

UNITED STATES ENVIRONMENTAL SERVICES, LLC

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Submitted to:

**Canadian National Rail Road
USEPA
MDEQ**



Prepared by:

UNITED STATES ENVIRONMENTAL SERVICES, LLC
1075 Mendell Davis Drive
Jackson, Mississippi 39272

USES Project Number:
1160-02644

HEALTH SAFETY & WORK PLAN

FOR

Train Derailment, New Augusta, Mississippi

Customer:

Canadian National Rail Road
2400 N. 3rd Street
Baton Rouge, Louisiana 70802
Canadian National Rail Road

Reviewed by: _____ Date: _____
USES Senior Project Manager

Reviewed by: _____ Date: _____
Customer or Company Representative

Reviewed by: _____ Date: _____
USEPA OSC

Reviewed by: _____ Date: _____
MDEQ Representative

Prepared by: Mike Gettinger Date: 1-31-14
Director of Emergency Response Safety, CFPS

Table of Contents

Health and Safety Program:	Section A
Organizational Structure	Section B
Work Plans:	Section C
Site Specific Plans:	Section D
Generic Change Forms	Section E
HSWP Acknowledgement	Section F
Tailgate Safety Meetings	Section G
Material Safety Data Sheets	Section H
Directions to Hospital	Section I
Applicable USES SOPs	Section J
Air Monitoring Plan	Section K
Exclusion Zone Entry Teams & Logs	Section L
TBD	Section M

Health and Safety Program

HEALTH and SAFETY PROGRAM

The following Health Safety and Work Plan has been created to comply with the provisions set forth in 29 CFR 1910.120 section (b) of the United States Occupational Safety and Health Administration (OSHA), Department of Labor (DOL) regulations relating to labor. In order to comply with the provisions set forth in the regulation, this document has been organized to correspond to the format used in 29 CFR 1910.120

Disclaimer

US Environmental Services cannot guarantee the health or safety of any person entering the Site. Because of the potentially hazardous nature of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury and illness at this site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site without prior evaluation by trained health and safety personnel

SECTION A 1: *General Requirements*

- (i)
 - A. Identify hazards to personnel
 - B. Evaluate Health and Safety hazards at the site.
 - C. Control hazards
 - D. Provide for emergency response at the operation.
- (ii) The written health safety and work plan shall incorporate the following:
 - A. Organizations structure
 - B. Comprehensive work plan
 - C. Site specific safety and health plan
 - D. Safety and health training program
 - E. Medical surveillance program
 - F. The employers operating procedures for health and safety
 - G. Interface between general program and site specific
- (iii) Contractors and subcontractors:
 - U. S. Services subcontractors who are potentially exposed to hazardous wastes will prepare their own written health and safety procedures to cover their specific work operations. These written procedures will be attached to U. S. Services Health and Safety Plan.

(iv) Program availability

The Health Safety and Work Plan will be available to all site workers and regulatory agencies during work hours at the project site. The plan shall be in the Command Post near the decontamination and rest area.

Organizational Structure

ORGANIZATIONAL STRUCTURE

SECTION B (1): Organizational structure part of the site program.

(i) Chain of command and responsibilities.

A. Client Representative: Will Noland

The CN Client Representative has the overall responsibility for the safety and welfare of all personnel and those subcontractors operating under the control of the CN Client Representative and authority for completing the objectives of the job. He shall assure that the goals of the job are attained in a manner consistent with the requirements of the Safety and Health Plan.

B. Site Health and Safety Officer: Mike Gettinger

The Site Health and Safety Officer has the responsibility to ensure all operations are completed in a safe manner. He/she shall perform periodic safety sweeps of the site performing observations of the work being performed and has the authority to change an operation if it is being completed in an unsafe manner

C. Personnel requirements for hazardous waste operations, emergency response and their general function and responsibilities:

Client Representative:

Overall responsibility for the project startup, safety, productivity and completion to the customer's satisfaction of the project, maintains clear communications with local, state and federal authorities. Report to the Vice President of Emergency Operations daily and communicates with the local office Operations Manager for staffing needs.

Health and Safety Officer:

Responsible for the safe actions of all USES personnel working at the site along with the safety of the subcontractors and site visitors, and reports directly to the Project Manager and to the Corporate Health & Safety (H&S) Director for safety issues not addressed by the Project Manager.

Operations Supervisor:

Responsible for the daily operations at the site, coordination of the daily activities with Project Manager, and assures that the job site and the technicians perform all operations in a safe manner. He reports directly to the Project Manager for operational and staffing requirements. Additionally reports to the Site Health and Safety Officer for safety issues. Has authority to notify the H&S Director for safety issues not addressed by the Health and Safety Officer.

Supervisors, Foreman, Operators, and Technicians:
All site personnel share responsibilities for health and safety. Specific duties include: Conducting work in accordance with the HASP, participating in daily safety meetings/planning; and, prompt reporting of all incidents and potential health and safety-related problems.

D. Lines of authority, responsibility and communications:

1. All employees are encouraged to address problems or concerns with their immediate supervisor. However, USES maintains an open door policy and any employee may freely contact any level of management to express his/her concerns. The lines of authority and the associated responsibility are as follows:

Client Representative:	Will Nowland
Finance:	_____
Operations Chief:	_____
Logistics Chief:	_____
Site Health & Safety Officer:	Mike Gettinger
Planning Chief:	_____
Federal OSC:	Leo Francendese
State OSC:	Ernie Shirley

2. Communications:

Verbal communications should be the primary method of communication between all site workers. Radio and cellular phone communications are the secondary method of communications and hand signals will be the third method of communication when crew is in a high noise area. The standard hand signals are as follows:

- Hand Gripping Throat - Out of Air, Can't Breathe
- Grip Buddy's Wrist or Waist - Leave Area Immediately
- Both Hands Atop Head - Need Assistance
- Finger Touching Nose or Respirator, Can Smell Contamination/Breakthrough
- Thumbs Up - OK, I'm All Right, I Understand
- Thumbs Down - No, Negative
- Tapping top of hard hat – Hot Railroad Tracks

Hot Zone Communications

If radios are used Channel 1 has been designated as the radio frequency for personnel operating in the Hot Zone. All other on-site communications will use Channel2.

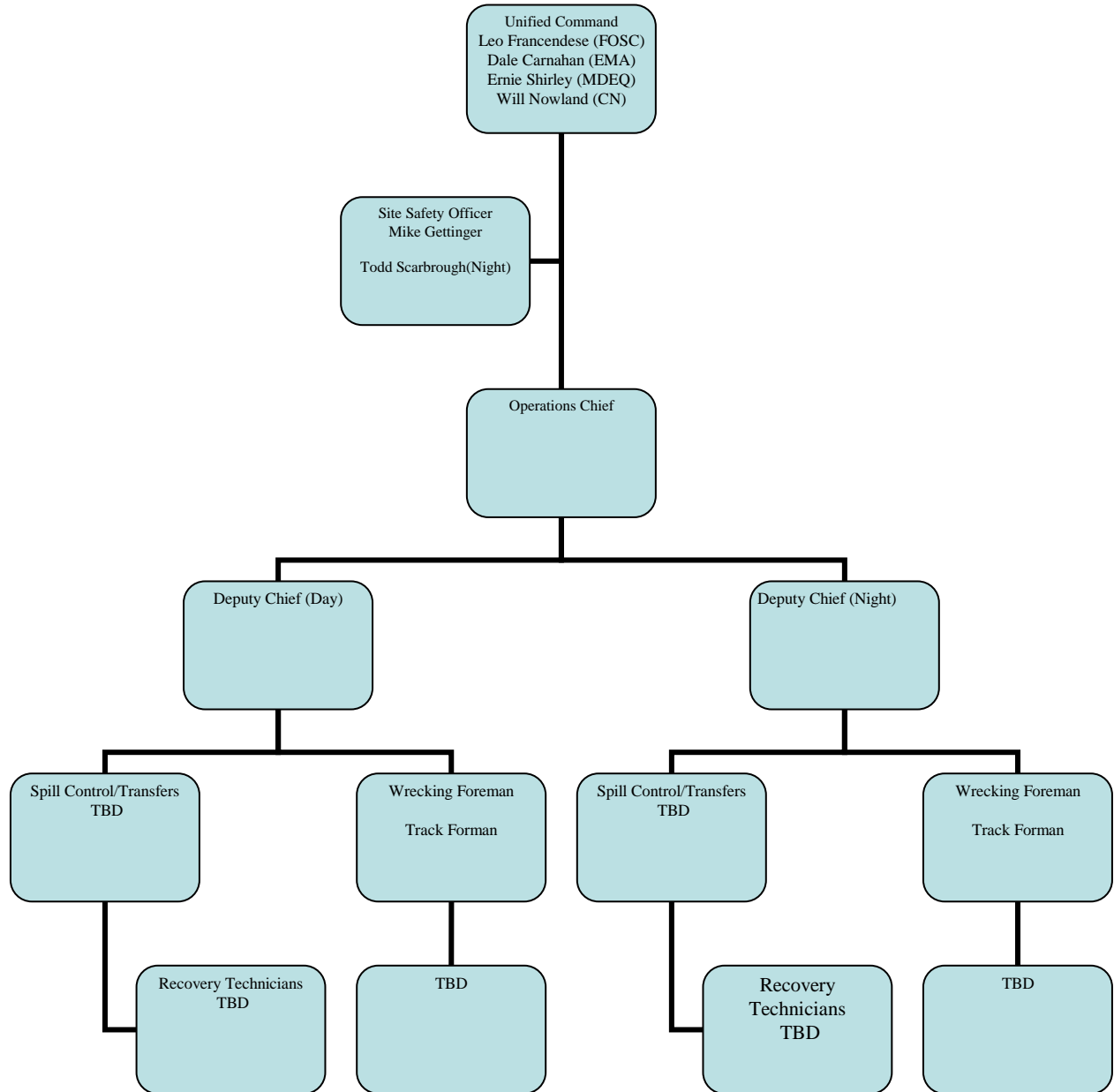
Personnel in the Hot Zone should remain in constant radio communication or within sight of the Entry Team Leader and/or Site Safety Officer. Any failure of radio communication requires an evaluation of whether personnel should leave the Hot Zone. Entry personnel should listen for a Single long blast: (3-5 seconds) as the emergency signal for a Hot Zone evacuation.

On-Site Horn Signals

A Single long blast: (3-5 seconds) all team(s) shall evacuate the hazard area and assemble in designated safe refuge or decon as needed before proceeding to assembly point. All other site personnel will proceed to the designated assembly areas for the site.

A series of three short blasts of an air horn will indicate the all clear; this should be followed up with a radio confirmation by the designated site safety officer.

Site Organization



On-Site Cellular Phone Numbers

NO CELL PHONES SHALL BE CARRIED INTO THE EXCLUSION ZONE.

NAME	CELL NUMBER	NAME	CELL NUMBER
Don Warren	601-278-7814		
Glen Thompson	601-278-7826		
Mike Gettinger	601-278-7835		
Todd Scarbrough	601-498-4327		
Ryan Bridgers	601-278-7819		

On-Site Radio Assignments

USES CONTACT	RADIO CHANNEL ASSIGNED
Don Warren	1
Glen Thompson	1
Mike Gettinger	1
Todd Scarbrough	1
Ryan Bridgers	1
	1
	1
	1
REGULATORY CONTACTS	RADIO CHANNEL/CELL PHONE
Jordan Garrard (USEPA)	678-644-8648
Ernie Shirley (MDEQ)	601-946-9474
Dale Carnahan (Perry Co EMA)	601-964-0602
Leo Francendese (USEPA OSC)	404-606-2223
SUBCONTRACTORS	RADIO CHANNEL/CELL PHONE

Work Plan

WORK PLAN

SECTION C (1): Comprehensive Work Plan

- Address tasks and objectives of the site
- Define logistics and resources required to reach the tasks and objectives

(i) Site Description:

The site is a train derailment in rural south Mississippi near Lat N31.203918° Long W89.053332° approximately 0.5 miles west of New Augusta, Mississippi. Sixteen (16) rail cars including 12 tank cars containing crude oil derailed, approximately 6 of the tank cars were involved in a spill that occurred after the derailment. The area surrounding the train wreck is a light industrial (saw mill) and rural neighborhood.

(ii) Anticipated activity:

- Air monitoring as needed to protect personnel
- Provide fire suppression stand by during train wrecking operations to include:
 - Connect cables to the damaged tankcar and pull it free from the wreckage, if a fire occurs stop movement and extinguish the fire. Once the damaged burning tankcar is positioned for extinguishment continue to cool the car until steam does not form immediately on the shell of the car, direct a 3% AR-AFFF foam solution inside the tankcar through an open breach or manway **taking care not to position personnel in a direct line with the open hole where burning liquid could reach them if it ejected form the car**
 - Continue to cool the car taking care not to disturb the foam blanket
- Transfer remaining or residual product from the damaged tank cars using USES flammable liquid transfer guidelines
- Provide site safety support for all mitigation activities including but not limited to
 - Reconnaissance (Recon) of potential work areas before work begins
 - Firefighting stand-by during wrecking operations
 - Transfer operations of residual product in tankcars
 - Booming, damming, solidifying and oil recovery operations
 - Any work activities as directed by the Incident Command staff
- Boom or dam off creeks and other water courses to confine the discharged material
- Construct work and staging areas for the fire suppression and wrecking operations
- Vacuum truck operations to recover free liquids at collection points
- Skimmer operations at collection points as needed
- Pad up oil where needed
- Removal of brush and dead-fall in creeks to facilitate better flows
- Excavate contaminated soil
- Car shearing for disposal

(iii) Definition of the response objectives and tasks of the job and identification of the methods for obtaining these objectives:

To ensure the safety and health of all response and observer personnel, an effective, comprehensive health and safety program has been established and implemented along with the work plan. The safety and health of all response personnel on-site is the primary concern during these response operations. It is the responsibility of not only management and supervisors, but also all general workers to ensure that all standard safe operating procedures are followed in this written plan. This written plan is to provide a comprehensive guideline for all personnel involved with the operations. Safety is of the supreme priority throughout the entire phase, and ***all personnel associated with this incident are committed to ensuring safe work practices and a healthful work environment, for its employees.***

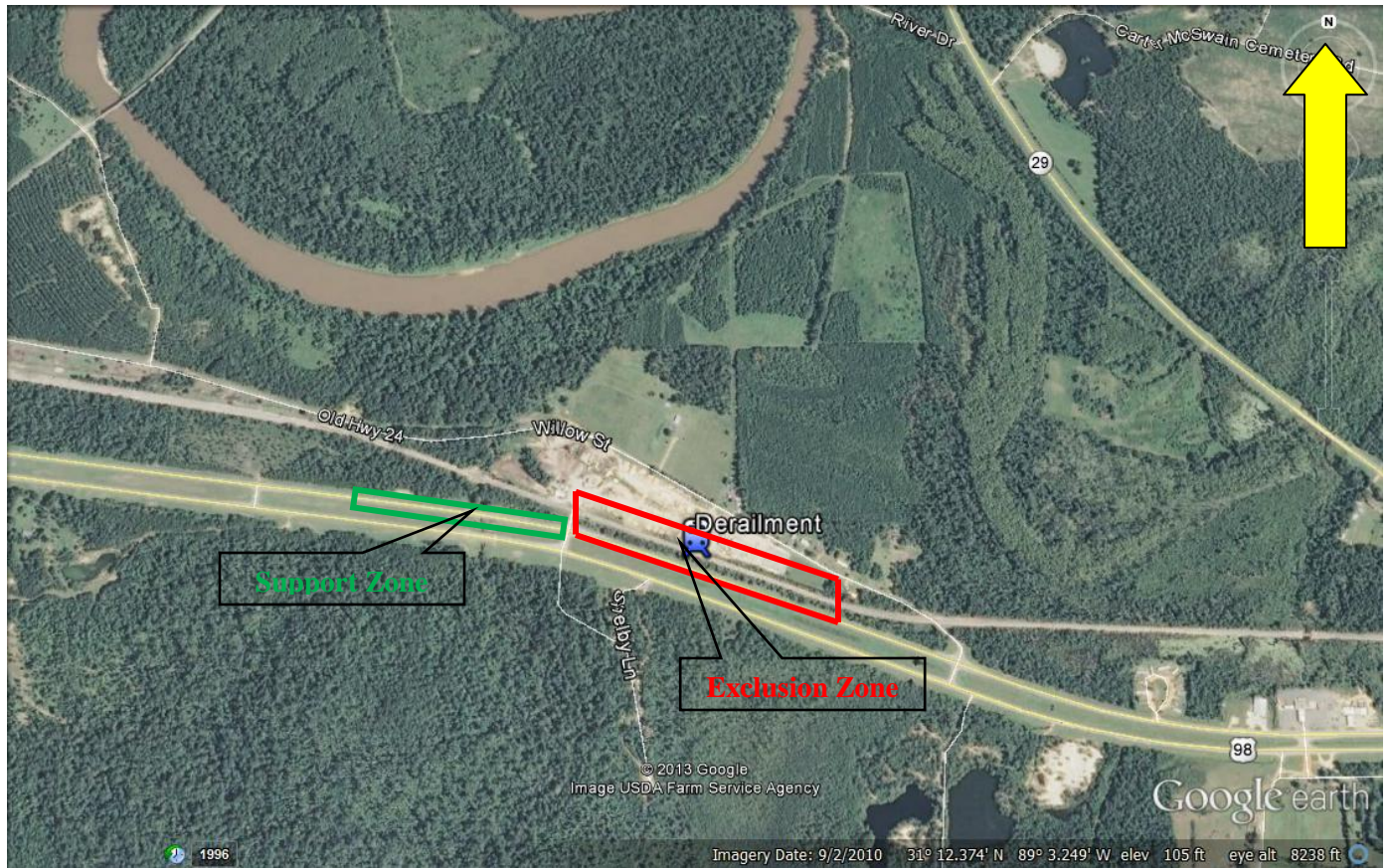
All objectives throughout this plan will be performed with life safety as the primary goal. Any operations that compromise the safety of personnel will cease until the operation can be reevaluated and the proper engineering controls implemented to eliminate the identified hazard(s).

- Effectively deploy containment systems to prevent the migration of oil from the source
- Aggressively conduct recovery efforts to the highest rate possible
- Protect any uncontaminated areas to every extent possible
- Minimize environmental impact
- Provide the necessary assistance to the RP and/or regulatory agency in a safe and effective manner
- Hazard Evaluation

(iv) Personnel requirements for accomplishing these task and objectives:

3 Contract Project Manager
2 Health & Safety Officer
1 Operations Supervisor
1 Customer Representative

SITE DIAGRAM



(v) Training as required in paragraph (e) 40 Hour Hazardous Waste Operations:

USES employees working on hazardous waste site have received 40-hours initial training required in 29 CFR 1910.120 (e)(i). USES employees receive an 8-hour refresher training course on an annual basis according to 29 CFR 1910.120 (e)(8). A certificate as required in Section (e)(6) is maintained for each employee at the Training Center at the Jackson, Mississippi Office: 1075 Mendell Davis Drive Jackson, Mississippi 39272. Our employees are encouraged to carry a picture I.D. card with the certification of each class attended indicated.

(vi) Required information programs for employees, contractors and subcontractors that will be actively engaged in hazardous waste operations

1) Site Specific Health Safety and Work Plan:

This document shall be on all Hazardous Waste Site jobs and Emergency Response activities in accordance with 29 CFR 1910.120 (e) & (q). It must be kept up-to-date and be present for review by employees, contractors, sub-contractors, Federal State and local authorities.

2) Employee Pre-Entry Briefing:

This briefing shall be held prior daily work activities and initiating any new site activity.

3) Employee Tailgate Safety Meetings:

Routine safety meetings are to be held before the start of each shift and any new site condition or activity to inform employees of any changes that may be taking place.

4) Employees, Contractors, Subcontracts, Hazard Communication Program CFR 1910.1200:

Each hazardous waste site must have a program to inform people who are coming on the job site, of the chemicals present in their work areas. USES shall provide Material Safety Data Sheets to personnel on the site for review and inspection.

(vii) Medical surveillance program:

United States Environmental Services, Inc., (USES) maintains a Medical Surveillance program that is in accordance with 29 CFR 1910.120, section (f).

We offer our employees a medical examination upon employment prior to assignment, at least every twelve months unless the attending physician believes a longer interval is appropriate, at termination and reassignment where the employee

would not be covered if they had not had an examination within the last six months.

As soon possible upon notification by an employee that the employee has developed signs or symptoms indicating possible over-exposure to hazardous or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation.

USES records and reports for our Medical Surveillance program are on file at the corporate office 365 Canal Street, New Orleans, LA.

Site Specific Plans

SITE SPECIFIC PLAN

SECTION D (1) Site Specific Health and Safety Plan

(i) General requirements of section B (4)

- A.** Address the safety and health hazard of each phase of site operations
- B.** Include the requirements and procedures for employee protection

General Rules:

- A.** All personnel entering the Exclusion Zone shall be required to wear personnel protective equipment (as required).
- B.** The Exclusion Zone and staging areas shall be barricaded with Yellow/Black “Caution” tape (if required) along the entire perimeter.
- C.** All personnel entering the Exclusion Zones shall not be permitted to smoke, eat, or drink, carry matches or lighters.

(iv) This site specific plan provides for:

A. RISK ANALYSIS:

1. Crude oil and Methanol can produce, Flammable and Toxic Gases
2. Slip, Trip and fall hazards
3. Walkways and uneven working surface areas
4. Operating electrical powered equipment
5. Operating heavy equipment
6. Operating in confined spaces
7. Working at heights over 6 feet off the ground
8. High pressure gases (Nitrogen and Compressed breathing air)
9. Ergonomics-(material handling).
10. Biologicals (snakes, insects, skunks, fecal matter, etc.)
11. Heat stress, dehydration
12. Traffic (road and rail)
13. Cuts, Sprains and Strains
14. Inclimate weather (Thunder storms, Tornado, etc.)

GENERAL HAZARD PREVENTION:

The primary safeguards for these types of hazards are to be aware of the surroundings and to remain focused on the particular aspect of the job at hand. All Employees must comply with all Federal, State and local regulations concerning Workplace Safety. All Employees must have and be wearing an orange or florescent green reflectorized vests when out on the site.

Severe Weather Procedures:

When a threatening weather watch is issued for the operational area, a designated weather SSO will monitor weather radio forecasts, monitor computer/internet weather services and will heed any weather warnings that are issued. The designated weather SSO shall alert all onsite safety personnel, the project manger, the incident command staff and other pre-designated key site personnel of the approaching potential severe weather by sending a group text message and following up with verbal contact by cell phones. If threatening weather conditions arise such as high winds, hail, tornado warnings, sever thunderstorm warnings or heavy rain that has a potential to produce flash flooding, site personnel shall seek safe shelters inside substantial structures. In the event of lightning in the vicinity of the site (within 5 miles or 25 seconds from visible lighting strike to the sound of thunder), the SSO shall stop all activities and have site personnel take cover in areas of safe refuge such as buildings, trailers or vehicles until such time as the lighting threat has cleared the area of operations (30 minutes after last lighting strike or thunder event). Operational effectiveness must be evaluated when sustained winds are greater than 25 knots. The determination to suspend operations shall be based on that evaluation and risk assessment by site safety and incident command personnel. **In the event of any severe storm warning being issued to the operational area all activities shall stop and personnel shall seek shelter inside substantial structures immediately.**

Fire resistant protective outer clothing, safety boots, hard hat, safety glasses, splash shield or goggles, splash suits, Chemical resistant-outer gloves, chemical resistant-inner gloves, and self contained breathing apparatus (SCBA) may be employed to protect personnel. Chemical resistant protective outer clothing (splash suits), chemical safety boots, hard hat, safety glasses or goggles, chemical resistant-outer gloves, chemical resistant-inner gloves, and appropriate respiratory protection such as air purifying respirators (APR) or self contained breathing apparatus (SCBA) as dictated by air monitoring results shall be worn when in direct contact with the products.

Procedures for controlling confined space hazards will include lockout and tagout of utilities, process lines, backup power sources, air movers, and other hazardous energy sources that could engulf or injure personnel during confined space entries. They will also include air monitoring with direct-reading instruments for oxygen deficiency, flammable atmospheres, and toxic gases and vapors prior to confined space entry.

When working in and around railroads always be on the alert for moving equipment. All Employees must always expect movement on any track, at any time, in either direction. Do not step or walk on the top of the rail, frog, switches, guardrails, or other track components. In passing around the ends of standing cars, engines, roadway machines or work equipment, leave a minimum of 25 feet between yourself and the end of the equipment. Do not go between pieces of equipment if the opening is less than 50 feet as a minimum. Avoid walking or standing on a track unless authorized by the Railroad Representative. Before stepping over or crossing tracks, look in both directions first. Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when equipment has been protected against movement and authorized by the Railroad Representative. No tools or materials are left close to the track (within 15 feet) when trains are passing.

An advanced life support equipped ambulance unit should be available to respond prior to entry into the hazard zones or confined spaces with unusual hazards, confirmation with the local ambulance service should be made before work begins. Base Line Vitals of personnel may be taken at the discretion of the site safety officer and are dependant on level of PPE used, environmental conditions and site hazards present in accordance with USES PNP No 3.07.03 Personal Protective Clothing

CHEMICAL HAZARDS:

1. Crude Oil
2. Methanol
3. Motor Fuels

HEALTH HAZARD DATA

SUBSTANCE	EXPOSURE LIMIT	IDLH LEVEL	PHYSICAL DESCRIPTION	HEALTH EFFECTS	ROUTE OF ENTRY	FIRST AID
Petroleum crude oil CAS # 8002-05-9	NIOSH TWA Not established OSHA PEL Not established	ND	A black sticky liquid with a strong hydrocarbon odor	Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.	Inhalation Skin Contact Eyes, Ingestion	Irrigate eyes, wash skin with soap, respiratory support Get medical attention immediately
Methanol CAS 67-56-1	NIOSH TWA 200 ppm (260 mg/m ³) ST 250 ppm (325 mg/m ³) [skin] OSHA PEL 200 ppm (260 mg/m ³)	6000 ppm	Colorless liquid with a characteristic pungent odor.	Irritation eyes, skin, upper respiratory system; headache, drowsiness, dizziness, nausea, vomiting; visual disturbance, optic nerve damage (blindness); dermatitis	Inhalation Skin Contact Eyes, Ingestion	Irrigate eyes, wash skin with soap, respiratory support Get medical attention immediately

SUBSTANCE	EXPOSURE LIMIT	IDLH LEVEL	PHYSICAL DESCRIPTION	HEALTH EFFECTS	ROUTE OF ENTRY	<i>FIRST AID</i>
Motor Fuels Gasoline CAS# 8006-61-9	NIOSH TWA Ca OSHA PEL	Ca, ND	Clear liquid with a characteristic odor.	Irritation eyes, skin, mucous membrane; dermatitis; headache, blurred vision, dizziness, confusion, convulsions; occupational carcinogen]	inhalation, skin absorption, ingestion, skin and/or eye contact	Irrigate eyes, wash skin with soap, respiratory support Get medical attention immediately

HEALTH HAZARDS:

ACUTE (Short-Term) Hazards:

- Inhalation – Some of the products may be irritating to respiratory tract; may cause pulmonary edema; may also cause a headache, nausea, weakness, dizziness, and loss of coordination or judgment.
- Eye/Skin Contact - Expected to be irritating to eyes and skin.

CHRONIC (Long-Term) Hazards:

- Benzene is a Suspected Human Carcinogen

PHYSICAL HAZARDS
Task Specific Hazard Analysis

Task	Potential Hazard	Precautions
Mobilization	<ul style="list-style-type: none"> Heavy manual lifting/moving Slip/trip/hit/fall Heavy Equipment Falling loads 	<ul style="list-style-type: none"> instruct personnel in proper lifting technique, get help mechanize repetitious lifts and lifts > 50 lbs when possible use hand protection such as leather gloves maintain walkways clear of obstructions, maintain 3 points of contact maintain safe distances maintain eye contact between ground crew and operator Stand clear of lifted loads
Site Preparation	<ul style="list-style-type: none"> Heavy Equipment Contact with contaminated liquids and/ or solids Exposure to hazardous atmospheres Slip and Fall Heavy manual lifting/moving Puncture and laceration wounds 	<ul style="list-style-type: none"> maintain safe distances ground traffic maintain eye contact with operator avoid contact with visible contamination implement site controls (e.g. work zones and decontamination plan) implement air monitoring plan and ensure PPE usage matches the HASP maintain walking surfaces in an even, unbroken, obstacle free condition instruct personnel in proper lifting technique mechanize repetitious lifts and lifts > 50 lbs when possible use hand protection such as leather gloves survey for and remove wreckage and debris from work areas which pose puncture and laceration hazards
General Operations	<ul style="list-style-type: none"> Vehicle Traffic 	<ul style="list-style-type: none"> maintain safe distances from ground traffic, maintain eye contact with the driver, wear traffic safety vest

Task	Potential Hazard	Precautions
Establish fire protection for prevention, control, and suppression	<ul style="list-style-type: none"> • Contact with hazardous materials • Flammable or explosive atmospheres • Exposure to extremely high levels of heat • Slip/trip/hit/fall • Heavy manual lifting/moving • Puncture and laceration wounds • Insufficient fire flow to protect personnel, loss of fire system during fire fighting ops 	<ul style="list-style-type: none"> • avoid contact with visible contamination • implement air monitoring plan and ensure PPE usage matches the HASP • eliminate ignition sources, control static electricity, implement site controls (e.g. work zones and decontamination plan) • wear NFPA approved Bunker gear; • maintain walkways clear of obstructions; • instruct personnel in proper lifting technique • survey for and remove wreckage and debris from work areas which pose puncture and laceration hazards, wear proper PPE. • Establish an adequate, reliable water source, provide redundant fire systems
Waterborne Contaminant Clean-up (booming and skimming)	<ul style="list-style-type: none"> • Contact with hazardous materials • Work on and over water • Working on or over swift water 	<ul style="list-style-type: none"> • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination plan) • wear Coast Guard personal flotation devices when working in or over water; • minimum of two employees per vessel; • no activity on the water will be permitted after the sun sets; and, • each boat will be outfitted with an ABC fire extinguisher, a two way radio, air horn, life buoy w/ 25ft of rope, and two oars. • Wear a safety harness and life line
Transferring Contents of Damaged Containers	<ul style="list-style-type: none"> • Contact with hazardous materials 	<ul style="list-style-type: none"> • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination)

Task	Potential Hazard	Precautions
Overpacking Damaged Drums	<ul style="list-style-type: none"> • Contact with hazardous materials • Pinch points • Struck by drum 	<ul style="list-style-type: none"> • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination) • keep hands out from between drums • stand clear of drums being lifted • follow USES Drum Handling SOP
Shoveling Spilled Contaminated Solids into Shipping Containers Sampling and characterization of site contaminants: <ul style="list-style-type: none"> • soils • waters • containers 	<ul style="list-style-type: none"> • Contact with hazardous materials • Strain/ overexertion • Contact with contaminated liquids and/ or solids • Exposure to hazardous atmospheres • Slip and Fall • Sharps (e.g. deteriorated drums, broken drum thief) • Incompatibility reactions • Explosive releases of gas/ vapors during drum opening 	<ul style="list-style-type: none"> • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination) • do not thrust shovel into waste, push with foot • do not twist with a load shovel, move your feet • place receptacle container in front of you • pick up less wet solids on a shovel than dry • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination plan) • follow HAZCAT safety procedures • follow USES Drum Handling SOP • maintain walking surfaces in an even, unbroken, obstacle free condition • do not use excessive force to collect samples, keep gloves dry • do not sample containers unprotected from rain • do not cross contaminate containers with sampling tools • close containers following sample collection • use remote methods for opening swollen drums • use blast shields • follow USES Drum Handling SOP • relieve pressures slowly through closed top drums by opening smaller of two bungs first

Task	Potential Hazard	Precautions
Soil Excavation	<ul style="list-style-type: none"> • Heavy Equipment • Contact with contaminated soils/ waters • Exposure to Hazardous Atmospheres • Underground/ Overhead Utilities • Excavation Cave-in 	<ul style="list-style-type: none"> • maintain safe distances • ground traffic maintain eye contact with operator • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination plan) • markout utilities • maintain minimum safe distance of 10 ft from overhead power lines • follow USES Excavation Safety SOP
Equipment and Debris De-contamination	<ul style="list-style-type: none"> • Heavy Equipment • Equipment maintenance • Splash of contaminated liquids • Contact with contaminated liquids and/ or solids • Exposure to hazardous atmospheres 	<ul style="list-style-type: none"> • maintain safe distances • maintain eye contact between ground crew and operator • Follow USES "Lock Out Tag Out SOP" • use approved eye protection (goggles) • implement air monitoring plan and ensure PPE usage matches the HASP • implement site controls (e.g. work zones and decontamination plan)
Demobilization	<ul style="list-style-type: none"> • Heavy manual lifting/moving • Slip/trip/hit/fall • Heavy Equipment • Falling loads 	<ul style="list-style-type: none"> • instruct personnel in proper lifting technique • mechanize repetitious lifts and lifts > 50 lbs when possible • use hand protection such as leather gloves • maintain walkways clear of obstructions. • mark hazardous area (work zone delineation) • maintain safe distances • ground crew to maintain eye contact with operator • Stand clear of lifted loads

HEAT STRESS

Employees are required to perform this job in a hot environment while wearing personal protective ensembles that will prevent the body from cooling by the evaporation of sweat. As a result the potential to develop a heat illness is greatly increased.

HAZARD PREVENTION

Although it may not be possible to control all factors that contribute to heat stress, there are a number of actions that will serve to reduce the effects of heat stress. These include:

- Hydration (providing water to the body cells). Drinking water must always be available to the worker and they drink water frequently. It is possible to lose 1 liter of fluid each hour by sweating. Since the body's total fluid volume is only around 40 liters, it is easy to see why fluid must be replaced. Since the feeling of thirst is not an adequate guide for water replacement, employees working in heat should be encouraged to drink water every 15 to 20 minutes. The daily amount of hypohydration can be estimated by measuring body weight after work and comparing it to that morning's baseline weight; it should not exceed 1.5 percent. One of the most important physiological factors causing hypohydration is alcohol consumption. Alcohol is a diuretic that depresses the body's production of a kidney hormone that prevents water loss. When the hormone is in short supply, more urine is produced and more water is lost from the body. Responders who consumed alcohol the night before are already on the way to hypohydration when they arrive.
- Acclimatization to hot conditions has been found to be effective in preventing heat-related illnesses. The process takes 5 to 7 day, during which work hours in the hot environment are gradually increased. During 7 days of acclimatization, heart rate and body temperature become lower while performing the same work.

COLD STRESS

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds (wind chill), dampness, or cold water. One, all, or a combination of these factors can cause cold-related hazards. Cold stress, including frostbite and hypothermia, can result in severe health effects. Exposed skin is highly susceptible to wind chill and low temperatures.

Engineering controls should be utilized whenever possible to protect workers from cold-related hazards (for example, on-site heat sources, heated shelter, work areas shielded from drafty or windy conditions, and the use of thermal insulating material on equipment handles).

HAZARD PREVENTION

Effects arising from cold exposure will be minimized by the following control measures:

Personnel will be trained to recognize cold stress symptoms.

Field activities will be curtailed or halted if the equivalent chill temperature is below 20°F.

As much as possible, work that exposes personnel to the cold will be done during the warmest hours of the day. Inactivity in cold conditions will be kept to a minimum.

Frequent short breaks in warm, dry shelters will be taken. Vehicles will be equipped with supplies in case the vehicle becomes inoperable (e.g., blanket, dry clothing, water, food, a shovel).

The following PPE should be utilized during work in cold environments:

Workers should be equipped with insulated dry clothing when the ambient air temperature is less than 40°F. Feet, hands, face, and head should be protected (40 percent of the body's heat can be lost when the head is exposed). Foot and hand wear may also need to be waterproof. Clothing should be layered so that adjustments can be made to changing environmental temperatures and conditions. For example, an outer layer to break the wind, a middle layer that will absorb sweat and retain insulation when wet, and an inner layer that allows ventilation.

In Water (the body loses heat up to 25 times faster than on land)

The following PPE should be utilized during work on or near (within 25') water when personnel are operating in cold environments:

Workers will be equipped with "Anti-Exposure/Flotation Coveralls" when the air and water combined temperatures are less than 120°F. The anti-exposure coverall suits should be designed to protect the wearer from foul or cold weather, and use closed-cell foam to offer flotation and hypothermia protection in the event of water immersion. Feet, hands, face, and head should be protected (40 percent of the body's heat can be lost when the head is exposed). Foot and hand wear may also need to be waterproof. Clothing should be layered so that adjustments can be made to changing environmental temperatures and conditions.

Cold-Related Illnesses

Hypothermia

Hypothermia occurs when the body temperature falls to a level where normal muscular and cerebral functions are impaired. Although it usually occurs in freezing air and water temperatures, it can occur in any climate if a person's temperature falls below normal. Symptoms should not be ignored and a supervisor, or whoever is available, should be notified as soon as hypothermia is suspected.

Initially, symptoms may include shivering, an inability to do complex motor functions, sluggishness, and mild confusion as the body temperature drops to around 95°F. As the body temperature falls, speech may become slurred, behavior may be irrational, simple motor functions may be difficult to do, and a state of "dazed consciousness" may exist. In severe states (below 90°F), heart rate, blood flow, and breathing will slow. Unconsciousness and full heart failure can occur.

First Aid

On Land

Call for emergency help and move the victim (unless other injuries prohibit their being moved) to a warm, dry area and replace wet clothing with warm, dry clothing or a blanket. Move the person carefully because movement can increase the irritability of the heart.

If the person is conscious and lucid, warm liquids can be provided, but **not** alcohol or caffeinated drinks. If possible, have them move their arms and legs to create muscle heat.

If the person is unconscious or unable to assist, place warm bottles/packs in the person's armpits, groin, neck, and head areas. **Do not** rub the person's body or place them in warm water.

Call for emergency help and get the victim out of the water. Move the person carefully because movement can increase the irritability of the heart. **Do not** remove clothing - button, buckle, zip, and tighten collars, cuffs, shoes, and hoods because the water trapped next to the body provides a layer of insulation that may slow the loss of heat. If it is you in the water, **do not** swim unless a floating object or person can be reached quickly because swimming uses the body's heat and reduces survival time by about 50 percent. If you are in the water and it is not possible to get out, conserve body heat by folding arms across the chest, keeping thighs together, bending knees, and crossing ankles. If another person is in the water with you, huddle together.

Frostbite

Frostbite occurs when the skin actually freezes, and deep frostbite can affect deeper tissues such as tendons and muscles. Frostbite usually occurs when temperatures drop below 30°F, but wind chill effects can cause frostbite at above-freezing temperatures. The ears, fingers, toes, cheeks, and nose are the most commonly affected body parts.

Initially, symptoms include an uncomfortable sensation of coldness. Tingling, stinging, or an aching feeling of the exposed area is followed by numbness. Frostbitten areas appear white and cold to the touch, and with deeper frostbite, the area becomes numb, painless, and hard and can turn black.

First Aid

Seek medical attention as soon as possible and treat any existing hypothermia first.

Warm liquids can be provided, but **not** alcohol or caffeinated drinks such as tea and coffee.

Do not rub the affected areas, but cover them with dry, sterile gauze or soft, clean bandages.

Do not try re-warming the affected area if you have not been specifically trained to do so and/or if there is a chance the affected area will get cold again.

Trench Foot

Trench foot is caused by a continuous exposure to a wet, cold environment. Symptoms include tingling and/or itching sensation, burning pain and swelling, and, in more extreme cases, blisters.

First Aid

Seek medical attention as soon as possible and move the victim to a warm, dry area.

Affected tissue can be treated with careful washing and drying and slight elevation. **Do not try re-warming the affected area if you have not been specifically trained to do so.**

Cold Stress Monitoring

Monitoring for cold stress is difficult and will be completed by the Site Safety Officer (SSO) by monitoring for symptoms and monitoring the weather conditions on a daily basis. The following table may be used as a guideline for establishing a work/rest regimen.

THRESHOLD LIMIT VALUES WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT

Air Temperature-Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
° C (approx.)	° F (approx.)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	-15° to -19°	Normal	1	Normal	1	75 min	2	55 min	3	40 min	4
-29° to -31°	-20° to -24°	Normal	1	75 min	2	55 min	3	40 min	4	30 min	5
-32° to -34°	-25° to -29°	75 min	2	55 min	3	40 min	4	30 min	5	Non-emergency work should cease	
-35° to -37°	-30° to -34°	55 min	3	40 min	4	30 min	5	Non-emergency work should cease			
-38° to -39°	-35° to -39°	40 min	4	30 min	5	Non-emergency work should cease					
-40° to -42°	-40° to -44°	30 min	5	Non-emergency work should cease							
-43° & below	-45° & below	Non-emergency work should cease									

NOISE EXPOSURE

The Occupational Safety and Health Administration (OSHA) generally consider any environmental condition where a person must shout to be heard from a distance of 3 feet a hazardous noise environment. Under these conditions, personnel must be protected through the use of appropriate hearing protective devices.

Hearing protection shall be worn:

- In any situation where normal conversation cannot be heard at a distance of 3 feet regardless of the source of the noise or where noise levels as measured with approved noise monitoring equipment is above 85 A-weighted decibels (dBA);
- When operating gasoline- or electric-powered machinery; and
- When working within 25 feet of operating heavy equipment (earth working equipment, etc.) because working around this type of equipment can result in exposure to hazardous levels of noise (levels greater than 90 dBA) earplugs or earmuffs will be worn.

The Project Health and Safety Manager (PHSM) may also choose to monitor employee exposure to potentially hazardous noise levels.

Compatible Materials - Tools and Equipment -	
Item	Compatibility
Hoses – Type and Connections	Petroleum service hoses with aluminum connections Methanol-UHMWPE with Stainless Steel fittings
Gaskets – Type	Viton gaskets are recommended
Packing Materials – Type	Methanol (Petroleum pads) or (Chemical pads)
Transfer Pumps – Type, Style, Material of construction including seals	Crude Oil: Aluminum diaphragm with Viton elastomers or 316 Stainless Steel diaphragm with Teflon/Viton elastomers Methanol: Stainless Steel Vane pump
Bolts – Type	
Hand Tools, Wrenches, Shovels, Etc.	Non-sparking tools are recommended when used around pure product

B. Employee training complying with section (e):

USES employees working on hazardous waste site have received 40-hours initial training required in 29 CFR 1910.120 (e)(i). USES employees receive an 8-hour refresher training course on an annual basis according to 29 CFR 1910.120 (e)(8). A certificate as required in Section (e)(6) is maintained for each employee at our Jackson, Mississippi Office: 1075 Mendell Davis Drive Jackson, Mississippi 39272. Our employees are encouraged to carry a picture I.D. card with the certification of each class attended indicated.

C. Personal protective equipment required to be worn on-site.

If more than one task is defined, then the personal protective equipment must be listed by each task in a given work area.

Compatible Materials - Personal Protective Equipment -	
Item	Compatibility
Chemical Protective Clothing – Type	Methanol: Tychem SL coveralls are recommended Crude Oil Tychem QC with Nexgen inner coverall
Flammable Environments	FRC Outer Garments
Chemical Gloves – Type/Length	Nitrile or PVC outer with Nitrile inner
Chemical Boots - Type	Rubber safety boots
Respirator Cartridge	GME P-100 if needed
Supplied Air Respirator Type, Model and Manufacture (SCBA, Air-line)	MSA Airhawk SCBA or MSA Premaire SABA

RESPIRATORY PROTECTION PROGRAM:

This program describes minimum requirements for respiratory protection against harmful vapors and oxygen deficient atmospheres used by personnel operating on this site when effective engineering controls for atmospheric contamination are not feasible. All respirator use shall be in accordance with USES SOP No.: US-HS-048. This program is designed to comply with the OSHA Respiratory Protection Standard 29 CFR 1910.134.

Minimum PPE:

Mobilization and Equipment Set Up:

Level D: FRC outer garment, steel toed safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed gloves.

Site Assessment:

Level D: FRC work uniform or coveralls, safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed, and leather work gloves. Note: Mod. Level B Personal Protective Equipment consisting of the following items: Pressure demand/ positive

pressure SCBA, in addition to FRC outer clothing may be required if air monitoring indicates potential toxic (> 5000 ppm CO₂) or flammable conditions (LEL > 10%).

Boom Deployment and Recovery:

Modified Level D: FRC outer coveralls, Nitrile or PVC outer gloves with Nitrile inner gloves, rubber (chemical) safety boots, Hardhat with face shield, safety glasses and hearing protection as needed, USCG-approved, Personal Flotation Device (PFD) when working on or near the water (within 25-feet).

Liquid Recovery with pads, snare and sorbent boom:

Modified Level D: FRC outer coveralls, Nitrile or PVC outer gloves with Nitrile inner gloves, rubber (chemical) safety boots, Hardhat with face shield, safety glasses and hearing protection as needed, If splash potential exists the following shall be utilized: Level D: Tychem SL, Tychem QC or Nexgen coveralls over FRC clothing, Nitrile or PVC outer gloves with Nitrile inner gloves, rubber (chemical) safety boots, Hardhat with face shield, safety glasses, hearing protection, (Available for employees working in hazardous noise areas), steel toed rubber safety boots or steel toed safety boots with latex boot covers USCG-approved, Personal Flotation Device (PFD) when working on or near the water (within 25-feet).

Vacuum Truck Operations:

Level D: FRC outer garment, safety toed safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed gloves. If splash potential exists the following shall be utilized: Level D: Tychem SL, Tychem QC or Nexgen coveralls over FRC clothing, Nitrile or PVC outer gloves with Nitrile inner gloves, rubber (chemical) safety boots, Hardhat with face shield, safety glasses, hearing protection, (Available for employees working in hazardous noise areas), steel toed rubber safety boots or steel toed safety boots with latex boot covers

Firefighting Operations:

Level D: Pump operations, FRC outer garment, safety toed safety boots, safety glasses or goggles, hard hat, hearing protection, Hand line operations may include, Modified Level B: Pressure demand/positive pressure SCBA, NFPA compliant Structural Fire Fighting Turnouts, Fire Helmet, hood, NFPA Leather gloves, Safety toed fire boots, and hearing protection as needed.

Operating Excavation equipment:

Level D: FRC outer garment, steel toed safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed gloves.

Methanol Transfer:

Level B: If respiratory hazards are present PPE may include: Tychem SL coveralls, outer coveralls with FRC inner, SCBA, Nitrile outer gloves with nitrile inner gloves, Chemical

safety boots with all suit interfaces taped, Hardhat with face shield, safety glasses or goggles and hearing protection as needed,

Train Wrecking Operations:

Level D: FRC outer garment, steel toed safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed gloves. Note: Mod. Level B Personal Protective Equipment consisting of the following items: Pressure demand/ positive pressure SCBA, in addition to FRC outer clothing may be required if air monitoring indicates potential toxic (> 10 ppm H2S) or flammable conditions (LEL > 10%).

Demobilization and Equipment Tear Down:

Level D: FRC outer garment, steel toed safety boots, safety glasses or goggles, hard hat, hearing protection, (Available for employees working in hazardous noise areas), reflective highway or railroad safety vest as needed gloves.

Add Ons/ Substitutions

Add waders to crewmembers performing on shore water spill clean-up.

Add Personal Flotation Device to crewmembers working on or over water.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE USES SITE SAFETY OFFICER, AND THE USES PROJECT MANAGER.

D. Medical surveillance requirements in accordance with section (f):

United States Environmental Services, (USES) maintains a Medical Surveillance program that is in accordance with 29 CFR 1910.120, section (f).

We offer our employees a medical examination upon employment prior to assignment, at least every twelve months unless the attending physician believes a longer interval is appropriate, at termination and reassignment where the employee would not be covered if they had not had an examination within the last six months.

As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible over-exposure to hazardous or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation.

USES records and reports for our Medical Surveillance program are on file at our Jackson, Mississippi Office 1075 Mendell Davis Drive Jackson, Mississippi 39272.

E. AIR SURVEILLANCE

This section specifies the surveillance activities that will take place during the project. The air monitoring strategy will be directed towards those constituents which present the greatest potential health hazard, and is described below.

Surveillance activities will achieve the following objectives: Characterize breathing zone (BZ) concentrations of site contaminants for comparison with Permissible Exposure Limits; Identify potential IDLH conditions, Determining the appropriateness of respiratory protective equipment; Characterize potential offsite emissions.

During the initial site assessment a detailed evaluation of site-specific characteristics should be performed by the site health and safety officer or his designee to further aid in the selection of personal protective equipment and engineering controls for the tasks to be performed. Based on the preliminary evaluation further air monitoring will be conducted to identify any Immediately Dangerous to Life and Health (IDLH) or other potentially dangerous conditions such as; the presence of flammable atmospheres, oxygen-deficient environments, and toxic levels of airborne contaminants. The monitoring will be performed with direct-reading instruments such as; combustible gas, oxygen, or hydrogen sulfide meters, colorimetric detector tubes, photoionization detectors or flame ionization detectors. Monitoring will be continuous when contaminants change, work begins on a different portion of the site, a different type of operation is initiated (i.e., skimming instead of pressure washing), or Hot Work (operating gasoline/propane powered equipment) or when employees begin handling leaking drums or containers, or working in areas with obvious free liquid contamination (i.e., spills, pools of product).

Personal Monitoring Action Limits

BREATHING ZONE AIR MONITORING ACTION LIMITS

MONITORING EQUIPMENT	HAZARD	ACTION LEVEL	ACTION
RAE Systems MultiRAE Plus PID Detector 11.7eV lamp	Total Volatile Organics*	≥ 1 ppm* $\geq 150^*$ ppm Total VOC	Conduct continuous monitoring and implement engineering controls or donn proper PPE
RAE Systems MultiRAE Plus LEL Sensor	Flammable gases & vapors	$\geq 10\%$ LEL $\geq 20\%$ LEL	Conduct continuous monitoring and implement engineering controls Stop work Exit Area

RAE Systems MultiRAE Plus O2 Sensor	Oxygen deficiency Oxygen enrichment	$\leq 19.5\% \text{ O}_2$ $> 22\% \text{ O}_2$	Level B or leave area Leave work area
RAE Systems MultiRae 4-gas CO Sensor	CO	$\geq 35 \text{ ppm}$	Conduct continuous monitoring and implement engineering controls or donn proper PPE
RAE Systems MultiRae 4-gas H2S Sensor	H ² S	$>=1 \text{ ppm for 15 minutes}^{**}$ $\geq 10 \text{ ppm}$	Conduct continuous monitoring and implement engineering controls or leave area Level B PPE
Rae Systems UltraRae Benzene Specific PID 9.8 eV lamp, 0-200 ppm tubes	Toxics in the liquid and vapor phases (Benzene) (USES PNP 6.03.04)	$\geq 0.5 \text{ ppm}$ $>1.0 \text{ ppm} - < 10.0 \text{ ppm}$ $\geq 10.0 \text{ ppm}$	Conduct continuous monitoring and implement engineering controls Level C Level B

*When the identity of these materials becomes known, action levels will be adjusted relative to Permissible Exposure Limits.

**Per USEPA Standard Operating Guidelines SOG#: P103-Oil Spill Respiratory Protection Recommendations

The following respiratory recommendations are from the **USEPA Standard Operating Guidelines SOG#: P103-Oil Spill Respiratory Protection Recommendations**

Benzene/VOC:

0.5 - 1.0 PPM; (recommended but not required) that workers don a respirator.

1 PPM for 4 hours; shall don a respirator for the remaining of the shift/work.

2 PPM for 2 hours; shall don a respirator for the remaining of the shift/work.

3 PPM for 1.5 hours; shall don a respirator for the remaining of the shift/work.

4 PPM for 1 hour; shall don a respirator for the remaining of the shift/work.

Exceed 5 PPM at any one time during the shift; shall don a respirator for the remaining of the shift/work.

A comprehensive air monitoring and sampling plan is provided by Conestanoga-Rovers and Associates and will be placed in Section K

F. Site control in accordance with a site control program required in section (d):

Access to the work site will be restricted to those individuals that meet USES's certification requirements. Personnel allowed on site should have been trained in accordance with the requirements of 29 CFR 1910.120, shall be under a medical monitoring program, and have been fit tested for donning respiratory protective equipment.

No unauthorized person will be permitted within the work area. All persons arriving or departing the site will be required to log in and out with the Site Safety Officer. All visitors to the site shall be escorted by the Site Safety Officer or his designee. All activities must be coordinated with and cleared through the On-Site Project Manager.

Initially, the entire site may be declared off-limits to non-emergency personnel. The Safety Officer or designee shall conduct initial air monitoring and site evaluation, after which Hazard Control Zones (hot, warm, and cold zones) and the appropriate levels of worker safety, equipment, health and safety protocols will be defined.

ACTION ITEM: The location of the Hazard Control Zones (hot, warm, cold), the Incident Command Post (ICP), the Staging area and emergency evacuation assembly points must be shown on the attached Site Diagram in section C.

A Warm Zone will be designated between the Hot and Cold (Support) Zone and will provide for:

- The Transfer of equipment from the Cold Zone to the Hot Zone.
- Decontamination of personnel, vehicles and equipment prior to moving from the Hot to the Cold Zone; and
- Physical separation between the Hot Zone and the Cold Zone.

A Cold Zone shall be designated in an area outside the Warm Zone which is below the established TLV/TWA. The Cold Zone shall be clearly marked and shall be secured from active or passive contamination from the Hot Zone. The Cold Zone shall be used for:

- Access and egress for all site operations.
- Location of incident support activities and facilities; and
- Staging for required site operations and equipment.

Describe location and designation of each zone:

Exclusion zone: TBD on the daily tailgate safety meeting

Contamination/
reduction zone: TBD on the daily tailgate safety meeting

Support zone: The Command area

Work zones shall be established, delineated, and communicated to all parties via the daily safety meeting.

Medical emergencies will be treated based upon severity. First aid will be administered on site for minor injuries. More severe injuries will be transported to a local medical facility. A serious injury or loss of consciousness will require summoning of the local Fire and EMS Departments.

G. Decontamination procedures in accordance with paragraph (k) of CFR 1910.120:

A decontamination station will be established in the area where gross contamination is anticipated in order to remove contaminant. PPE will be separately collected for proper disposal. All equipment (company owned and rental) will be decontaminated on-site. This must occur prior to removing any equipment and the decontamination rinseate will be collected and pumped into a temporary storage tank situated adjacent to the Decon area.

Decontamination Procedures may be as follows for personnel and equipment depending on contaminants and ensemble used.

Dry Decontamination: Remove all PPE by turning inside out beginning with outer gloves, coveralls, and boot covers placing them in waste drum or drum liner and then removing inner gloves placing them in waste drum or drum liner, in all cases personnel shall wash hands before leaving hazard area and eating or drinking.

Additional Decontamination Considerations: All site personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. Personnel decontamination will be conducted in the decontamination zone. Gross decontamination for PPE Levels A, B, C and D may include:

1. Boot wash/rinse
2. Outer glove wash/rinse
3. Wash and Rise outer coverall or vapor tight suit with prescribed solution
4. Monitor PPE with PID (VOCs) pH strips and Oxidizer strips as needed
5. Repeat steps 3 & 4 as necessary until clean
6. (level B) Remove SCBA outer coverall and deposit in lined drum
7. Remove boot covers/ Chemical boots and place into PPE transfer bin
8. (level A) Remove Vapor tight chemical protective Suit by rolling down, hang to dry for inspection and pressure testing
9. (level B) Remove outer gloves and dispose
10. (level A) Remove SCBA
11. Remove respirator face piece
12. Wash/rinse respirator face piece (inside and out) and hang for drying
13. Rinse hard hat (inside and out)
14. Remove inner coverall (if applicable)
15 Remove inner gloves

Decontamination of boots, gloves, and other reusable clothing will be performed before leaving the work area. Disposable clothing and supplies will be bagged and disposed of in

suitable receptacles (Open-Head Drum, Roll-Off Box). The following representative decontamination procedure will be employed before leaving the work area.

- Outer boots, gloves, and protective clothing will be decontaminated by physical removal of heavily soiled areas using brushes and a non-phosphate soap then rinsing with water.
- Decontamination effectiveness shall be determined by visual observation, and monitoring the equipment with oxidizer strips (potassium iodide starch), pH strips and a RAE Systems MultiRAE Plus PID Detector with a 10.6 eV lamp for VOCs and/or an instrument equipped with a product specific sensor.
- Remove outer gloves, boot covers and any accompanying tape and place in bag lined drum for disposal.
- Remove outer garments, boots, and inner gloves, in that order. The outer disposable garments shall be bagged, along with any tape or disposable items.
- If applicable, remove SCBA or APR respirator face piece and set aside for reuse or decontamination as appropriate.

Upon removal of inner protective gloves, boots, and Tyvek coveralls, personnel will leave the area and report to medical for monitoring of vitals. Personnel shall wash hands and face before leaving the work area, eating, drinking or smoking.

EQUIPMENT DECONTAMINATION

Sampling Equipment

Sampling equipment will be decontaminated in accordance with the project's Site Sampling and/ or QA Plan. Decontamination fluids will be collected and sampled. Fluids will be disposed of in accordance with sample results. A sampling equipment decontamination area will be established which will prevent the release of contaminated decontamination fluids.

Heavy Equipment

A central decontamination area should be used at each site to facilitate heavy equipment decontamination. All decontamination activities must be performed outside the exclusion zone and within a containment area like an earthen berm area, triple lined with 6-mil polyethylene sheeting or a secondary containment pool for a frac tank. This area will be known as the Decon Pad. The Decon Pad may be prepared by grading the site to allow for all rinsate/water to flow and accumulate on one end of the Decon pad for recovery. Tires or rail ties can be utilized under the tracks of excavators, dozers, and other tracked equipment to prevent damage to the pool or polyethylene liner. Temporary walls can be constructed to prevent water spray or mist from drifting away from the Decon Pad during decontamination of equipment. Equipment should be decontaminated by physical removal of heavily soiled areas using brushes and a non-phosphate soap then rinsing with water with a final wash using a 3,500 psi hot water pressure washer. Decontamination effectiveness may be determined by visual

observation, or monitoring the equipment with oxidizer strips (potassium iodide starch), pH strips or a RAE Systems MultiRAE Plus PID Detector with a 10.6 eV lamp for VOCs. Decontamination rinseate will be collected and pumped into a temporary storage tank situated adjacent to the Decon Pad. Decontamination should not occur during rainfall events to prevent excess accumulation of rinseate. Furthermore, the Decon Pad should be covered with polyethylene sheeting during rainfall events to prevent rain water from accumulating in the Decon Pad and increasing the amount of rinseate that must be handled.

H. Emergency response procedures in accordance with paragraph (I) for safe and effective responses to emergencies, including necessary equipment and supplies:

An emergency response to a chemical release or any emergency will require the immediate cessation of all site activities. All personnel will be required to return to a predetermined location for a head count. The USES emergency response plan will be completed according to the nature of the emergency. This plan must be completed prior to commencing the emergency response.

The following standard site safety and emergency procedures will be used by on-site personnel. The Safety Officer shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed.

- 1) ***Personnel Injury In the Hot Zone:*** Upon notification of an injury in the Hot Zone, the designation emergency signal (one Long blast (three seconds) of an Air Horn) shall be sounded. All site personnel shall assemble at the decontamination corridor for assignment. The Back-up Team shall take up a position at the leading edge of the decontamination corridor (i.e., Hot Zone/Warm Zone line) and await instructions to effect the rescue of the Entry Team.

The Safety Officer and On-Site Incident Commander should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Warm Zone. The on-site medical personnel shall initiate the appropriate first aid, and contact should be made for any ambulance and with the designated medical facility (if required).

- 2) ***Personnel Injury In the Cold Zone:*** Upon notification of an injury in the Cold Zone, the On-Scene Incident Commander and Safety Officer shall be notified. The Safety Officer will assess the nature, extent and cause of the injury. If the cause of the injury or loss of the injured person does not affect the performance of the site operations, the Safety Officer shall notify the On-Scene Project Manager. If the cause of the injury or the loss of the individual cant be determined the evacuation signal shall be sounded and all site personnel shall assemble at the decontamination corridor for assignment. The Back-up Team shall take up a position at the leading edge of the decontamination corridor (i.e., Hot Zone/Warm Zone line) and await instructions to affect the rescue of the Entry Team. On-site activities will stop until the added risk is removed or minimized
- 3) ***Personnel Protective Equipment Failure:*** If any site worker experiences a personal protective equipment failure, that person and his/her buddy shall notify the On-Scene Incident Commander and immediately leave the hazard area. The crew shall proceed directly to the decontamination corridor for decon processing.

- 4) ***Other Equipment Failure:*** If any other equipment on site fails to operate properly, the On-Scene Incident Commander and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Incident Action Plan (IAP) tasks, all personnel shall leave the hazard area until the situation is evaluated and appropriate actions taken.
- 5) ***Site Evacuation:*** In the event of a situation which warrants emergency evacuation of the incident scene, personnel shall be contacted by (one Long blast (three seconds) of an Air Horn radio, PA system, etc.) Assembly points shall be designated for each Division/Group Supervisor.

FIRE OR EXPLOSION

In the event of a fire or explosion, the local Fire Department will be summoned immediately. Upon their arrival, the Project Manager or designated alternate will advise the local Fire Department and the Site Fire Team Leader of the location, nature, and identification of all hazardous materials on site.

FIRE RESPONSE PROCEDURES

The procedures listed below are to be used immediately, without hesitation, upon discovery of any uncontrolled fire involving, or seriously threatening to involve, response personnel on site, in confined spaces, aboard vessels and/or operating a flammable product transfer system. The primary objectives are protect responders or site personnel in immediate danger, to cut off any fuel that is feeding or could feed the fire, to provide an alert that there is a fire, and to be prepared to call whatever assistance is needed. Generally, dry chemical, foam, CO₂ fire extinguishers, hand line capable of delivering foam or cooling streams, and/or master stream devices may be used for fighting fires at most sites and facilities. “Class C” extinguishers should be used for energized electrical fires; “Class B” preferably Purple K extinguishers should be used for flammable liquid fires.

1. Notify the Site Safety Officer, Site Fire Team Leader or designee and the Project Manager. Inform them of the location and type of fire so that countermeasures can be quickly organized.
2. The Site Fire Team Leader or designee will investigate and assess the fire and direct efforts to contain, control, or extinguish it. The Site Fire Team Leader or designee will immediately call for outside assistance if assessment reveals that the fire response is beyond on site fire suppression capabilities.
3. If necessary, the Site Fire Team Leader or designee will call the Emergency Response Organizations listed in the Site Specific Safety Plan.
4. Shut down all equipment in use if it is safe to do so.
5. Close any isolation devices that can be reached without risk, starting with those closest to the fire.
6. Use the proper type of extinguishing agent and delivery system. Do not use water on an energized electrical fire. Water is generally not the appropriate extinguishing agent for liquid fuel fires, but may be used to cool other pieces of equipment or to push the fire away from a valve that can be closed to isolate the fuel flow. Foam is the preferred extinguishing agent for larger “Class B” fires and may be delivered using hand lines or master stream devices.
7. When fighting a fire, direct the stream from the extinguisher or hand line at the base of the fire from upwind and the sides keeping protective streams between the fire and any response personnel in immediate danger. Do not fight a fire from the downwind side.

8. If efforts to extinguish the fire using portable extinguishers are not immediately effective and the fire is within the containment system area, the appropriate foam delivery system should be activated. Direct cooling streams on tanks exposed to the fire to prevent failure of the vessel.
9. If necessary, evacuate the affected area and proceed to the designated evacuation assembly area, as directed by the Site Fire Team Leader or designee.
10. If necessary, station individual(s) to direct the personnel evacuation and the fire trucks. Be sure fire lanes and hydrants are clear.
11. After the fire is extinguished, the Site Fire Team Leader or designee will conduct an inspection.
12. The Site Fire Team Leader or designee should evaluate the situation and determine whether environmental cleanup is needed and shall coordinate those operations with other personnel or other personnel as assigned to facilitate the cleanup.
13. With the approval of the Site Fire Team Leader or designee, go through the debris, spread it out, and cool any hot spots.
14. After everything is cold, clean up all debris and dispose of it properly.
15. The Site Fire Team Leader or designee shall prepare an incident report.
16. Operations on site will not be restarted until after the Site Fire Team Leader or designee makes a full inspection and grants permission.

The following emergency escape routes are designated for use in those situations where egress from the Hot Zone cannot occur through the decontamination line (describe alternate routes to leave area in emergencies):

Primary:	TBD during the daily tailgate safety meeting
Secondary:	TBD during the daily tailgate safety meeting

Once the evacuation takes place, a head count should be taken as soon as possible. Any unaccounted personnel must be immediately reported to the On-Scene Incident Commander by the quickest means possible.

- 6) ***Post Evacuation Operations:*** When an on-site emergency results in evacuation of the Hot Zone, personnel shall not reenter until:
 1. The conditions resulting in the emergency have been corrected.
 2. The hazards have been reassessed.
 3. The Site Safety Plan has been reviewed.
 4. Site personnel have been briefed on any changes in the Site Safety Plan.

- 7) ***Other Safety Procedures*** (list any incident-specific procedures):

Emergency Telephone Numbers:

Table H-1: Emergency Assistance Telephone List	
Emergency Assistance Organization	Telephone Number
Hospital Address Forrest General Hospital 6051 Hwy 49 Hattiesburg, MS 39404	Emergency Room: General: (601) 268-2000
Ambulance/Rescue Squad	911 or 601-964-8461
Fire	911 or 601-964-8461
Local Law Enforcement	911 or 601-964-8461
USES 24 Hour	(601) 372-3232
MSDEQ 24 hour Emergency line	(601) 352-9100
EPA Emergency Response Team	(732) 321-4398
National Poison Control Center	(800) 222-1222
Chemtrec (24 hours)	(800) 424-9300

Basic First Aid Procedures:

1. Eyes:
 - a. Begin immediate eye irrigation with cool water for at least 15 minutes with eyelids held open by gently separating them with the fingers.
 - b. Get medical attention promptly.
2. Skin:
 - a. Immediately flush with large amounts of water.
 - b. Remove contaminated clothing, including shoes, and wash with soap and water.
 - c. Get medical attention.
3. Report all injuries, First aid for cuts or punctures may include: debrieding, washing with soap and water, irrigating with hydrogen peroxide or alcohol and applying an antibiotic paste before bandaging

I. Confined space procedures.

A confined space entry permit is required prior to any body part breaking the plane or entry into any confined space. All confined space entries shall be conducted in accordance with

USES SOP No.: US-HS-053. All employees have received training in accordance with the Confined Space Regulations 29 CFR 1910.146.

J. Fall Protection procedures.

Site supervisors and site health and safety officer (SSO) is responsible for identifying fall hazards, making exposure determinations without regards to the use of personal protective equipment, obtaining the required fall protection equipment, and enforcing its use. Site supervisors and SSOs will verify that employees and subcontractors are properly trained before assigning them to work requiring fall protection. All fall protection plans, equipment and procedures shall be in accordance with USES SOP No.: US-HS-064 and shall comply with OSHA Fall Protection Regulations in 29 CFR 1926, Subpart M.

K. Spill containment procedures meeting the requirements of paragraph J CFR 1910.120

General Spill Procedure:

Upon discovering an emergency situation, personnel shall notify the site safety officer or their supervisor, who will evaluate available information and initiate an appropriate response. Site workers are alerted to emergencies through the use of an employee alarm system using a **single long blast** signal on an air horn.

Stop leak if possible and can be done safely. Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Use inert, non-combustible absorbant material to pick up any spilled materials (soda ash, chem-pads, gel sorbent, vermiculite, dry sand, and earth) Sweep and/or scoop up using non-sparking tools and placed in open head steel drums or recover free product with suction hoses, wash down the affected area with soap and water solution. Dispose of waste following USES's protocols or standards for waste disposal.

Spill containment

Provisions must be made for spill containment at any site where bulk liquids will be handled or stored.

Do work activities at the site include the handling of bulk liquids, oil, or chemicals (other than water)?	Yes	XXX	No
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If yes, describe spill containment provisions for the site:

Chemicals shall be stored at a predetermined storage facility

Generic Change Forms

GENERIC ATTACHMENT FOR CHANGES

Please make changes from the first page of the original plan, on this page. Write legibly the changes that are to be made and include the following information:

[illegible]

HASP Acknowledgement

Organization

Sign-In Sheet

Date: _____

This is to show that the following people have read the Health Safety and Work Plan and understand the contents.

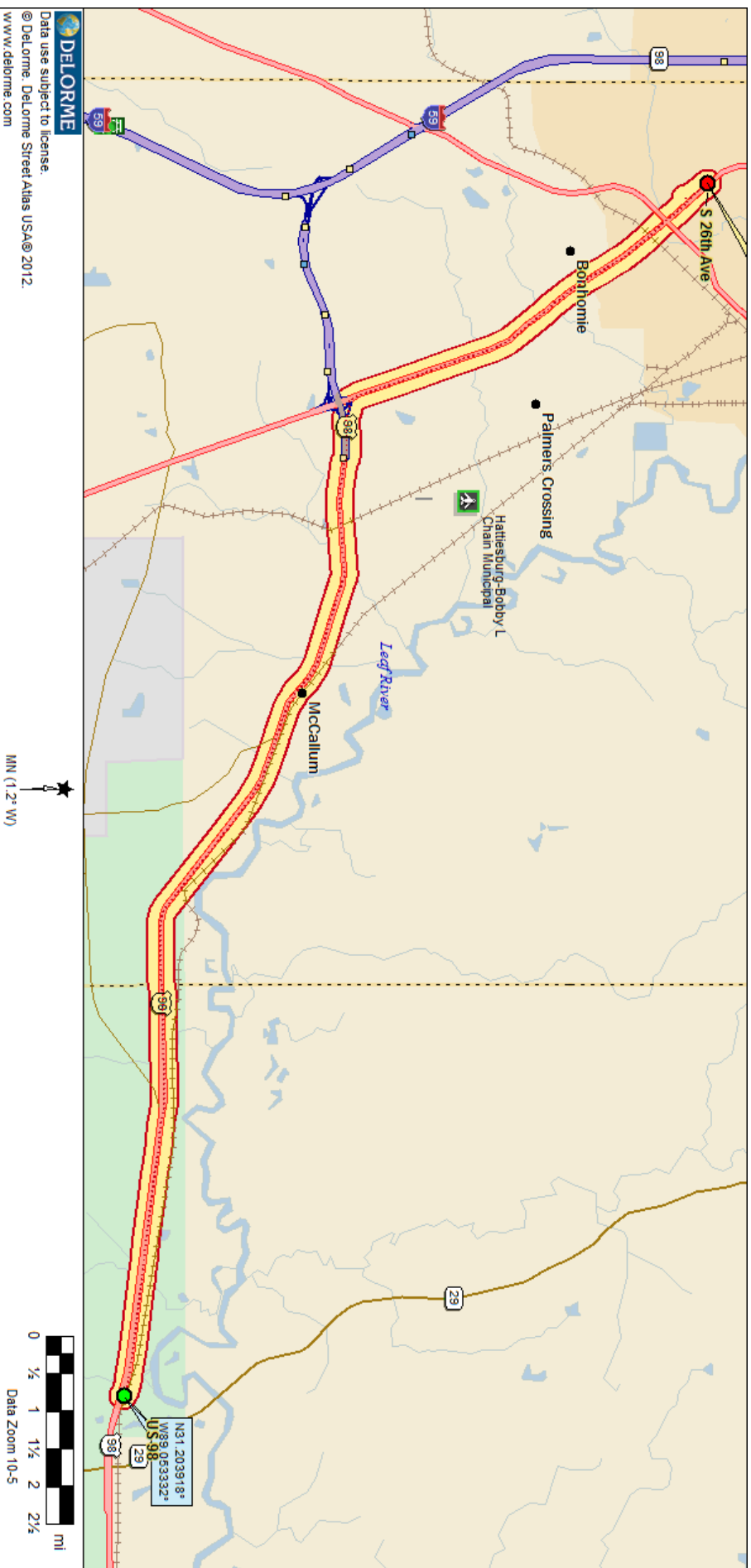
Organization

[illegible]

Tailgate Safety Meeting Attendance

Material Safety Data Sheets

Directions to Hospital



Applicable USES SOPs

Transfer Procedures

Entry Teams and Logs

ENTRY TEAMS

Entry Teams consisting of a minimum of two person crews will complete the following tasks and objectives:

Personnel	Tasks/Objectives
Team Leader	
Entry Team #1	
Entry Team #2	
Back-Up/Rescue Team (required for entry into IDLH areas)	
Decon Team	
Entry Team #3	
Entry Team #4	

NOTES:

ENTRY TEAMS

Entry Teams consisting of a minimum of two person crews will complete the following tasks and objectives:

Personnel	Tasks/Objectives
Team Leader	
Entry Team #1	
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Back-Up/Rescue Team	
(required for entry into IDLH areas)	
Decon Team	
Entry Team #3	
Entry Team #4	

NOTES: