

Evaluated by: **???????**

Date: April, 2009

TASK NAME

BACK FILLING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves back filling

- N/A

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

- High-visibility reflective safety vest.
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.
- Protective chemical gloves, coveralls (tyvek[®]), and rubber boots/booties when potential exists for contact with impacted materials.
-

- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.
- Ear plugs/muffs if necessary.
- Coast Guard approved life vest or jacket.
- Safety harness (tied off appropriately) for fall protection when working near steep slopes along stream.

- Manual lifting
- Slip, trip, and falls
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Heavy equipment
- Electrical
- Noise
- Dust
- Overhead hazards
- Pinch points

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 201, General Safety Rules
- ENV 515, Excavation
- ENV 501, Manual Materials Handling
- ENV 505, Manual Hand Tools
- ENV 520, Heavy Earth-Working Equipment
- ENV 530, Working On/Near/Over Water

1. Evaluate surrounding work area for additional hazards that may be present.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel.
3. Always ensure the driver of excavation equipment can see you at all time times. Never assume he can see you. Always yield to heavy equipment.
4. Clear utilities (underground and overhead) in the immediate work area or travel route prior to positioning.
5. Use water trucks or spray for dust suppression.
6. Fall protection when working on steep banks (if needed).

MONITORING PROCEDURES

Monitoring is not needed for the specific task.

Evaluated by: **???????**

Date: April, 2009

TASK NAME

CLEARING AND GRUBBING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves clearing and grubbing operations at the initial start of work on the property and as needed as work progresses. Heavy equipment, chain saws, and possibly wood chippers will be used for these operations.

· N/A

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

- High-visibility reflective safety vest.
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.
- Leather chaps

- Face shield
- Tyvek® if potential exists for contact with impacted materials.
- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.
- Ear plugs/muffs

- Manual lifting
- Slip, trip, and falls
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Heavy equipment
- Electrical
- Noise
- Cuts/lacerations
- Falling/flying debris

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 520, Heavy Earth-Working Equipment
- ENV 525, Chainsaw Operations
- ENV 533, Wood-Chipping Equipment

1. Evaluate surrounding work area for additional hazards that may be present.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel.
3. Determine where trees/limbs will fall prior to cutting.
4. Identify areas of poison ivy prior to beginning cutting operations.

MONITORING PROCEDURES

Monitoring is not needed for this specific task.

**TASK HAZARD ANALYSIS (THA)
CITY OF GLENDALE
GLENDALE, CALIFORNIA**

Evaluated by: ????????

Date: April, 2009

TASK NAME

EARTH MOVING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

Earth moving (e.g., excavating, grading, trenching, etc.) typically involves the removal or backfilling of material. This is usually accomplished through mechanical means using a variety of heavy equipment. Personnel working in the area of earth moving activities should be alert to their surroundings and keep in visual contact with the equipment operators.

• N/A

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

1. ANSI approved hardhat
 2. ANSI approved safety glasses (with face shield for high impact hazards, etc.)
 3. ANSI approved safety shoes/boots
 4. Work clothing (coveralls or work uniform appropriate for the weather conditions)
 5. Hearing protection (as necessary while working near noise producing equipment)
 6. Reflectorized safety vest when working around vehicular traffic
 7. Leather gloves while handling sharp edges
 8. Protective coveralls (as needed)
 9. Use guard rails or safety harness (tied off appropriately) for fall protection when working near excavations \geq 6 feet in depth
- Use sunscreen lotion 15 SPF or higher on exposed skin as necessary.

- Face shield/chemical goggles if splash is anticipated
- Tyvek® if potential exists for contact with impacted materials.
- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.

Physical Hazards

1. Vehicle/heavy equipment traffic
2. Suspended loads
3. Insects, plants and animals
4. Hazardous noise
5. Severe weather
6. Heat/cold stress
7. Slips, trips, and falls
8. Sunburn

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- Trenchbox or appropriate shoring, benching and/or sloping if entry is required

1. Evaluate surrounding work area for additional hazards that may be present and modify work activities accordingly.
2. Keep area surrounding work areas free of obstructions.
3. Use Deet® containing product in areas of possible exposure to ticks, mosquitoes, etc.
4. Keep vehicles away from the edge of the excavation to prevent the vehicle from falling in.
5. Always keep in view of drivers of heavy equipment or vehicles.
6. Flagging for temporary work locations.
7. Routinely use hand signals to communicate with the equipment operators.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

Evaluated by: **???????**

Date: April, 2009

TASK NAME

EROSION CONTROL

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves the installation of erosion control materials including, but not limited to fencing, matting, logs, straw bales, and berms.

- None anticipated

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

- High-visibility reflective safety vest.
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

- Tyvek® if potential exists for contact with impacted materials.
- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.

- Manual lifting
- Cuts/lacerations/burns/fractures from manual and powered tools
- Heavy equipment
- Slip, trip, and falls
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Electrical
- Noise

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 201, General Safety Rules
- ENV 501, Manual Materials Handling
- ENV 504, Powered Hand Tools
- ENV 505, Manual Hand Tools

1. Evaluate surrounding work area for additional hazards that may be present.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel. Wet straw bales may weigh more than 49 pounds.
3. Evaluate areas for poison ivy.

MONITORING PROCEDURES

Monitoring is not anticipated for this specific task.

Evaluated by: ???????

Date: April, 2009

TASK NAME

GEOPHYSICAL SURVEY

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves the use geophysical equipment to locate underground storage tanks and associated piping.

- None anticipated

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

- High-visibility reflective safety vest
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.
- Leather gloves while handling sharp edges or operating powered tools/machinery.

- Manual lifting
- Slip, trip, and falls
- Heat/cold stress
- Heavy equipment
- Hazardous noise

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 201, General Safety Rules
- ENV 501, Manual Materials Handling

1. Evaluate surrounding work area for additional hazards that may be present.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

Evaluated by: **???????**

Date: April, 2009

TASK NAME

PRE-FIELDWORK ACTIVITIES

TASK DESCRIPTION	CHEMICAL EXPOSURE HAZARDS
Underground Service Alert will be notified prior to field activities. An AECOM representative will meet with the various utility locating crews, construction personnel, and current tenants to coordinate field activities prior to mobilization. A formal traffic control plan will not be required for this project because the entire site is not open to public traffic flow.	<ul style="list-style-type: none"> None

PPE	OTHER SAFETY EQUIPMENT	PHYSICAL HAZARDS
Level D (see Table 6-2 for upgrade/downgrade criteria) <ul style="list-style-type: none"> High-visibility reflective safety vest ANSI approved hardhat. ANSI approved safety glasses. ANSI approved steel toe safety shoes/boots. 	<ul style="list-style-type: none"> First aid kit (located in vehicle) Fire extinguisher (located in vehicle) 	<ul style="list-style-type: none"> Slip, trip, and falls Heat/cold stress Severe weather/sunburn

APPLICABLE OPERATIONAL SAFETY PROCEDURES	ADDITIONAL SAFETY CONSIDERATIONS
<ul style="list-style-type: none"> ENV 201, General Safety Rules 	<ol style="list-style-type: none"> Evaluate surrounding work area for additional hazards that may be present.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

Evaluated by: ???????

Date: April, 2009

TASK NAME

SOIL SAMPLING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves collecting soil samples for classification purposes.

- N/A

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D (see Table 6-2 for upgrade/downgrade criteria)

- Nitrile inner gloves
- High-visibility reflective safety vest
- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

- Face shield/chemical goggles if splash is anticipated
- Tyvek® if potential exists for contact with impacted materials.
- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.

- Manual lifting
- Slip, trip, and falls
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Heavy equipment
- Hazardous noise

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 201, General Safety Rules
- ENV 515, Excavation
- ENV 532, Traffic Safety

1. Always ensure the driver of excavation equipment can see you at all time times. Never assume he can see you.
2. Evaluate surrounding work area for additional hazards that may be present.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

Evaluated by: **???????**

Date: April, 2009

TASK NAME

SURVEYING, MAPPING, UTILITY LOCATING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

AECOM will provide surveying services, including the generation of maps, drawings from the collected data.

- None Anticipated

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D PPE

- Steel toed work boots
- High visibility reflectorized safety vest
- ANSI approved safety glasses
- ANSI approved hardhat

- Hearing protection (as necessary)

1. Vehicle/heavy equipment traffic
2. Insects, plants and animals
3. Hazardous noise
4. Severe weather
5. Heat/cold stress
6. Slips, trips, and falls
7. Sunburn
8. Utilities

APPLICABLE OPERATIONAL/ACTIVITY SPECIFIC SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- ENV 305 – Construction Operations
- ENV 532 – Traffic Safety
- ENV 522 – Working Surfaces
- CP 423 – Rail Operations

1. Work with site personnel to asses site control zones
2. Ground personnel must yield to vehicles/equipment and be aware of other operations taking place while on-site.

MONITORING PROCEDURES

Monitoring is not anticipated for this task.

**TASK HAZARD ANALYSIS
MULTI-SITE OPERATION AND MAINTENANCE ACTIVITIES
CHROMIUM TREATMENT FACILITIES
GLENDALE, CALIFORNIA**

Evaluated by:

Date:

TASK NAME

CONFINED SPACE ENTRY ATTENDANT

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves the use of Earth Tech personnel as an attendant during a confined space entry of an IX vessel. Entry will only occur after IX removal in instances when internal maintenance is deemed necessary by the City of Glendale Plant Operator.

- Disinfection chlorine used by contractor
- Neutralizing Chemicals
- Weak Base Anion

City of Glendale personnel will under no circumstances be used as an entrant in the confined space. As an attendant however, City of Glendale personnel will have specific responsibilities which are shown below.

Attendant responsibilities include:

- Knowing and informing entrants of the hazards involved with the specific confined space.
- Regulating entry of the confined space and maintaining a head count of the entrants.
- Staying outside the confined space for the entire duration of the entry.
- Having a communication pathway with the entrants.
- Calling for help (e.g. emergency contacts) or performing a non entry rescue if necessary.
- Monitoring the air quality prior to and during confined space entry.

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D

- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

- Air monitoring device to measure O₂ and explosive levels. This device will be provided by the subcontractor.
- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.
- Hearing Protection (as necessary when working near noise producing equipment).
- Goggles when working with chemicals.

- Manual lifting
- Cuts/lacerations/fractures from manual and powered tools
- Slip, trip, and falls (hoses, equipment, and uneven surfaces in the confined space)
- Heat/cold stress from severe weather
- Hazardous noise (air compressors, air operated tools in use)
- Pressurized water lines, equipment and tools
- Heights
- Difficult egress

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- SH&E 118, Confined Space Entry Program
- SH&E 119, Lock out/Tag out
- SH&E 201, General Safety Rules
- SH&E 207, Contractor and Subcontractor Safety Requirements
- SH&E 404, Manual Lifting
- SH&E 506, Manual Hand Tools

1. Evaluate surrounding work area for additional hazards that may be present and modify work activities accordingly.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel.
3. Block and bleed pressure from air and water lines as necessary prior to removing downstream equipment for calibration, service, and modification.

MONITORING PROCEDURES

Air quality levels should always be monitored prior to entry. If any atmospheric action levels (shown below) are exceeded, entry shall not occur and/or any work within the confined space shall cease immediately.

Air monitoring action levels:

- Atmospheric Oxygen drops below 19.5% or raises above 23.5%
- VOC concentration reaches 10% of the LEL
- H₂S reaches 5 ppm
- CO₂ reaches 15 ppm

TASK HAZARD ANALYSIS
MULTI-SITE OPERATION AND MAINTENANCE ACTIVITIES
CHROMIUM TREATMENT FACILITIES
CITY OF GLENDALE, CALIFORNIA

Evaluated by:

Date:

TASK NAME

MEDIA REPLACEMENT SUPERVISION

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves the supervision of removal and replacement of ion exchange resin and associated service tasks.

Any subcontractors working on the media replacement shall coordinate with the Site Supervisor or other qualified City of Glendale personnel. City of Glendale will facilitate the media replacement and ensure work is done following the health and safety standards.

- Disinfection chlorine used by contractor
- Neutralizing Chemicals
- Possibility of Sodium Hydroxide (NaOH) for disinfection and Hydrochloric Acid (HCl) for neutralization

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D

- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.
- Hearing Protection (as necessary when working near noise producing equipment).
- Goggles when working with chemicals

- Manual lifting
- Cuts/lacerations/fractures from manual and powered tools
- Slip, trip, and falls (hoses, equipment)
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Hazardous noise (air compressors, air operated tools in use)
- Pressurized water handling equipment and air tools in use by contractor

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- SH&E 201, General Safety Rules
- SH&E 404, Manual Handling
- SH&E 506, Manual Hand Tools
- SH&E 119, Lockout/Tagout

1. Evaluate surrounding work area for additional hazards that may be present and modify work activities accordingly.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel.
3. Block and bleed pressure from air and water lines as necessary prior to removing downstream equipment for calibration, service, and modification.

MONITORING PROCEDURES

Environmental monitoring is not anticipated for this specific task.

**TASK HAZARD ANALYSIS
MULTI-SITE OPERATION AND MAINTENANCE ACTIVITIES
CHROMIUM TREATMENT FACILITIES
CITY OF GLENDALE, CALIFORNIA**

Evaluated by:

Date:

TASK NAME

SYSTEM O&M/MONITORING & SAMPLING

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

This task involves the collection of monitoring data; manual instrument calibration, service, modification, and; collection of treatment system water samples.

The employee will communicate directly with the Site Supervisor and or the Site Safety Officer. The land purveyor will be notified of the purpose and time frame of work to be done.

- Sample Preservatives
- Chlorine & neutralizing chemicals

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

- Level D**
- ANSI approved hardhat.
 - ANSI approved safety glasses.
 - ANSI approved steel toe safety shoes/boots.

- Leather gloves while handling sharp edges or operating powered tools/machinery.
- SPF 15 sunblock when working outdoors.
- Nitrile gloves while collecting samples
- Hearing Protection (as necessary when working near noise producing equipment).
- Goggles when working with chemicals

- Manual lifting
- Cuts/lacerations/fractures from manual and powered tools
- Slip, trip, and falls
- Heat/cold stress
- Severe weather/sunburn
- Biological
- Hazardous noise
- Pressurized water handling equipment
- Burns from torches used to disinfect sample ports.

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- SH&E 201, General Safety Rules
- SH&E 404, Manual Handling
- SH&E 506, Manual Hand Tools
- SH&E 119, Lockout/Tagout

1. Evaluate surrounding work area for additional hazards that may be present and modify work activities accordingly.
2. All loads in excess of 49 pounds require use of mechanical aids or assistance from other personnel.
3. Block and bleed pressure from lines as necessary prior to removing downstream equipment for calibration, service, and modification.

MONITORING PROCEDURES

Environmental monitoring is not anticipated for this specific task.

TASK HAZARD ANALYSIS
MULTI-SITE OPERATION AND MAINTENANCE ACTIVITIES
LOCKHEED MARTIN CORPORATION
SAN BERNARDINO, CALIFORNIA

Evaluated by:

Date:

TASK NAME

RADIATION SAFETY

TASK DESCRIPTION

CHEMICAL EXPOSURE HAZARDS

Naturally occurring radioactive material that is extracted from the groundwater wells accumulates onto the treatment media at the plants operated by Lockheed Martin resulting in elevated radioactivity in and near the treatment vessels that contain the media.

Ionizing radiation from radioactive decay of elements.

Earth Tech personnel performing routine operation and maintenance activities may be exposed to low levels of radioactivity in excess of background concentration but below 10% of the annual exposure limits set in 10 CFR20, 29CFR1926.

PPE

OTHER SAFETY EQUIPMENT

PHYSICAL HAZARDS

Level D

- ANSI approved hardhat.
- ANSI approved safety glasses.
- ANSI approved steel toe safety shoes/boots.

- Gloves, goggles, and particulate filters when handling media directly.
- Disposable overalls if entering a vessel or performing work which may result in media contact with clothing.

APPLICABLE OPERATIONAL SAFETY PROCEDURES

ADDITIONAL SAFETY CONSIDERATIONS

- SH&E 126, Radiation Safety Program
- SH&E 127, Radiation Protection Plans
- SH&E 128, Radiological Exposure Assessment
- SH&E 129, ALARA (As Low As Reasonably Achievable)

1. Minimize time spent near IX and GAC vessels to minimize exposure.
2. Increase distance between body and vessel. At a distance of 30 feet from the vessels, radiation levels are at background.
3. Use shielding by keeping other equipment between the body and the vessels.

MONITORING PROCEDURES

Radionuclide concentrations in groundwater and radiation levels at the sites will be monitored on an annual basis to ensure worker exposure is within the established limits on annual radiation exposure for occupationally exposed workers (Reference 10CFR20, 29CFR1926).

The CFR limits the general public to radiation exposure of 100 millirem/year, with no more than 2 millirem of exposure in any one hour.

Earth Tech monitoring action levels:

- Alpha and beta radiation 0.2 millirem/hr (200 microrem/hour) (approximately 0.2 milliRoentgen/hr): Stop all work and contact the Radiation Safety Officer .