gasoline engines that are hot and diesel transfers will not be completed without bonding. Spill kits will be kept stocked and within close proximity (10 ft. or less) of the fueling areas.
- Hearing protection will be worn if noise levels exceed 85 decibels.
- Equipment operators will ensure that they know the load ratings of equipment and do not exceed them. Daily operational and safety checks will be made, and documented, of all equipment prior to use.

6.4 SAMPLING ACTIVITIES

Environmental sampling activities for the RI/FS will include collection of biota, surface and subsurface soil, drilling or use of a Geoprobe, sampling of water from streams and ponds, and sampling of sediment from streams and ponds.

Hazards associated with sampling include work around heavy equipment, including drill rigs and geoprobes, contact with contaminated water, soil and sediment, contact with preservation chemicals, work around water, and work in remote locations.

Field personnel will take precaution while collecting samples by starting in modified level D PPE, which includes wearing nitrile gloves when handling soil or groundwater. If in the event air monitoring indicates modified level D is not acceptable, the Health and Safety Officer will upgrade the field personnel to level C PPE with the appropriate respirator.

Field personnel shall be cautious of splash hazards when obtaining samples, and when in proximity to drill rigs, geoprobes and backhoes Use of the appropriate PPE will help minimize risks of liquid contact with the skin. Contact with contaminated water, sediment and soil will be avoided unless appropriate PPE is worn.

Personnel shall be familiar with safety precautions to use around heavy equipment, particularly drill rigs and backhoes. Personnel performing sampling will stay out of the point of operation areas and swing radius of equipment.

Nitric acid may be used as a preservative in sample bottles. Nitric acid is an irritant and can cause severe tissue damage. The MSDS should be reviewed prior to sampling and a JSA documenting the hazards associated with nitric acid should be used to guide the work.

Personnel will be aware of appropriate working around water guidelines and will wear flotation devices as required.

6.5 UNSTABLE SLOPES

Many unstable slopes exist on-site and in off-site areas. Personnel working on the RI/FS will evaluate slopes prior to drilling or excavation to determine if the potential exists for rock slides. If rock slides are probable, another area will be chosen for sampling. In areas where rock slides and unstable slopes exist personnel will stand to the side of the slide area and will not climb on or position themselves under the slope. Areas that are unstable will not be accessed after rain or snow storms. Sloped surfaces greater than 40° require the use of personal fall arrest, fall restraint or positioning system. (CCR T8§1670)

6.6 ALTITUDE SICKNESS

Some people are susceptible to Altitude Sickness. The symptoms of altitude sickness include nausea and dizziness. In order to prevent altitude sickness, arrive at the site well rested and well hydrated. Strenuous activity should be kept to a minimal during the first three days at altitude. Taking aspirin, acetaminophen or ibuprofen may help minimize the affects of altitude sickness. A high-carbohydrate diet is recommended while fatty foods should be avoided. Most importantly, drink large amounts of fluids, especially during winter activities. If symptoms persist, descend to a lower altitude.

6.7 POISONOUS SNAKES, TICKS, INSECTS, PLANTS

Exercise caution while walking through dead weeds and brush during the warm months. Do not enter or reach into dark corners, cracks, holes, etc. Workers need to be observant of obvious nests, e.g., hornets, yellow jackets bees, etc. Inspect body following each shift for the presence of ticks. Avoid bright colored clothing that can potentially attract yellow jackets, bees, and wasps. Yellow clothing is not permitted on site. Permethrin should be sprayed on clothing or Permethrin treated clothing worn if entering an area where there is potential for ticks.

6.8 COLD STRESS

Cold stress resulting in hypothermia (i.e., when the body core temperature drops below 96.8 °F) and frostbite are possible when individuals work for extended periods at ambient temperatures of 30 °F to 40 °F (4 °C) or less. Affected personnel should immediately get out of the cold conditions and warm up in site offices, vehicles, Aspen Seep Bioreactor (ASB) emergency shelter.

6.9 HEAT STRESS

Heat stress monitoring will be conducted when ambient temperatures are greater than 75 degrees. Monitoring will be conducted by assessing heart rates and core temperatures of personnel working in PPE. Temperatures and heart rates will be compared to baselines.

American Conference of Governmental Industrial Hygienists (ACGIH) heat stress indices and work/rest regimes will be determined to prevent heat related illness or injury. See Appendix B for the AMEC Heat Illness Prevention Program.

6.10 UV RADIATION EXPOSURE

Personnel should take care when working outside to cover exposed skin with clothing and use of sunscreen. Appropriate eye protection should be worn when welding to protect against UV radiation.

6.11 EXPLOSIVES

Old sticks of dynamite (i.e., TNT) that appear to be completely empty, may contain residual shock sensitive explosive compounds (nitro glycerin) and should not be touched or disturbed under any circumstances. Do not underestimate the amount of energy contained within a very small amount of explosive material.

Follow these guidelines if you think you have encountered potential explosives:

- Move away from explosives in a foreword motion. Do not handle dynamite;
- Establish an exclusion zone (EZ); the radius of the EZ would be a minimum of 1,000 ft. for a single stick;
- Evacuate all personnel from the EZ;
- Immediately notify the Site Coordinator, the Owner's Representative, the Atlantic Richfield HSSE Oversight and the project manager. The explosive hazard will then be communicated to all site personnel;
- Mark the location of the dynamite clearly on a site map;
- Notify State of California personnel working at the site;
- Contact the Alpine County Sheriff's Office for explosives removal personnel; and
- Notify the Atlantic Richfield EBM.

6.12 NOISE

Hearing protection (earmuffs or earplugs) will be worn when around hazardous noise producing equipment. Noise surveys will be conducted by the Health and Safety Officer as necessary to delineate high noise areas. As a field rule, if you have to raise your voice at one foot from an individual to be heard or yell at arms length from an individual to be heard you should be wearing hearing protection.

6.13 MUSCULOSKELETAL INJURIES FROM LIFTING

No one is to attempt to lift large, heavy (in excess of 50 lbs.), or cumbersome objects without assistance. Additionally, material that requires you to lift in an awkward position or with arms extended out in front should be lifted with a buddy. Appropriate material handling equipment (e.g., drum trucks, hand carts, drum cradles, dollies, lift gates, etc.) is available at the site.

6.14 ENERGIZED EQUIPMENT

Lockout is the minimum precaution required whenever work is to be performed on any equipment that may release hazardous energy, including electrical, mechanical, pneumatic, hydraulic, kinetic, etc. All sources of hazardous energy for the equipment are to be opened and locked in the open or "Off" position. An approved lockout/tagout/binding procedure is required before beginning work.

6.15 SLIPS AND TRIPS

Injuries from slips and trips can be prevented by proper control measures, safe work practices, and keeping work areas free of obstructions. Daily safety meetings will be held during construction and initial start-up, and on a regular basis, as necessary, during subsequent operations to identify specific work areas that are of concern (e.g., unstable structures, slippery surfaces, pipes, steep grades, uneven terrain, etc.) and will specify work practices and controls necessary to avoid or deal with these hazards. Slippery areas at the site will be identified, and if feasible, appropriately controlled through the placement of safety mats, caution signs, and/or by restricting access to these areas with barricades or tape.

6.16 BLOODBORNE PATHOGENS

Trained personnel must exercise universal precautions in such situations where blood is contacted. Precautions include wearing nitrile gloves, and utilizing personal resuscitation masks, proper handling and disposal of "sharps" (needles, etc.) and decontamination, if necessary.

6.17 ACID ROCK DRAINAGE

Avoid contact with Acid Rock Drainage. In the event of contact, flush eyes or exposed skin thoroughly with water for at least 15 minutes and seek immediate medical attention. Do not reuse clothing without laundering. Unfrozen and uncontaminated water must be readily available for decontamination at locations where acid rock drainage is present.

6.18 DIESEL

Wash hands thoroughly after handling diesel fuel and before eating or drinking. Launder clothing if contacted by diesel fuel. Avoid heat, sparks, open flames, and strong oxidizing,

acidic and basic conditions since this product is flammable. Unfrozen and uncontaminated water must be available for decontamination at locations where diesel fuel is present.

6.19 SLUDGE

Avoid contact with sludge without appropriate PPE. In case of skin contact, remove contaminated clothing immediately, flush skin thoroughly with water for at least 15 minutes. Properly dispose of contaminated clothing. In case of eye contact, immediately irrigate with water for at least 15 minutes. If ingestion occurs, do not induce vomiting. Seek immediate medical attention.

6.20 HYDROGEN SULFIDE GAS

Hydrogen sulfide monitors and escape respirators must be available at all times where hydrogen sulfide gas is probable. This includes all work performed in the area immediately around the Channel Underdrain (CUD), Delta Seep (DS), DS Mid-Tank, AS weir, the AS Bioreactors, Bioreactor manholes, and all confined spaces at the site, In case of hydrogen sulfide gas inhalation, move to fresh air and provide oxygen or cardiopulmonary resuscitation (CPR) if needed. Seek immediate medical attention.

6.21 OTHER CONTRACTOR RELATED HAZARDS

Many of the work areas at Leviathan will have more than one contractor working. Overlapping tasks can cause many hazards. Management of these hazards must be proactive and documented on JSA's. If another contractor is working in the vicinity of AMEC personnel, the potential hazards that they create must be documented on the JSA for that activity and discussed with the other contractor to possibly minimize the hazards.

6.22 DRILLING OPERATION HAZARDS

It is the HSO's responsibility to ensure that each drill rig operator has the prescribed task training and is proficient in its operation before drilling can commence. In addition, the following guidelines should be followed:

- Use caution around drill rig;
- Carefully position drill rig to avoid unstable slopes and overhead powerlines;
- Barricade the area around the rig to prevent unauthorized personnel from accessing the operation area;
- Heed all caution, warning and danger decals posted on the machine;
- Do not exceed load limits of the rig;

- Ensure the drill rig operator has the outriggers down and has positioned the rig on even terrain;
- Place timbers under outriggers as necessary to spread the load;
- Set outriggers prior to raising mast;
- When the rig must be operated on sloped surfaces, always place the machine parallel to the surface; do not exceed manufacturer recommendations on operating equipment on slopes;
- Avoid pinch points and overhead hazards;
- Avoid the point of operation areas of the rig;
- Stay clear of rotating auger, no hands, feet or any body part to be near rotating equipment;
- Stand upwind from drill rig activities;
- Use long handled shovels to clear away cuttings when drilling has stopped;
- Keep work surfaces dry;
- Do not conduct work on the rig at a height of 6 ft. without fall arrest equipment;
- Inspect the drill rig at least daily for structural damage (missing guards, fluid leaks);
- Do not move drill rigs with the mast extended;
- Lower the mast during high wind or lightening storms;
- Shut off the rig and lock-out prior to performing maintenance on the unit;
- Do not make modifications to the rig;
- Do not wear loose clothing while operating or collecting samples near the rig;
- Check and test all safety devices (kill switches) at least daily and preferable at the start of each shift. Drilling should not be permitted until all emergency shut-down systems are working correctly;
- Wear the minimum site PPE;
- Earplugs should be worn during drilling operations;
- Approach the drill rig from the side so the operator can see you;
- Don't grab for falling objects-let them go;
- Learn where the kill switch is and how to operate it; and
- Always ensure utility locates are completed prior to drilling.

6.23 GEOPROBE OPERATION HAZARDS

Truck mounted Geoprobe or drive point technology systems have many built-in safety features, however the following precautions should always be taken around Geoprobes:

- Ensure that the Geoprobe carrier vehicle has the parking brake set and the engine shut off;
- Heed all caution, warning and danger decals posted on the machine;
- Feet should always be kept clear of the probe foot;
- Hearing protection should be worn by all personnel near the Geoprobe;
- Personnel should be aware of the location of the emergency kill switch;
- Ensure that all personnel are clear of the machine before starting the Geoprobe engine;
- The machine will not be moved with the probe cylinder or winch mast extended;
- When operating the unit on sloped surfaces, always place the machine parallel to the surface;
- Position the machine with the control panel upslope whenever possible;
- Operators should stand on the control panel side of the machine. Never reach across the probe assembly to manipulate the controls;
- Never place hands on top of the tool string while raising or lowering the hammer;
- Never move the probe assembly while anyone is in physical contact with the tool string;
- Use caution when probing on loose or soft surfaces. Reduced weight on the rear wheels may allow the carrier vehicle to shift or slide;
- Limit the rate at which the hammer is lowered while advancing the tool string to avoid raising the probe foot more than approximately 6 inches off the ground surface;
- Never raise the machine foot more than a few inches from the ground surface with the probe cylinder and/or the winch mast fully extended;
- Always place the machine foot firmly on the ground when pulling tools from the subsurface;
- Shut off the engine and lock-out prior to performing maintenance on the unit;
- Do not make modifications to the machine;
- Do not wear loose clothing while operating or collecting samples near the Geoprobe; and
- Avoid hydraulic fluid leaks. Pressurized fluid may be injected in the skin resulting in severe injury.

6.24 BEARS

Black and golden bears are common at the site and are even more likely to be present in off-site remote locations where RI/FS work will be completed. Personnel should take the following precautions in areas where bears are likely:

- Avoid surprising bears at close range. Make your presence known, particularly where the terrain or vegetation makes it hard to see. Make noise, sing, talk loudly, or wear a bell;
- Travel with a group. Groups are noisier and easier for bears to detect.;
- Avoid working in off-site areas at dawn or dusk, because bears tend to be more active at that time;
- Be alert to signs that bears are in the area including rub trees, diggings, scat, and tracks;
- Carry a kit with an air horn and bear spray at all times during RI/FS activities;
- If you encounter a bear, walk slowly to the vehicle, but do not turn your back to the bear, and
- If the bear persists in the area, use the air horn to scare it away.

6.25 MOUNTAIN LIONS

Mountain lions also live in the areas near the site and are more likely to be encountered in the off-site areas where RI/FS work will take place. However, mountain lions are more scared of humans than bears and are rarely ever seen. Use the same precautions listed above for mountain lions, but if you encounter one:

- Do not run, mountain lions will chase you;
- Make yourself large and aggressive looking. Open your jacket, raise your arms, throw stones, or branches. Speak slowly, firmly and loudly to the mountain lion;
- Do not turn away from the mountain lion and do not crouch down; and
- If attacked, try to remain standing with your arms over your neck.

6.26 HUNTING ACTIVITIES

Areas around the mine site are active during hunting season. The following are listed Open season dates for hunting in Alpine County.

- Birds – September 13- January 25;
- Squirrels – first Saturday in August to last Sunday in January;
- Rabbits – July 1 to the last Sunday in January;
- All other mammals (deer, bear) – third Saturday in September for 44 consecutive days.

Shooting is allowed ½ hour before sunrise to ½ hour after sunset Gunshots can still be heard even if it isn't hunting season. If gunshots are heard, use the air horn to signal your presence. If gun shots persist, immediately leave the area until gunshots are no longer heard.

6.27 ACTIVITIES WITHIN MOUNTAINOUS AND FORESTED AREAS

When you're out in the woods one of the best ways you have of avoiding trouble is to stay alert. The more you notice about what's going on around you, the more likely you are to be able to spot trouble before it starts. The following is a list of items to watch out for when entering mountainous and forested areas.

- **Blocked Roads:** If faced with roads or areas blocked with downed trees and limbs don't try to pick up more weight than you can handle. Use equipment to do the job. Avoid the area if possible.
- **Dead Trees and Fallen Debris:** Sometimes the trees that have died but are left standing can fall without warning and very little sound. If these trees are within your work area, mark them with colored tape and make sure all workers in the area are aware of and stay away from the fall radius of these types of trees. Stay away from getting near random piles of trees downed by storms since these piles can be very unstable. If the debris shifts, you might become injured or entrapped.
- **Trails:** You should walk trails leading to work areas and remove hazards such as brush, limbs, small trees, spears, and overhanging logs to avoid accidents. Leaving these hazards on the ground, or trying to walk or drive around them, could lead to accidents and problems later on.

- **Check for stinging or biting insects or animals**. Learn what sort of habitats those sorts of animals like and make note of any that are in the same area as you. The consequences of not taking an extra moment to scan the area for potential hazards can be painful.

7.0 TRAINING AND MEDICAL MONITORING REQUIREMENTS

7.1 AMEC TRAINING REQUIREMENTS

AMEC personnel involved in this project shall be provided with appropriate health and safety training and briefed on expected local site conditions and the tasks that they will be performing. More information on the content of each training course is available in the Leviathan Mine Site HSSE Program Document.

The following courses are the required training for work at the site for AMEC personnel:

- Before You Go – Site Access Overview;
- 40 Hour Hazardous Waste Operations Training;
- Annual 8 Hour Hazardous Waste Refresher Training;
- 8 Hour Hazardous Waste Supervisor Training (required only for personnel in a supervisory role);
- Daily Tailgate Safety Meeting;
- Defensive Driver Training with hands on driver evaluation;
- Authorization to Work Training (for people filling out ATW's); and
- Permit Writer Training (for people filing permits).

The following additional training could be required depending on what specific activities personnel perform on site.

- Fall Protection Training;
- Control of Work Training;
- Traction Training;
- Snowmobile Training;
- Respirator Training;
- PPE Training;
- Hazard Communication Training;
- Bloodborne Pathogens Training;
- Confined Space Training;
- Hydrogen Sulfide Training;
- Spill Response and Clean up;

- Heat Illness Prevention Program;
- Excavation Competent Person Training;
- Lock-Out/Tag-Out Training; and
- Fire Extinguisher Training.

All training records for employees will be kept on site and in the Master Leviathan Health and Safety File in the AMEC Rancho Cordova office. The Health and Safety Officer is responsible for verifying that employee training documentation is complete and current before the employee begins work.

7.2 VENDOR PERSONNEL TRAINING REQUIREMENT

Vendors requiring access to the site to deliver equipment, make deliveries, pick up items and other activities will be required to have the following training:

- Before You Go – Site Access Overview

If a vendor must access restricted areas that require Hazardous Waste Operations Training, then the following training certificates must be filed with the Health and Safety Officer:

- 40 Hour Hazardous Waste Operations Training; and
- 8 Hour Hazardous Waste Refresher Training.

Additionally, other training may be required depending on the specific activities of the vendor.

7.3 EMERGENCY CONTACT FORM

All AMEC or vendor personnel will fill out an Emergency Contact Form, located in Appendix B, and turn it into the Site Administrator. This form will identify who to contact in case of emergency and also documents any allergies that may affect their work on site.

7.4 MEDICAL EVALUATION REQUIREMENTS

AMEC employees working on the site more than 30 days per year will receive a baseline and annual comprehensive medical evaluation to qualify for hazardous waste site assignments and to monitor work-related illness or contamination. Personnel working on the site less than 30 days per year will receive a baseline and periodic exams (less frequently than annually).

Any employee who suffers an illness or injury that imposes a medical restriction on his or her job duties must have a physician's release statement indicating that he or she is fit for duty

before the Health and Safety Officer will permit that employee to return to full duty. This release must be issued by the treating licensed health care provider

8.0 AIR MONITORING

8.1 PERIODIC MONITORING

Monitoring will be performed by the Health and Safety Officer on an as-needed basis depending on the scope of work being performed. The purpose of the monitoring will be to determine if a chemical may be present that would necessitate engineering and administrative controls and if necessary upgrading the protection level. Air monitoring that could be performed includes:

- Volatile organic compounds;
- Particulate (nuisance dust);
- Flammable gas;
- Oxygen;
- Hydrogen sulfide; and
- Substance specific monitoring.

Action levels for the specific task being monitored will be communicated to employees during Site Safety meetings. See Table 5 for more information on PEL's, action levels and PPE information. Documentation of action levels should be included on an ATW or other permit.

8.2 HYDROGEN SULFIDE MONITORING

Hydrogen sulfide monitors shall be worn by one person per crew at all times where hydrogen sulfide gas is probable, this includes all areas around the Aspen Bioreactors, any confined space at the site, the area immediately around the CUD capture system, and the area immediately around the Delta Seep capture tank. The person wearing the hydrogen sulfide monitor should be the employee within closest proximity to the source of hydrogen sulfide. Additionally, escape respirators should be readily available in these areas.

If the H2S monitor should alarm (at 5 parts per million [ppm] H2S or more), the area should be evacuated diagonally and upwind of the current wind direction. (A wind direction flag will be visible at these areas). The Health and Safety Officer will be notified and proper emergency response will be taken.

Table 5

Air Monitoring

Constituent	Acceptable Range	PEL	Action Level	Action
Volatile organic compounds	< 5 ppm	Determined by the specific compound detected.	2.5 ppm	Discontinue operations, upgrade to Level C and use colorimetric tubes to determine what specific organic compounds are present. Reevaluate work conditions and modify JSA.
Particulates (nuisance dust)	< 1.5 milligrams per cubic meter (mg/m3)	15 mg/m3	1.5 mg/m3 sustained for 15 minutes	Discontinue dusty operations or apply water as dust control.
Flammable gas	<10% LEL	N/A	10% LEL instantaneous reading	Discontinue operations; determine what is producing flammable environment. Use engineering controls to reduce vapors, revise JSA prior to restart of operations.
Oxygen	> 19.5 or < 23.5 O_2	N/A	< 19.5% or > 23.5%	Discontinue operations, immediately evacuate confined spaces. Determine what is causing an oxygen deficient or enriched environment. Use engineering controls to ventilate area or space. Revise JSA to reflect new conditions before resuming operations.
Hydrogen Sulfide	< 10ppm	Cal/OSHA PEL- 10 ppm	5 ppm	Discontinue operations, evacuate area. Use H_2S escape respirators as necessary. Revise JSA
Substance specific-detector tubes	Dependent on contaminant	Dependent on contaminant	1/2 PEL	Upgrade to level C. Revise JSA

8.3 INSTRUMENT CALIBRATION

Before each use, air monitoring equipment will be bump tested according to the manufacturers' instructions and documented on a field form, which will be maintained in the on site filing system. Regular calibration of the instrument will be completed on the manufacturer's recommended schedule and documented. Calibration records will be maintained in the site filing system.

Direct reading instrument bump tests should be conducted under the approximate environmental conditions the instrument will be used (temperature, humidity, altitude).

If an instrument is found to be inoperative or suspected of giving erroneous readings, the Health and Safety Officer shall be responsible for immediately removing the instrument from service and obtaining a replacement unit.

8.4 UNKNOWN SITUATIONS

If unknown chemicals or contamination is encountered, operations will cease until the situation is evaluated. The Health and Safety Officer will contact the Atlantic Richfield HSSE Oversight and Project Manager to evaluate the situation. Operations will only be resumed if they can be accomplished in a safe manner. Management of Change documentation will be completed prior to moving forward with the task.

9.0 DECONTAMINATION

Contamination prevention is the first step of decontamination. Limiting the exposure of personnel, materials, and equipment to contaminants will minimize contamination and reduce decontamination. Disposable PPE serves as a protective layer that can be removed and disposed; zip-lock bags and plastic sheeting will be used to protect materials that are difficult to decontaminate and must be removed from controlled areas. This method will be used on items such as cameras, radios, certain monitoring instruments, notebooks, maps, papers, etc.

Procedures to be followed for equipment and personnel decontamination are described below.

9.1 EQUIPMENT DECONTAMINATION

Equipment that comes in contact with potentially contaminated soil, sludge, or water, including equipment used for drilling, soil sampling, sludge related activities and water sampling, shall be cleaned before and after each use on this project. Decontamination will be completed in a designated area with a high pressure-washing device and/or scrubbed with a detergent/water solution under pressure and rinsed with potable water, as necessary. Sampling equipment will be washed with a detergent (e.g. Alconox) and water solution, followed by potable water rinse. All decontamination fluids will be collected in drums and stored for proper disposal.
Equipment that cannot be decontaminated must be disposed of as contaminated materials. Appropriate PPE for decontamination activities shall be documented on a JSA and will include a face shield, rubber apron, rubber boots, and gloves.

9.2 PERSONNEL DECONTAMINATION

The sequence for personnel decontamination for field activities is described below. Decontamination will occur at a temporary job site decontamination pad.

- If contamination is present, wash PPE in detergent or other appropriate solution and rinse in clean water;
- Remove disposable overboots (if used). Remove outer gloves;
- Wash chemical-resistant boots with detergent solution and rinse with clean water;
- Remove coveralls. Starting at the neck, roll the coveralls off from the inside out and down past the boots. Take care to prevent the release and dispersion of dusts or prevent contact with decontamination water that may have accumulated on the coveralls. Do not contaminate clothing inside the coveralls during removal;
- Remove respirator. Remove cartridges and dispose. Clean and disinfect the respirators and place into a plastic bag for storage, after thoroughly dry;
- Place disposable PPE in a bag or drum for disposal;

- Remove liner gloves; and
- Thoroughly wash hands and face.

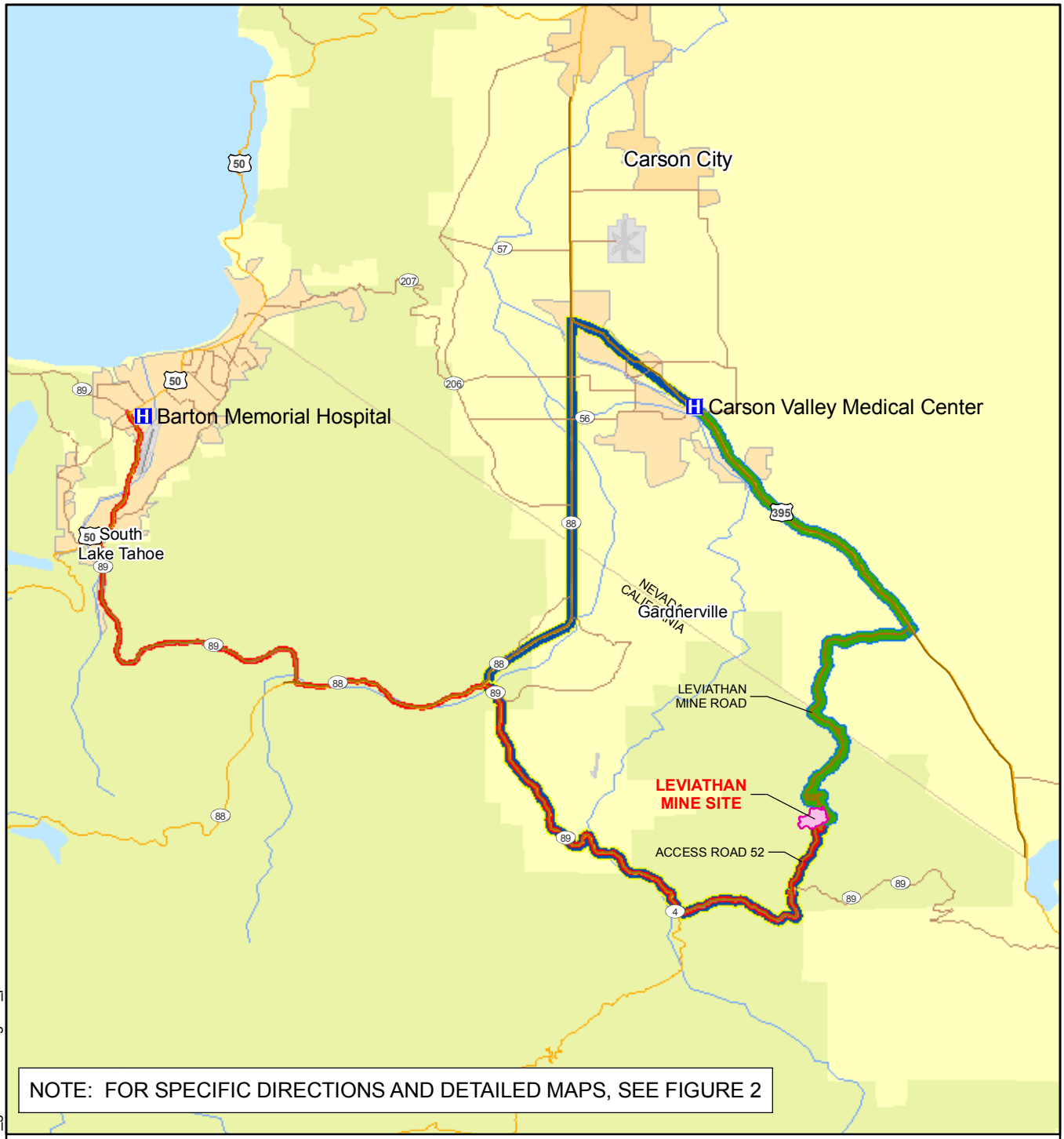
Contaminated materials and decontamination fluids will be disposed of in accordance with applicable state and federal regulations.

Table 6

HASP Amendment Record

DATE	CHANGE

FIGURES



Explanation

★ Site location

N

0 5 10 Miles

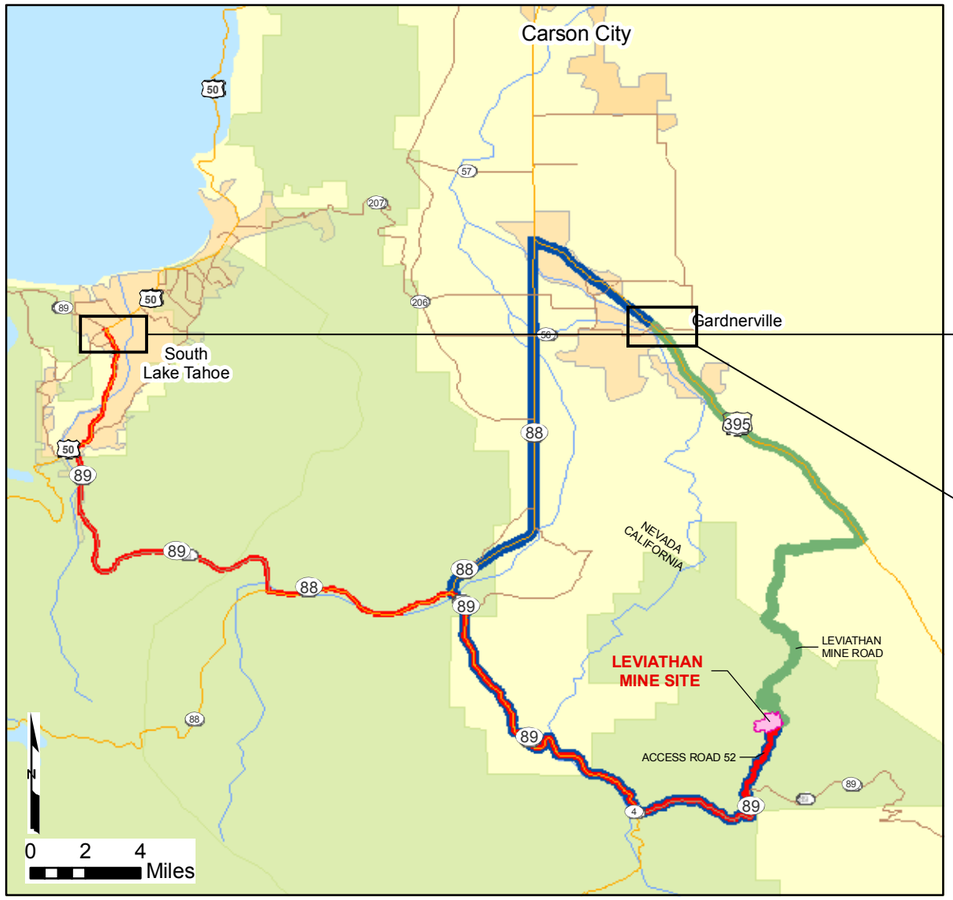
EMERGENCY ACCESS ROUTES
Leviathan Mine Site
Alpine County, California

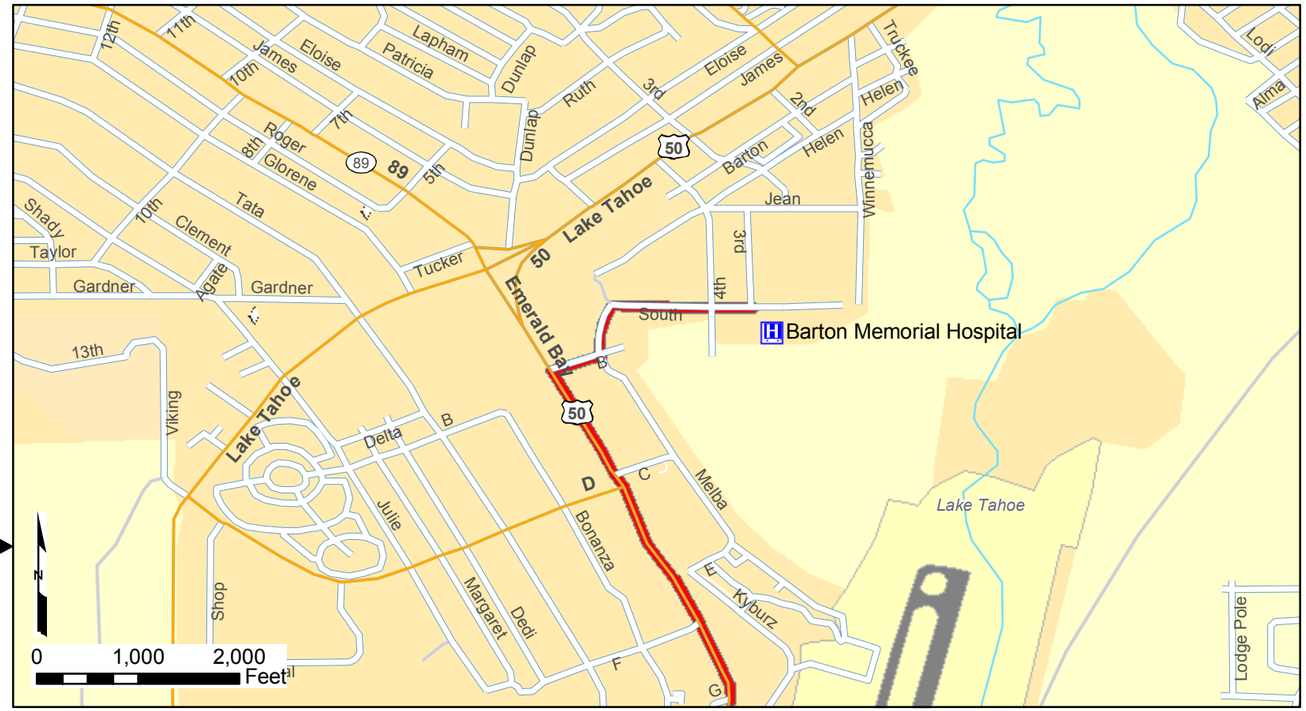
By: CBT	Date: 4/2/2009	Project No. 13091A
AMEC Geomatrix	Figure 1	

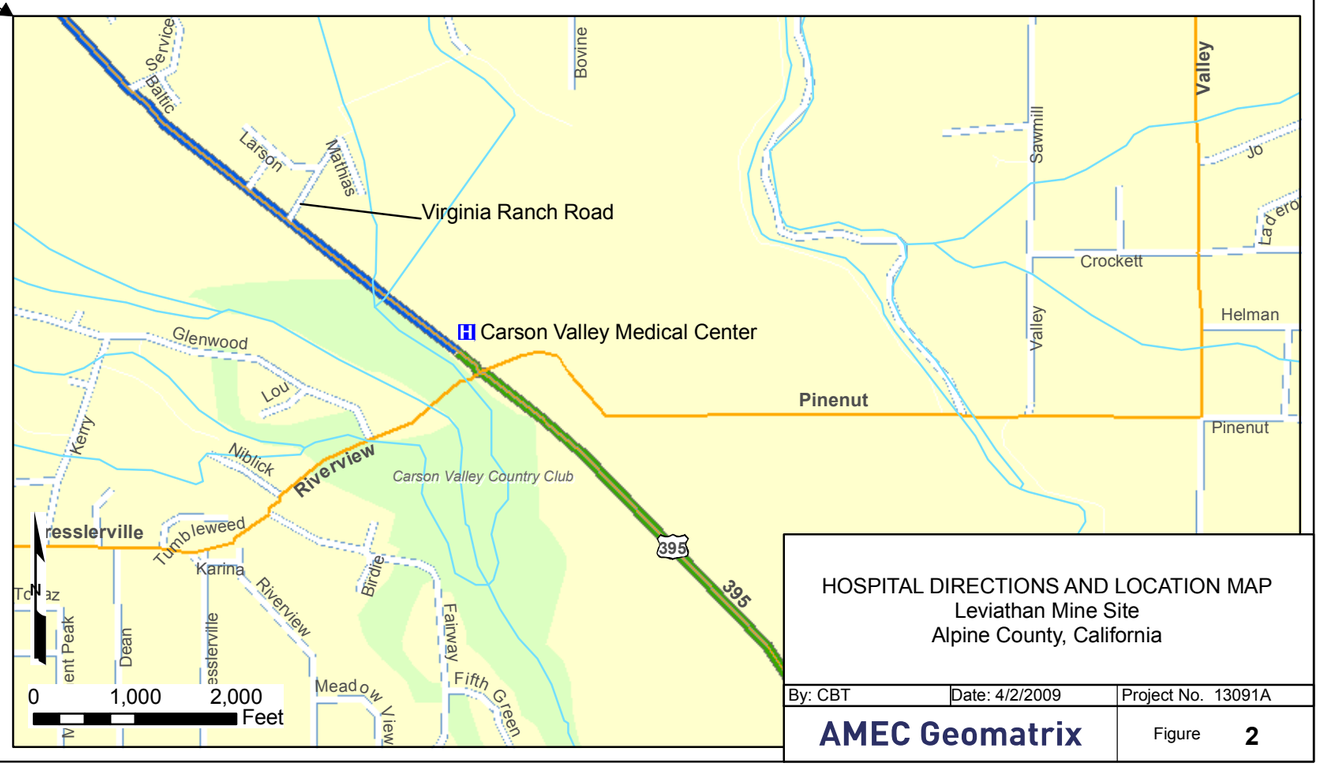
File path: Q:\CorpStndrs\MASTERS\GDS\Titleblocks\amec_geomatrix\arcgis\A_portrait.mxd

DIRECTIONS TO BARTON MEMORIAL HOSPITAL, SOUTH LAKE TAHOE, CA:

Route is highlighted in red:
Take Forest Service Road 10052, approximately 2.6 miles, south to CA State Route 89, and turn right. Go approximately five miles to State Route 89/4 Junction. Turn right on State Route 89 to Markleeville and proceed to South Lake Tahoe. In South Lake Tahoe, continue on SR 89 past F, E, and C Streets, and turn right on South Avenue. Follow the hospital signs and continue past 4th Street. The hospital is on the right side.







DIRECTIONS TO CARSON VALLEY MEDICAL CENTER, GARDNERVILLE, NV:

Primary Route (highlighted in green):
The primary route to the Carson Valley Medical Center, NV is as follows: take the Leviathan Mine Road to Interstate Highway (HWY) 395 and turn left and proceed to Gardnerville. Proceed to the first stop-light in town. The crossroad is Riverview Road to the left and Pine Nut Road to the right. The medical center is just past the stop-light on the right side of HWY 395.

Alternate Route (highlighted in blue):
Pending driving conditions on Leviathan Mine Road, an alternate secondary route to the Carson Valley Medical Center, NV is as follows: take Forest Service Road 10052, approximately 2.6 miles, south to CA State Route 89. Go approximately 10 miles and turn right on NV State Route 88 north and travel appx. 13 miles to Minden. Turn right onto HWY 395 and proceed to Gardnerville. Drive past Virginia Ranch Road (on the left). The medical center is on the left side of HWY 395, just prior to the stop light at Riverview Road to the right and Pine Nut Road to the left.

HOSPITAL DIRECTIONS AND LOCATION MAP
Leviathan Mine Site
Alpine County, California

By: CBT	Date: 4/2/2009	Project No. 13091A
AMEC Geomatrix		Figure 2

File path: K:\Projects\Leviathan_13091\GIS_Maps\HS_Maps\Figures_20090402\Figure4_HospitalDirectionsandLocMap.mxd

File path: K:\Projects\Leviathan_13091\GIS_Maps\HS_Maps\Figures_20090402\Figure3_EvacMap.mxd

EVAC PLAN "C"
Leviathan Mine Road @ HWY 395
Lat: 38.80306 N
Long: 119.6072647 W

Pond 4 Helicopter Landing Pad
Latitude 38.70674 N
Longitude 119.66155 W

HDS Process Building

Pond 4

Leviathan Mine Road

EVAC PLAN "D"
Aspen Seep Upper Shed
Lat: 38.71111 N
Long: 119.65318 W

EVAC PLAN "A"
Water Treatment Facility
Lat: 38.706579 N
Long: 119.662539 W

Leviathan Mine Site

ST HWY 89

Forest Service Road 10052

ST HWY 89

ST HWY 89

EVAC PLAN "B"
Heenan Lake Parking Lot
Lat: 38.6562096 N
Long: 119.6646157 W

ST HWY 4

LEGEND

APPROXIMATE MINE BOUNDARY
EMERGENCY ACCESS ROAD
MUSTER POINT

N

0 5,000 10,000 Feet

NOTES:
1. HYDROGRAPHY DIGITIZED FROM USGS 7.5' SERIES DRG.

EMERGENCY EVACUATION MUSTER POINTS
AND HELICOPTER LANDING AREA MAP
Leviathan Mine Site
Alpine County, California

By: CBT	Date: 4/2/2009	Project No. 13091A
AMEC Geomatrix		Figure 3

APPENDIX A

Forms

REMEDIATION MANAGEMENT - AUTHORIZATION TO WORK

PRE-TASK HAZARD REVIEW

TASK	EQUIPMENT
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

Chemical / Products / Material

1. ☐ Hydrogen Sulfide	2. ☐ Benzene	3. ☐ Diesel	4. ☐ Hydrocarbon	5. ☐ Acid	6. ☐ Lead
7. ☐ Carbon Monoxide	8. ☐ Asbestos	9. ☐ Caustic	10. ☐ Gasoline	11. ☐ Heavy Metals	
12. ☐ NORMS	13. ☐ Other:				

Hazardous Energy

19. ☐ Radiation	20. ☐ Electric	21. ☐ Pneumatic	22. ☐ Thermal-Steam
23. ☐ Hydraulic	24. ☐ Pressure	25. ☐ Mechanical	26. ☐ Fluids & Gases
27. ☐ Gravitational		28. ☐ Other:	

Other Potential Hazards

34. ☐ Walking / Working Surfaces		35. ☐ Traffic	36. ☐ Working at Heights	37. ☐ Pinch Points
38. ☐ Weather	39. ☐ Noise	40. ☐ Grinding	41. ☐ Heavy equipment	42. ☐ Sharp Edges
43. ☐ Hot Work	44. ☐ Security	45. ☐ Congested Area		46. ☐ Overhead Work
47. ☐ Body Position	48. ☐ Static Posture	49. ☐ Wind	50. ☐ Rotating Equipment	51. ☐ Lifting
52. ☐ Housekeeping	53. ☐ Spills	54. ☐ Underground Utility		55. ☐ Slopes and Terrain
56. ☐ Confined Space	57. ☐ Vibration	58. ☐ Ground Disturbance		59. ☐ Rigging
60. ☐ Vehicle Safety – Driving		61. ☐ Repetitive Motion		62. ☐ Container/Drum Labels
63. ☐ Waste	64. ☐ Heat/Cold Stress	65. ☐ Hand & Power Tools		66. ☐ Fitness to Work
67. ☐ Open Pipe	68. ☐ Boom Swing	69. ☐ Lighting	70. ☐ Exposure to poisonous plants / animals / bugs	
71. ☐ Overhead Electrical		72. ☐ Auger/Drill Stem		73. ☐ Other:

Required Safety Precautions

79. ☐ Safety Glasses	80. ☐ Goggles	81. ☐ Face Shield	82. ☐ Ear Plugs	83. ☐ High Visibility Clothing
84. ☐ Hard Hat	85. ☐ Escape Pak	86. ☐ Steel Toe Shoes	87. ☐ Ear Muffs	88. ☐ Respirator:
89. ☐ FRC	90. ☐ Supplied Air	91. ☐ Topical Creams / Repellents		92. ☐ Gloves:
93. ☐ Fire Watch	94. ☐ Drip Pans	95. ☐ Plastic Sheeting	96. ☐ Vac Truck	97. ☐ Fall Protection
98. ☐ Barricade	99. ☐ Fire Blanket	100. ☐ Upwind Areas Checked		101. ☐ Warning Signs
102. ☐ Flag Off Area	103. ☐ Life Lines	104. ☐ Fire Extinguisher at Jobsite		105. ☐ Sampling Prohibited
106. ☐ Seal Manholes, Sewers, and Catch Basins		107. ☐ Communication Method		108. ☐ Welding Shields
109. ☐ Continuous Monitoring		110. ☐ Wet Down Area		111. ☐ Ladder Tie Off
112. ☐ Tag Lines	113. ☐ Active Site Hazard Communication			114. ☐ Fence Off Area
115. ☐ No Cell Phone	116. ☐ Long Sleeve Shirt	117. ☐ No Smoking		118. ☐ Other:

REQUIRED PROCEDURES

☐ Drilling	☐ MOC	☐ Traffic Control	☐ LO/TO/Blinding
☐ Hoist/Lifting	☐ Journey Hazard Assessment	☐ Ground Disturbance	

REQUIRED PERMITS

☐ Hot Work	☐ Trenching/Excavation	☐ Confined Space	☐ Working from Heights	☐ None

Contractor(s) / Employee(s) Signatures: I have reviewed and understand the conditions of this permit, and its attachments. I will report hazardous conditions or acts identified on this job site to my supervisor and / or BP representative so they can be corrected as necessary.		1.	2.
		3	4.
5.	6.	7.	8.
9.	10.	11.	12.

Onsite Manager: (Print Name)	Date:	Location of Site Work:
Site	Date/Time Issued: am/pm	Date/Time Expires: am/pm
☐ Is HASP onsite?	☐ Is ERP onsite?	☐ Is JSA onsite?
Authorization Signature:		
Exceptions/Comments		

Revision 001, Date: 08/01/05

COMPLIANCE AGREEMENT
LEVIATHAN MINE SITE

I have read and understood the contents of the Geomatrix HASP and agree to abide by its provisions and follow the directions of the Project Manager, Site Coordinator or On-Site Health and Safety Coordinator.

I understand that it is in my best interest to see that site operations are conducted in the safest manner possible; therefore, I will be alert to site health, safety and environmental conditions at all times.

Name	Signature	Date
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		

Geomatrix

Leviathan Project Site

Emergency Contact Information

Date: _____

Employee Name: _____

Office Location: _____

Office Phone #: _____

Home Address: _____

Home Phone #: _____

In case of Emergency, contact:

Name of Person: _____

Relationship: _____

Phone #: _____

Alternate Phone #: _____

Name of Alternate Person: _____

Relationship: _____

Phone #: _____

Alternate Phone #: _____

Allergy Information

Do you have medical conditions or allergies that could affect you at the Leviathan Mine Site:

_____

_____

_____

_____

_____

_____

If yes, do you have medication that you take with you (i.e. epinephrine for bee stings):_____

Doctor's Name and Phone Number:_____

FIELD CHANGE REQUEST (FCR)

Job/Task No:	**FCR No.:**
Task description:	
Affected plan or procedures:	
Requested variation(s):	
Justification:	

Requested by:	**Date:**
Field change authorized by:	**Date:**
Approved by:	**Date:**
Approved by:	**Date:**
Comments:	

Job Safety Analysis Worksheet

Contractor: | Date: | JSA No.:

Coordinator/Supervisor:

Location of worksite:

Description of work:

Field Team:	Name	Name

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.	Stop Work Triggers Identify what will cause you to stop work during this task.

1 – Target number of job steps: six to ten

2 – Codes for Potential Hazards:

Caught Between (CBT)	Contacted By (CB)	Caught On (CO)	Fall To Below (FB)	Overexertion (O)	Struck Against (SA)
Caught In (CI)	Contact With (CW)	Exposure (E)	Fall - Same Level (FS)	Release To (R)	Struck By (SB)

3 – Types of Critical Actions: Administrative Controls, Engineering Controls, PPE, and/or Safe Work Practice / SOP

Job Safety Analysis Worksheet

Contractor:		Date:		JSA No.:	
Coordinator/Supervisor:				Field Team:	Name / Name
Location of worksite:					
Description of work:					

1 – Target number of job steps: six to ten

2 – Codes for Potential Hazards:

Caught Between (CBT)	Contacted By (CB)	Caught On (CO)	Fall To Below (FB)	Overexertion (O)	Struck Against (SA)
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3 – Types of Critical Actions: Administrative Controls, Engineering Controls, PPE, and/or Safe Work Practice / SOP

APPENDIX B

Heat Illness Prevention Program

HEAT ILLNESS PREVENTION PROGRAM

May 12, 2008

Address: Leviathan Mine, California

Contact Person/Program Administrator: Michael Trynor, Health and Safety Officer (HSO)

AMEC Geomatrix (AMEC) employees must work in outdoor environments in support of Leviathan Mine superfund site operations. These procedures will be triggered when the ambient temperature of 80ºF is reached (Atch 1). The procedures can help reduce the risk of work related heat illnesses among our employees.

The HSO or designated representative will monitor the ambient air temperature hourly from the start of the workday. When the Heat Stress Index (HSI) of 80 is reached, actions to focus attention on heat stress prevention will be under taken.

These procedures provide the minimal steps applicable to most outdoor work settings and are essential to reducing the incidence of heat related illnesses. In working environments with a higher risk for heat illness (e.g., during a heat wave, or other severe working or environmental conditions), exercise greater caution and additional protective measures as needed to protect their employees.

I. OVERVIEW AND OBJECTIVES

Employees, who work in outdoor places of employment or on job tasks in other areas at those times when the environmental risk factors for heat illness are present, are at risk for developing heat illnesses if they do not protect themselves appropriately. The objective of this program is employee awareness regarding heat illness symptoms, ways to prevent illness, and what to do if symptoms occur.

This program is based on the California Code of Regulations, Title 8, Section 3395.

II. SCOPE

The AMEC Heat Illness Prevention Program applies to the control of risk of occurrence of heat illness and applies to all outdoor places of employment when the environmental risk factors for heat illness are present.

III. POLICY

It is the policy of AMEC that any employee participating in job tasks when environmental risk factors for heat illness are present will comply with the procedures in this document and in the Injury and Illness Prevention Program.

IV. PURPOSE

To ensure that all employees of AMEC are protected from heat illness while working on job tasks where environmental risk factors for heat illness are present and to establish the minimum requirements for working in this environment.

V. DEFINITIONS

The term “acclimatization” means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for about two hours per day in the heat.

“Environmental risk factors for heat illness” means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the

sun and other sources, conductive hear sources such as ground, air movement, workload severity and duration, protective clothing and personnel protective equipment worn by employees.

The term “heat illness” means a serous medical condition resulting from the body’s inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope, and heat stroke.

“Personal risk factors for heat illness” means factors such as an individual’s age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body’s water retention or other physiological responses to heat.

“Preventative recovery period” means a period of time to recover from the heat in order to prevent heat illness.

The term “shade” means blockage of direct sunlight. Canopies, umbrellas, and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the areas of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

VI. RESPONSIBILITIES

A. The AMEC HSO is responsible for:

1. Preparing and maintaining a written program, which complies with the requirements of applicable Cal/OSHA requirements.
2. Assisting with providing training to all potentially impacted employees and their supervisors on the risks and prevention of heat illness, including how to recognize symptoms and respond when they appear.

B. Managers, Supervisors, Superintendents, Foremen are responsible for:

1. Identifying all employees who are required to work outdoors where potential heat illness could occur and identifying the supervisor of the employees.
2. The Health and Safety Officer, or designee, will ensure all subcontractors are aware of and either have their own Heat Illness Prevention Program or follows our program.
3. Assuring that adequate water and shade are available at a job site at all times.
4. Ensuring that all affected employees have received proper training on heat illness prevention.
5. Ensuring that the requirements in this document are followed.
6. Contacting Emergency Medical Response services to request emergency medical services in the event medical assistance is required.
7. Direct Emergency Medical Response to the work site.

C. Affected employees are responsible for:

1. Complying with the provisions of the Heat Illness Prevention Program, as describe in this document and in the training sessions they attend.
2. Ensuring they notify supervisor/foreman if they do not have adequate drinking water available at all times.
3. Ensuring they know where to go for access to a shaded area to prevent or recover from heat related symptoms.
4. Reporting heat related illness symptoms to the supervisor/foreman.

VII. BASIC REQUIRMENTS

The following basic requirements apply to all employees while working when environmental risk factors for heat illness are present.

1. All employees shall be identified who are required to work where environmental factors for heat illness are present.
2. Training shall be provided for all potentially impacted employees working where environmental risk factors for heat illness are present and their supervisors. Training information shall include but not be limited to the

topics listed in the training section of this written program. All potentially impacted employees and supervisors who supervise these employees must be trained on the risks and prevention of heat illness, including how to recognize symptoms and respond when they appear.

3. Drinking water in the quantity of 1 quart per hour (Atch 2) shall be available at all times for each employee for the duration of the entire shift while working outdoors in the heat. Supervisors/foremen shall remind employees to drink frequently and this topic will be addressed at tailgate meetings.
4. Employees shall have access to a shaded area or air-conditioned vehicle (Atch 2) to prevent or recover from heat illness symptoms and where they can take a rest break of at least 5 minutes. The importance of taking rest breaks and recognizing when a preventative recovery period is needed allowing employees to cool shall be addressed at tailgate meetings.
5. Heat Stress Monitoring Techniques

   Site personnel should regularly monitor their heart rate as an indicator of heat strain by the following method: Radial pulse rates should be checked by using fore-and middle fingers and applying light pressure top the pulse in the wrist for one minute at the beginning of each rest cycle. If the pulse rate exceeds 110 beats/minute, the next work cycle will be shortened by one-third and the rest period will be kept the same. If, after the next rest period, the pulse rate still exceeds 110 beats/minute, the work cycle will be shortened again by one-third.
6. In the event an employee feels discomfort from the heat, a preventative recovery period of not less than five minutes is needed to allow the employee to cool down and prevent the onset of heat illness.
7. Supervisors/foremen will ensure, at each worksite, there is a cell phone, radio, or other means of communications to ensure that emergency services can be called. Verification that the cell phone, radio, or other means of communication are functional at all worksites shall be carried out prior to each shift.

VIII. TRAINING

A. LEVELS OF TRAINING

Training shall be provided for employees working on job tasks where environmental risk factors for heat illness are present, and training for their respective supervisors.

B. EMPLOYEES

All employees working on job tasks where environmental risk factors for heat illness are present shall receive instruction before being assigned to work tasks. Training topics shall include the following:

1. Environmental and personal risk factors for heat illness.
2. Procedures for identifying, evaluating, and controlling exposures to the environmental and personal risk factors for heat illness.
3. Employees who experience excessive sweating require frequent consumption of small quantities of water, 1 quart (3 ounces) per hour when working in extreme conditions of heat.
4. Importance of acclimatization.
5. Different types, signs, and symptoms of heat illness. (Atch 3)
6. Importance of immediately reporting symptoms or signs of heat illness in themselves or in coworkers to their supervisor.
7. Procedure for responding to symptoms of possible heat illness, including how emergency medical services will be contacted and provided, should they become necessary.

C. SUPERVISORS OF AFFECTED EMPLOYEES

Supervisors or their designees shall receive training on the following topics prior to being assigned to supervise outdoor employees.

1. Information as detailed above in employee training requirements.
2. Procedures that supervisors shall follow to implement the provisions of this program.

3. Emergency procedures specific to the supervisor shall follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

IX. PROGRAM AUDITS

A. RESPONSIBILITIES

Supervisors and the AMEC HSO shall perform audits of the Heat Illness Prevention Program.

B. FREQUENCY

Audits of the Heat Illness Prevention Program shall be performed annually

C. CONTENTS

1. The audit shall review the program to ensure that heat illness prevention procedures are in place and are being properly followed.
2. The audit process and findings shall be documented.

X. RECORDS

All training, audit, and other records prepared in association with the Heat Illness Prevention Program shall be managed in accordance with the requirements of the AMEC Injury and Illness Prevention Program.

Apparent Temperature – Heat Stress Index (HSI)

Environmental Temperature °F

Relative Humidity %										
	70	75	80	85	**90**	**95**	**100**	**105**	**110**	**115**
0%	64	69	73	78	83	87	**91**	**95**	**99**	**103**
10%	65	70	75	80	85	**90**	**95**	**100**	**105**	**111**
20%	66	72	77	82	87	**93**	**99**	**105**	**112**	**120**
30%	67	73	78	84	**90**	**96**	**104**	**113**	**123**	**135**
40%	68	74	79	86	**93**	**101**	**110**	**123**	**137**	**151**
50%	69	75	81	88	**96**	**107**	**120**	**135**	**150**	
60%	70	76	82	**90**	**100**	**114**	**132**	**149**		
70%	70	77	85	**93**	**106**	**124**	**144**			
80%	71	78	86	**97**	**113**	**136**				
90%	71	79	88	**102**	**122**					
100%	72	80	**91**	**108**						

Category	Apparent Temperature (°F)	Dangers
Extreme Danger	Greater than 120	Heat stroke imminent
Danger	105-120	Heat exhaustion likely
Extreme Caution	90-105	Heat cramps, exhaustion possible
Caution	80-90	Exercise more fatiguing than normal

*Apparent temperature, Heat Stress Index (HSI): A measure of how hot it really feels in degrees Fahrenheit when relative humidity is factored with the actual air temperature. This chart has been adapted from the National Weather Service's "heat index" and an adjustment has been made with the apparent temperature categories to match more closely working in full sunshine. This guideline should be followed for employees not wearing protective clothing. **Five degrees should be added to the environmental temperature when wearing protective clothing.**

I. PROVISION OF WATER

Water is a key preventive measure to minimize the risk of heat related illnesses.

- Employees will have access to potable drinking water. If the supply of water is not plumbed or otherwise continuously supplied, bottled water will be provided. A sufficient quantity of water will be on hand at the beginning of the work shift to provide one quart (32 ounces) of water per employee of each hour of the shift.
- Project Managers/Supervisors will encourage employees to frequently consume small quantities of water under **all** weather conditions and up to 4 cups per hour (32 ounces), when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties.
- Project Managers/Supervisors will maintain sufficient supplies of water in their vehicles to replenish levels when more than half the supplies on hand at the start of the shift for each team has been consumed. Project Managers/Supervisors will monitor water containers every 60 minutes, and employees are encouraged to report to supervisor/foreman low levels or dirty water.
- When drinking water levels within a container drop below 50%, the water shall be replenished immediately; or water levels should not fall below the point that will allow for adequate water during the time necessary to effect replenishment.
- Project Manager/Supervisor will provide frequent reminders to employees to drink frequently, and more water breaks will be provided.
- Every morning there will be short tailgate meetings to remind workers about the importance of frequent consumption of water throughout the shift.
- Place water containers as close as possible to the workers, not away from them and preferably in shaded areas away from direct sunlight.
- Noise making devices, such as double blasts of vehicle horns, may be used to remind employee’s to take their water break. Insure the signal is briefed during the tailgate meeting and that all employees understand the signal.

II. ACCESS TO SHADE

Access to rest and shade or other cooling measures are important preventive steps to minimize the risk of heat related illnesses. These are especially critical when ambient temperatures are at or above 80°F and/or employees are not acclimatized.

Employees suffering from heat illness or believing a preventative recovery period is needed, will be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall be permitted at all times.

- If air conditioned vehicles are not available at a site the Project Manager/Supervisor will set-up an adequate number of; umbrellas, canopies or other portable devices, at the start of the shift and will locate them close to the crew, within 100 feet.
- Employees have access to office or construction trailer, other building, or vehicles with air conditioning.

Every morning there will be short tailgate meetings to remind workers about the importance of rest breaks and the location of shade.

Response Procedures to Heat-Related Illnesses

The following information will be available at each job site where heat-illness hazards are present. Driving directions to the work site will also be available at the job site.

Heat-Related Illness	Signs and Symptoms	First Aid
Sunburn	- Red, hot skin - May blister	- Move to shade, loosen clothing - Apply cool compresses of water
Heat Rash	- Red, itchy skin - Bumpy skin - Skin infection	- Apply cool water or compresses - Keep affected area dry - Control itching and infection with prescribed medication
Heat Cramps	- Muscle cramps or spasms - Grasping the affected area - Abnormal body posture	- Drink water or sport drinks - Rest, cool down - Massage affected muscle - Get medical evaluation if cramps persist
Heat Collapse (Fainting)	- Rapid & unpredictable lose of consciousness	- Acclimatize to heat
Heat Exhaustion	- High pulse rate - Extreme sweating - Pale face - Insecure gait - Headache - Clammy and moist skin - Weakness - Fatigue - Dizziness	- Move to shade and loosen clothing - Initiate rapid cooling - Lay flat and elevate feet
Heat Stroke	- Any of the above but more severe - Hot, dry skin (25-50% of cases) - Altered mental status with confusion or agitation - Can progress to loss of consciousness and seizures (syncope) - Can be fatal.	- Call 911 - Immediately remove from work - Start rapid cooling - Lay flat and elevate feet - If conscious give sips of water - Monitor airway and breathing – administer CPR if needed