



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

SITE HEALTH AND SAFETY PLAN

Delta Mills Superfund Site

Prepared for

U.S.EPA Region 4

June 13, 2014



**Environmental Restoration LLC
1666 Fabick Drive
Fenton, MO 63026
www.erllc.com**



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

SITE HEALTH AND SAFETY PLAN

PCBs Waste Oil Disposal and Decontamination of Bulk Storage Tanks

I hereby certify that the enclosed Site Health and Safety Plan, shown and marked in this submittal, has been prepared in accordance with OSHA 29 CFR 1910 and is proposed to be incorporated with this proposal. This Site Health and Safety Plan is submitted for client review and acceptance.

Plan Preparer:

	720-841-9151
_____ Matt Carrera Project Manager Environmental Restoration LLC	_____ Date Phone Number

Plan Approval:

	708-333-9915
_____ Nick Michailides Manager, Health and Safety Environmental Restoration LLC	_____ Date Phone Number

Plan Approval:

	404-263-8775
_____ Brian Englert EPA Region 4 On Scene Coordinator	_____ Date Phone Number



ENVIRONMENTAL
RESTORATION, LLC

SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE



ENVIRONMENTAL
RESTORATION, LLC

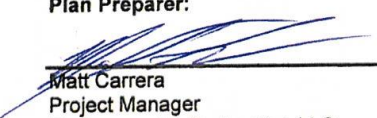
SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE

SITE HEALTH AND SAFETY PLAN

PCBs Waste Oil Disposal and Decontamination of Bulk Storage Tanks

I hereby certify that the enclosed Site Health and Safety Plan, shown and marked in this submittal, has been prepared in accordance with OSHA 29 CFR 1910 and is proposed to be incorporated with this proposal. This Site Health and Safety Plan is submitted for client review and acceptance.


Plan Preparer:


Matt Carrera
Project Manager
Environmental Restoration LLC


Date

720-841-9151
Phone Number


Plan Approval:


Nick Michailides
Manager, Health and Safety
Environmental Restoration, LLC

6.23.14
Date

708-333-9915
Phone Number

Plan Approval:


Brian Englert
EPA Region 4
On Scene Coordinator

06/20/14
Date

404-263-8775
Phone Number



TABLE OF CONTENTS

1.0	INTRODUCTION AND SITE ENTRY REQUIREMENTS
1.1	Safety Policy Statement
1.2	Daily Safety Meetings
1.3	Site Specific Training and Acknowledgment
1.4	Key Personnel
2.0	ROLES AND RESPONSIBILITIES
2.1	Project Manager
2.2	Site Superintendent
2.3	Health and Safety Officer
2.4	Project Health and Safety Manager
2.3	Other
3.0	SITE BACKGROUND AND SCOPE OF WORK
3.1	Site Background
3.2	Scope of Work
4.0	HAZARD ASSESSMENT
4.1	Chemical Hazards
4.2	Task Specific Hazards and Controls
4.3	General Physical Hazards
5.0	TRAINING REQUIREMENTS
5.1	Project Training Requirements
5.2	Visitor Indoctrination
6.0	PERSONAL PROTECTIVE EQUIPMENT
6.1	Level A
6.2	Level B
6.3	Level C
6.4	Modified Level D
6.5	Level D
6.6	Decision to Upgrade/Downgrade PPE
6.7	Project Personal Protective Equipment Requirements
6.8	Respiratory Protection Program
7.0	MEDICAL MONITORING REQUIREMENTS
7.1	Pre-employment Medical Examination
7.2	Site Specific Medical Examination Requirements
7.3	Annual Medical Exam
7.4	Suspected Exposure Medical Examination
7.5	Contractor Medical Examination Requirements
8.0	HEALTH AND HAZARD MONITORING
8.1	Routine Air Monitoring Requirements
8.2	Site Specific Air Monitoring Requirements
8.3	Integrated Personal Exposure Monitoring



TABLE OF CONTENTS (CONTINUED)

9.0	SITE CONTROL AND GENERAL FIELD SAFETY RULES
9.1	Work Zones
9.2	General Field Safety Rules
10.0	DECONTAMINATION PROCEDURES
10.1	Procedures for Equipment Decontamination
10.2	Procedures for Personnel Decontamination
10.3	Disposition of Decontamination Wastes
11.0	HAZARD COMMUNICATION
11.1	Material Safety Data Sheets
11.2	Container Labeling
11.3	Chemicals Brought to Site
11.4	Employee Training and Information
12.0	EMERGENCIES/INCIDENT/INJURIES
12.1	Emergency Contacts
12.2	Additional Emergency Numbers
12.3	Emergency Equipment Available On-Site
12.4	Incident Reporting/Investigations
13.0	EMERGENCY RESPONSE CONTINGENCY PLAN
13.1	Personnel Responsibilities
13.2	Medical Emergencies
13.3	Fire or Explosion
13.4	Spills, Leaks, or Releases
13.5	Evacuation Routes

APPENDICES

A	SITE HEALTH AND SAFETY PLAN AMENDMENTS
B	SITE LOCATION MAPS AND HOSPITAL ROUTES
C	CHEMICAL HAZARD INFORMATION (MSDS)
D	APPLICABLE STANDARD OPERATING PROCEDURES
E	SITE HS INSPECTION FORMS
F	INCIDENT AND INVESTIGATION REPORT FORM
G	DAILY SAFETY MEETING RECORD
Z	SITE SPECIFIC TRAINING RECORD



GLOSSARY OF ACRONYMS

AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
COC	contaminant of concern
CFR	Code of Federal Regulations
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
dBA	decibel A-weighted
EMT	emergency medical technician
USEPA	United States Environmental Protection Agency
EZ	Exclusion Zone
HASP	Site Health and Safety Plan
HAZWOPER	Hazardous Waste Operation and Emergency Response
HMIS	Hazardous Materials Identification System
HSO	Health and Safety Officer
IDLH	immediately dangerous to life and health
kV	Kilovolt
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mg/m³	milligrams per cubic meter
MSDS	Material Safety Data Sheet
NFPA	National Fire Prevention Association
NIOSH	National Institute of Occupational, Safety and Health
OSHA	Occupational Safety and Health Administration
PM	Project Manager
PPE	personal protective equipment
Ppm	parts per million
SCBA	self-contained breathing apparatus
SS	Site Superintendent
SOP	Standard Operating Procedure
SOW	Scope of Work
WNV	West Nile Virus



1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed for EPA Region 4 Superfund Site Delta Mills (Site) project, to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received or conditions change. A written amendment will document all changes made to the plan. Any amendments to this plan will be included in Attachment A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

All work practices and procedures implemented on site must be designated to minimize worker contact with hazardous materials and to reduce the possibility of physical injury. All work will be performed in accordance with applicable Federal 29 CFR 1910 and 1926 health and safety regulations, including the Federal 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response regulation.

1.1 Safety Policy Statement

Environmental Restoration LLC places primary importance on the health and safety of each individual of this company. We will maintain a health and safety program that encompasses all regulatory requirements, industry standards and best management practices that will ensure a safe work environment. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and his or her co-workers. Only through such a cooperative effort can a safety program be in the best interest of all.

As a condition of employment, employees are required to work safely, observe safety rules and practices, and follow the instructions of their supervisors. Employees should be alert to unsafe conditions and promptly report them to their supervisors. Employees must be qualified to perform work assignments safely and notify their supervisor when they are not qualified or do not understand the assignment. Violating safe work procedures or failing to report work hazards, incidents, injury, or illness may be cause for disciplinary action, including termination.

Eliminating or controlling hazards is one way incident prevention will be provided. This will be accomplished through the use of engineering controls, safe work practices and personal protective equipment. Environmental Restoration LLC employees will be thoroughly trained in the above areas.

It is the responsibility of supervisors to ensure that safe work procedures, equipment, and resources are provided to employees and that information on hazards and protective measures are communicated through training and other methods.

Environmental Restoration LLC will comply with all applicable safety and environmental regulations and codes. Accepted safe work practices will be followed in all operations. Site specific safety rules and procedures will be established and followed for each project in response to Site specific contaminants, physical conditions and scope of work.

1.2 Daily Safety Meetings

Daily safety meetings will be held at the start of each shift to ensure that all personnel understand site conditions and operating procedures for that day, review any unsafe conditions or acts encountered, and to address worker health and safety concerns.

1.3 Site Specific Training and Acknowledgement

The Project Manager, or his designee, shall be responsible for informing all individuals assigned to this project of the contents of this plan and ensuring that each person signs the Site Specific Training Record in Attachment Z. By sign-



ing the Site Specific Training Record, individuals acknowledge receipt of this training and that they recognize the potential hazards present on-site and the policies and procedures required to minimize exposure or adverse effects of these hazards.

1.4 Key Personnel

Project/Task Order: R2 Used Oil Decon of PCBs	
Key Personnel	
Names and Titles	Contact Information
Brian Englert – OSC EPA	404-263-8775 (mobile) Email: Englert.brian@epa.gov
Matt Carrera – Response Manager	720-841-9151 (Mobile) Email: m.carrera@erllc.com
Nick Michailides – Project HS Manager	708-333-9915 (Office) 219-286-5359 (Mobile) Email: n.michailides@erllc.com
Subcontractors	
Company	Scope of Services

2.0 ROLES AND RESPONSIBILITIES

2.1 Response Manager (RM): Matt Carrera

The PM shall provide support and leadership for areas of responsibility to provide a safe work environment. The PM shall delegate authority and responsibility for program implementation and performance in their areas of responsibility. The PM shall manage the project and ensure all health and safety requirements are met.

2.2 Health and Safety Officer (HSO):

The ER Response Manager will also act as Site Health and Safety Officer for this project implementing the HASP.

Duties can Include:

- Providing a safe and healthful work environment.
- Facilitate daily safety meetings.
- Review and take action for unsafe acts or conditions encountered.
- Supervise confined space entries.
- Reporting and investigating all incidents.
- Ensure proper decontamination of personnel and equipment is accomplished.
- Ensure that air monitoring equipment is calibrated and operational.
- Conduct personal air monitoring as required.
- Inventory and inspect personal protective equipment (PPE) prior to personnel entries into exclusion zone.
- Ensure proper personal protective equipment is being utilized.
- Inspect first aid kits and fire extinguishers.



2.4 Project Health and Safety Manager (PHSM): Nick Michailides

The Project Health and Safety Manager provides support and leadership to the project to protect the health and safety of the employees and the public. This includes, but is not limited to, communicating on safety and health issues, providing training, establishing special hazard control programs, assisting or conducting incident investigations, making inspections and surveys, evaluating or developing new protective measures, accumulating and distributing incident statistics, and identifying requirements of safety and health laws and regulations.

2.5 Other:

Any persons who observe a health and safety hazard should immediately report observations/concerns to appropriate key personnel listed in Section 2.1 or 2.2 above.

3.0 SITE BACKGROUND AND SCOPE OF WORK

3.1 Site Background

The former Delta Mills facility consists of approximately 620 acres; the Delta Mills Removal Site consists of a 0.42 acre portion of the former Delta Mills facility consisting of two above-ground storage tanks (300,000 and 500,000 gallons) that had been used to hold No. 6 fuel oil and now contain PCB-contaminated oil, and a pump house where PCB spills have occurred. This 0.42 acre parcel is currently owned by Schwarz Wallace LLC. The remainder of the 620 acres has been purchased by Southern States Energy (SSE) and is being addressed as a "Brownfield" site under a Voluntary Cleanup Contract with South Carolina Department of Health and Environmental Control (SCDHEC) and is excluded from the Delta Mills Removal Site.

3.2 Scope of Work (SOW)

The scope of work includes the decontamination of all bulk storage tanks, piping, pumps, and associated equipment., placarding of containers, tanks and piping, and supporting the transport and disposal of wastes through manifests, loading transport vehicles, solidification.

ER shall furnish all labor, materials, equipment, tools, services and incidentals to complete the entire project. It is the intent of this scope of work that ER shall decontaminate all equipment and storage that was in contact with PCBs in oil.

4.0 HAZARD ASSESSMENT

This section is to be addressed in the daily tool box safety meeting as each task is to be initiated. Each Activity Hazard Analysis (AHA) is designed to develop awareness to chemical and physical hazards specific to each task. It would be impractical to repeat in complete detail each control measure and Standard Operating Procedure (SOP) for each job task. Sources, hazards and control measures will be addressed for each job task.

Specific work tasks with unique hazards and/or PPE requirements must be evaluated or reevaluated prior to beginning work. This task review will be led by Response Manager or Site HSO and will include knowledgeable individuals such as the worker(s) and the supervisor. PPE requirements, based on this assessment, will be included in Section 6 of the HASP or in the AHA for the specific task. All workers must be trained in the requirements of the HASP and the applicable AHAs prior to beginning work. The required PPE may be changed by the HSO, based on the results of additional air monitoring, or on task-specific needs. Downgrades will require the approval of the Project Health and Safety Manager unless otherwise permissible by the HASP.



The following section outlines the AHAs, Referenced Standard Operations Procedures (SOPs) and Chemical Hazards associated with this project. Applicable SOPs are available from ER's Health and Safety Database. AHAs will be developed for each of the SOW activities listed in Section 3.2 and submitted prior to the start of field work.

The AHAs should be revised for site-specific activities and reviewed with the work crew before commencing any activity. The following table lists ER health and safety SOPs that are applicable to this project.

Referenced SOPs:	
ER SOPs applicable to this project or task order:	
HS-01 Air Monitoring and Sampling HS-02 BBP Exposure Control Plan HS-06 Confined Space Entry HS-08 Decontamination Measures HS-10 Motor Vehicle Operations HS-12 Electrical Safety - General HS-15 Hazard Communication HS-16 Hearing Conservation HS-17 Heat Stress Safety HS-18 Heavy Equipment Operation	HS-24 Personal Protective Equipment HS-26 Respiratory Protection Program HS-27 Scaffolding Safety HS-28 Tank Cleaning & Pressure Washing HS-36 Proper Lifting Techniques HS-38 Fire Prevention Protection HS-49 Tool Safety and Inspection HS-50 First Aid HS-52 General Waste Management HS-53 Spill Prevention Response
Lifts Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Items to be lifted: N/A	Critical <input type="checkbox"/> Ordinary <input checked="" type="checkbox"/>
Excavations Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

4.1 Chemical Hazards

See Table : Summary of Analytical Results

Site Contaminants/Chemicals of Concern					
Chemical	Media	PEL	TLV	Route of Entry	Symptoms Acute/Chronic
Poly Chlorinated Biphenyls (PCB's)	Liquid/sludge	0.5 mg/m3 Carc.	0.5mg/m3 Carc.	Inhalation Absorption Ingestion Contact	Irritation eyes, chloracne; liver damage; reproductive effects; suspect carcinogen
Petroleum Hydrocarbons (Gasoline)	Liquid/sludge	None	300 ppm	Inhalation absorption Ingestion Contact	Irritation skin, eyes, mucous membranes; dermatitis; headache, blurred vision, dizziness, slurred speech, confusion; possible liver, kidney damage; potential carcinogen
Various Solvents (acetone)	Liquid/sludge	1000 ppm	750 ppm	Inhalation absorption Ingestion Contact	Eye irritation, drowsiness or dizziness, nausea, vomiting and diarrhea

The above listing should not be taken as a complete assessment of the hazards posed by materials at the Site. The known and unknown mixed chemical hazards at this site prevent a clear determination of the specific effects of discrete compounds. Therefore, personnel must be alert for symptoms of possible exposure such as unusual smells, stinging, burning eyes, nose and throat, skin irritation, as well as feeling extremely well, depressed, sleepy or tired. Symptoms must be immediately reported to the site supervisor.

4.2 Task Specific Hazards and Controls

This section is to be addressed in the daily tool box safety meeting as each task is to be attempted. Each Activity Hazard Analysis is designed to develop awareness to chemical and physical hazards specific to each task. It would



be impractical to repeat in complete detail each control measure and SOP for each job task. Sources, Hazards and Control Measures will be addressed for each job task.

Activity Hazard Analysis		
Job Task: Mobilization, Site Setup, and Demobilization		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Traffic related injury	- Driving motor vehicles	- Follow HS-10 Motor Vehicle Operation - Adjust controls/mirrors prior to operation - Utilized defensive driving techniques.
Struck by/caught between	- Vehicle & Equipment Operation	- Follow HS-10 Motor Vehicle Operation - Follow HS-18 Heavy Equipment Operation - Ensure outriggers are properly positioned for wheeled excavator/equipment - Only qualified drivers permitted to operate vehicles - Wear ANSI Type 2 high-visibility safety vest - Wear seat belts while in operation - Back up alarms functional and loud enough to hear over surroundings
Ergonomics	- Lifting and bending	- Follow HS-36 Proper lifting techniques - Use Buddy system - No individual lifting over 40 lbs. - Use mechanical means when feasible
Heat Stress	- Work in protective garments	- Cool break areas - Follow ER SOP HS-17 - Plenty of Fluids & breaks
Noise	- Heavy equipment/Hand tools	- Hearing protection required at all times when working with tools generating sound above 85db - Hearing protection required when operation open-cab equipment -
Fire	- Electrical devices/service	- Fire extinguishers with at least a 3A:40B:C rating shall be placed in when working
Electrocution	- Power tools/equipment	- Inspect all power cords prior to use document inspection per ER Assured Grounding Program SOP - Use GFCI on all connections - De-energize all circuits in building except for overhead lights and limited 110v receptacles. - Protect/elevate temporary power cords
Cuts/Punctures	- Sharp objects/edges	- Beware of sharp objects - Wear cut resistant gloves - Use safety utility knife - Always cut away from body
Slip/Trip/Fall	- Uneven terrain/debris	- Keep area organized - Identify/mark hazards - Remove debris from walking/ working surfaces
Elevation	- Man Lift	- Always use approved lanyard - Always wear full body harness - Anchor to manufacture's approved points

Activity Hazard Analysis		
Job Task: Industrial (Sludge Master) Vacuum Operation		
Personal Protective Equipment: - Level C when in tank at end of hose - Level D for outside operator		
Hazard	Sources	Control Measures
Chemical Exposure	- Chemicals in drums, totes, buckets, and small containers	- Avoid contact - Prior to retrieval secure containers to prevent leakage or splash hazard - Use appropriate sampling techniques with drum thieves - Use proper field categorization techniques



	- Chemicals in vats, tanks	<ul style="list-style-type: none"> - Use proper bulking techniques based on sound field categorization results - Bulk only like materials based on field categorization - Splash prevention measures/ face shields- visqueen shield around drums - If possible have thermometer near for temperature changes - After drum is full leave container open for a period of time - Implement proper handling in accordance with HS-11 Drum Handling - Control work area to authorized personnel only - Utilize proper PPE per section 6.0 of this HASP - Perform air monitoring per section 8.0 of this HASP - Implement proper decontamination procedures per section 10.0 - Construct proper containment around storage area
Suction	- Vacuum hose end	<ul style="list-style-type: none"> - Avoid end of hose during suction operations - Radio communication shall be maintained at all times between operator and interior vacuum personnel - All vacuum personnel shall be prepared to cut hose to break suction at end - Vacuum trailers shall be equipped with an auto stop button attached to a minimum 100' cord and shall be inspected prior to each use
Heat Stress	<ul style="list-style-type: none"> - Seasonal Temperatures - Work in protective garments 	<ul style="list-style-type: none"> - Cool break areas - Follow ER SOP HS-17 - Plenty of Fluids & breaks
Struck by/caught between	- Heavy Equipment	<ul style="list-style-type: none"> - Only qualified operators permitted to operate - Wear ANSI Type 2 high-visibility safety vest - Properly functioning back up alarms
Noise	<ul style="list-style-type: none"> - Vacuum Engine - Vacuum Hose Suction 	<ul style="list-style-type: none"> - Hearing protection shall be utilized at all times during operation
Cuts/Punctures	<ul style="list-style-type: none"> - Sharp Objects – Nails, etc. - Cutting vacuum hose 	<ul style="list-style-type: none"> - Beware of sharp objects - Wear leather gloves - Use safety utility knife - Always cut away from body
Spill	- Fueling	<ul style="list-style-type: none"> - Spill kits shall be staged near vacuum units - Employees shall be instructed on proper fueling operations - Fueling operation must be attended at all times
Mechanical Failure	- Vacuum Unit/ Hydraulic Unit	<ul style="list-style-type: none"> - Perform and document daily inspection of equipment - Maintain communications between attic personnel and operator

Activity Hazard Analysis		
Job Task: Decontamination Operations (tank floors, walls, ceiling)		
Personal Protective Equipment: Level C		
Hazard	Sources	Control Measures
Chemical Exposure	- Chemicals in tanks	<ul style="list-style-type: none"> - Avoid contact - Secure containers to prevent leakage or splash hazard - Use appropriate sampling techniques with drum thieves - Use proper field categorization techniques - Splash prevention measures/ face shields- visqueen shield around drums - If possible have thermometer near for temperature changes - Implement proper handling in accordance with HS-11 Drum Handling - Control work area to authorized personnel only - Utilize proper PPE per section 6.0 of this HASP - Perform air monitoring per section 8.0 of this HASP - Implement proper decontamination procedures per section 10.0 - Construct proper containment around storage area



Activity Hazard Analysis		
Job Task: Decontamination Operations (tank floors, walls, ceiling)		
Personal Protective Equipment: Level C		
Hazard	Sources	Control Measures
Lacerations	- Pressure washer operation	<ul style="list-style-type: none"> - Operate pressure washer per manufactures instructions - Pressure washer must be equipped with safety shut-off Inspect hose prior to each use - Do not point wand at other individuals - Wand must be at least 48" in length - Wear splash shield and safety glasses when not wearing respirator - Never use for personnel decontamination
Confined Space	- Tanks	<ul style="list-style-type: none"> - Follow HS-06 Confined Space Entry - Permit required for all tank entries - Air monitoring required prior to entry and on a continuous basis - Intrinsically safe equipment required for use in tanks
Fire	<ul style="list-style-type: none"> - Site chemical (flammable liquids/solids) - Electrical devices/service 	<ul style="list-style-type: none"> - Intrinsically safe equipment required for use in tanks - Perform air monitoring per section 6.0 of this HASP - Fire extinguishers with at least a 3A:40B:C rating in when working - Inspect all electrical cords and equipment prior to use
Ergonomics	- Lifting and bending	<ul style="list-style-type: none"> - Buddy system/Proper lifting techniques - No individual lifting over 40 lbs.
Struck by/caught between	- Vehicle & Equipment Operation/Traffic	<ul style="list-style-type: none"> - Only qualified drivers permitted to operate vehicles - Wear ANSI Type 2 high-visibility safety vest - Wear seat belts while in operation
Heat Stress	<ul style="list-style-type: none"> - Seasonal Temperatures - Work in protective garments 	<ul style="list-style-type: none"> - Cool break areas - Follow ER SOP HS-17 - Plenty of Fluids & breaks
Noise	- Heavy Equipment, Diaphragm Pumps, Air compressor, Hand Tools	- Hearing protection required at all times when working near pumps, air compressors, hand tools and heavy equipment above 85db
Electrocution	- Power tools/equipment	<ul style="list-style-type: none"> - Inspect all power cords prior to use - Use GFCI on all connections
Cuts/Punctures	<ul style="list-style-type: none"> - Sharp Objects – Sheet Metal/ - Nails/screws 	<ul style="list-style-type: none"> - Beware of sharp objects - Wear cut resistant gloves - Use safety utility knife - Always cut away from body
Slip/Trip/Fall	<ul style="list-style-type: none"> - Insufficient lighting - Slippery tank walking/working surfaces - Uneven terrain/debris 	<ul style="list-style-type: none"> - Install temporary lighting in tanks - Use headlamps as required - Keep area organized - Identify/mark hazards - Remove debris from walking/ working surfaces
Fall from Elevation (Both Tanks on site are approximately 40' in height)	- Scaffold construction, use, and dismantlement	<ul style="list-style-type: none"> - Subcontractor Chicago Scaffolding shall be used for installation - Subcontractor shall submit safety procedures for approval - ER HS-27 Scaffolding Safety shall be incorporated - Fall protection in accordance with 1926.502(d) shall be used - A competent or qualified person shall be designated prior to setup

4.3 General Physical Hazards

Physical/Environmental Hazard Analysis		
Hazard	Pre Planning to Control Hazard	Active Control Measures
Electrical	<ol style="list-style-type: none"> 1. Locate and mark existing energized lines. 2. De-energize lines if necessary to perform work safely. 3. All electrical circuits will be grounded. 4. All 120 volt single phase which are not a part of the permanent wiring will have a ground-fault interrupter in place. 5. Temporary wiring will be guarded, buried or isolated by elevation to prevent accidental contact by personnel or equipment. 6. Evaluate potential for high moisture/standing water areas and define special electrical wiring needs-typically requirement for low voltage 	<ol style="list-style-type: none"> 1. Utilize Qualified Electrical Contractor for any new or temporary electrical construction. 2. Ensure electrical equipment/material meet all local, state and federal code and specifications 3. Use GFCI for all power tool usage.



Physical/Environmental Hazard Analysis		
Hazard	Pre Planning to Control Hazard	Active Control Measures
Ergonomic	<p>lighting systems.</p> <ol style="list-style-type: none"> 1. All operations evaluated for ergonomic impact. 2. Procedures written to define limits of lifting, pulling, etc. 3. Procedures to define how personnel will utilize proper ergonomic concepts and utilize mechanical material handling equipment. 4. Necessary mechanical material handling equipment specified and ordered for project. 	<ol style="list-style-type: none"> 1. Proper body mechanics techniques stressed and enforced on a daily basis. 2. Mechanical handling equipment maintained and utilized. 3. Proper body mechanics stressed in scheduled safety meetings. 4. Injuries reported and medically treated if in doubt about severity. 5. Operations changed as necessary based on injury experience or potential. 6.
Existing Site Topography	<ol style="list-style-type: none"> 1. Survey site prior to layout. Identify areas unsafe for personnel or equipment due to physical conditions. 2. Identify/locate existing utilities. 3. Determine impact of site operations on surrounding properties, communities, etc. 4. Identify mechanized equipment routes both on site and onto and off the site. 5. Layout site into exclusion and contamination reduction zones based on initial site evaluation. 	<ol style="list-style-type: none"> 1. Awareness to work environment - regular inspection/audits to identify changing conditions. 2. Shut down operations when unknown conditions encountered.
Fires & Explosions	<ol style="list-style-type: none"> 1. Evaluate all operations for fire and explosion potential. 2. Define specific procedures for unique operations presenting unusual hazard such as flammable tank demolition. 3. Ensure that properly trained personnel and specialized equipment is available. 4. Define requirements for handling and storage of flammable liquids on site, need for hot work permits and procedures to follow in the event of fire or explosion. 5. Define the type and quantity of fire suppression equipment needed on site. 6. Coordinate which local fire fighting agencies to discuss unique fire hazards, hazardous materials, etc. 7. Ensure site operations comply with 29CFR 1910.157(g). 	<ol style="list-style-type: none"> 1. Inspect fire suppression equipment on a regular basis. 2. Store flammables away from oxidizers and corrosives. 3. Utilize Hot Work Permit for all hot work on-site. 4. Follow any site specific procedures regarding work around flammables. 5. Review and practice contingency plans. 6. Discuss on regular basis at scheduled safety meetings.
Flammable Vapor and Gases	<ol style="list-style-type: none"> 1. Evaluate site to determine sources of likely flammable gas or vapor generation. 2. Develop specific procedures to be followed in the event of exposure to flammables. 3. Specify specialized equipment needs for inerting flammable atmospheres, ventilating spaces and monitoring flammable vapor concentrations. 4. Define requirements for intrinsically safe equipment. 5. Develop contingency plan to follow in the event of fire or explosion. 	<ol style="list-style-type: none"> 1. Calibrated monitoring equipment available and utilized by trained personnel whenever working where flammable gas or vapor is present. 2. Monitoring performed at regular frequency and in all areas where vapor could generate or pool. 3. Equipment and operations shut down when threshold levels are exceeded. 4. Contingency plans reviewed regularly by all involved personnel. 5. Work areas are carefully inspected to look for possible ignition sources. Sources are removed. 6. Operations shut down if specific task procedures can't be followed to the letter. 7. Fire Prevention & Fire Extinguishers, respectively
Heavy Equipment Operation	<ol style="list-style-type: none"> 1. Define equipment routes and traffic patterns for site. 2. Insure that operators are properly trained on equipment operation for all equipment required on project. 3. Define safety equipment requirements, including back up alarm and roll over, for all equipment on site. 4. Define equipment routes and traffic patterns for site. 5. Implement SOP of requiring operators to safety inspect equipment on a daily basis in accordance with manufacturer requirements. 6. Evaluate project requirements to ensure that equipment of adequate capacity is specified. 	<ol style="list-style-type: none"> 1. Equipment inspected as required. 2. Equipment repaired or taken out of service. 3. Ground spotters are assigned to work with equipment operators. 4. Utilize standard hand signals and communication protocols. 5. Personnel wear the proper PPE; utilize hearing protection, gloves for handling rigging, etc. 6. Equipment safety procedures discussed at daily scheduled safety meetings.



Physical/Environmental Hazard Analysis		
Hazard	Pre Planning to Control Hazard	Active Control Measures
		7. Personnel do not exceed lifting capacities, load limits, etc. for equipment in question. 8. Personnel follow basic SOP's which prohibit passengers on equipment, activating brakes and grounding buckets, securing loads prior to movement, etc. 9. Heavy Equipment Operations
Illumination	1. Evaluate all operations and work areas to determine lighting requirements. 2. Specify specialized lighting requirements including explosion proof, intrinsically safe, lighting needs. 3. Determine if nighttime outdoor operations are necessary. 4. Evaluate tasks to be performed and number of light plants necessary to allow operations. 5. Ascertain if outdoor lighting from nighttime operations will have an impact on surrounding communities.	1. Inspect specialized equipment and discard or replace as needed. 2. Add additional lighting to areas with lighting deficiencies. 3. Inspect drop cords and portable lights on regular basis. Replace or repair as necessary. 4. Illumination
Noise	1. Local community noise standards examined. 2. Expected loud operations evaluated to determine compliance with community standards. 3. Loud operations scheduled for approved time periods. 4. Noise level standards established for equipment brought onto site. 5. Hearing protection requirements defined for personnel expected to have excessive exposures.	1. Personnel receive annual audiogram. 2. Personnel required to wear hearing protection. 3. Defective equipment repaired as needed. 4. Ongoing hearing conservation education promoted at scheduled safety meetings. 5. Medical evaluation following noise (impact) exposure if symptoms present themselves. 6.
Personal Injuries	1. Site operations will be evaluated for exposures with serious injury potential such as falling objects, pinch points, flying objects, falls from elevated surfaces, etc. 2. A written Fall Prevention Program will be developed if workers will be required to work at heights greater than 6 feet from unguarded work locations. 3. PPE requirements will be based on potential for injury.	1. Personnel will wear required PPE. 2. Specialized equipment such as rope grabs, winches, etc. will be inspected prior to each use. 3. Defective equipment will be immediately replaced. 4. All injury and near miss incidents will be reported to the HSO. 5. First aid/CPR trained person on site at all times. 6. First aid on site. 7. Transport for medical care if necessary. 8.
Small Equipment Usage	1. Site operations will be evaluated to determine need for specialized intrinsically safe, explosion-proof and UL approved equipment and instruments. 2. Implement requirement for G.F.I., double insulated tool usage, or assured grounding program in all outdoor operations, will be utilized. 3. Specify equipment needs to ensure that equipment used only for the purpose for which it is designed and to prevent abuse or misuse of the equipment. 4. Specify requirements for the inspections and maintenance of specialized equipment. 5. Specify that all equipment utilized on the project meets all OSHA requirements.	1. Inspect each tool prior to each use. 2. Ensure all guards are in use and properly positioned. 3. Ensure item being worked on is properly braced if necessary. 4. Get help when appropriate to hold or brace item being worked on. 5. Wear leather or other appropriate gloves in addition to level C PPE. 6.
Weather Conditions	1. Evaluate prevailing weather conditions for the site. 2. Contingency plans developed for likely severe weather conditions such as tornado, and extreme thunderstorm. 3. Provide for daily weather forecast service in extreme weather areas. 4. Plan to weatherize safety systems, such as showers and eye washes that would be impacted by extreme cold weather. 5. Order necessary specialized cold weather clothing. 6. Grounding and bonding requirements defined for thunderstorm areas. 7. Sheltered air conditioned break areas provided for extreme hot and cold weather zones.	1. Employees trained in contingency plan for severe weather conditions. 2. Emergency water sources inspected regularly in cold areas. 3. Weather service contacted regularly during storm conditions. 4. Supervisory personnel cease operations during extreme storm conditions (i.e., thunderstorms). 5. Personnel evacuate to safe assembly area. 6.



Physical/Environmental Hazard Analysis		
Hazard	Pre Planning to Control Hazard	Active Control Measures
Heat Stress	<ol style="list-style-type: none">1. Anticipate possible high temperatures (summer months).2. Be aware of heat stress symptoms, quit sweating, pale, clammy skin, dizziness	<ol style="list-style-type: none">1. Cool break area.2. Drink water.3. Buddy system/ awareness4. First aid on site.5. Medical care if symptoms persist.6.
Hurricane	<ol style="list-style-type: none">1. Monitor USCG A Storm Categories2. Monitor local CEMA Recommendations	<ol style="list-style-type: none">1. Prepare site for shutdown and evacuation if hurricane landfall imminent.2. Secure all equipment.3. Empty all containers if possible.

5.0 Training Requirements

This section describes ER's project training requirements and site visitor policy. Training of all personnel shall be in accordance with OSHA 29 CFR 1910.120 and the National Fire Protection Association (NFPA) standards.

5.1 Project Training Requirements

The training listed in Table 5-1 will be provided to project participants as noted. All required training will be documented and this documentation maintained onsite.

Project Training Requirements:		
Topic	Description	Personnel
General Training		
Site Safety and Health Plan	Site-specific hazards and control requirements, before commencement of field work. Includes training in proper use and care of PPE.	All project personnel
Activity Hazard Analysis	Activity-specific hazards, controls and training requirements for a specific phase or activity, prior to commencement of activity	Workers, supervisors and oversight personnel engaged in the activity
Daily Safety Briefing	In addition to plan-of-the-day and daily hazard reminders, often used to cover a specific topic; provided refresher training on various issues; or changes in hazards, controls or procedures.	All field workers, supervisors and field oversight personnel
Emergency Action Plan	Roles, responsibilities, recognition of emergency conditions, reporting and notification, evacuation and other procedures.	All project personnel, with detailed information on procedures for workers with special responsibilities
OSHA 40-Hour Hazardous Waste Operation (HAZWOPER) Training	General hazards and controls for hazardous waste activities at remediation sites, prior to performing work in an exclusion zone.	General site workers, supervisors, oversight personnel on HAZWOPER sites
OSHA 8-Hour Supervisor	Managing HAZWOPER work activities	Supervisors and management support staff on HAZWOPER sites
OSHA 8-Hour Refresher	Current annual refresher for HAZWOPER sites.	Workers, supervisors and oversight personnel engaged in the activity
Hazard Communication	Requirements for SDS, labels; hazards of site materials and controls; location of and access to inventories and SDS.	All project personnel potentially exposed to hazardous materials
Fire Extinguisher	General education on selection, distribution, and proper use of fire extinguishers.	All project personnel



Project Training Requirements:		
Topic	Description	Personnel
Special Training		
Confined Space Entry	Hazards associated and with and operational requirements when entering into a confined space	All project personnel assigned to an CSE
First aid/ Cardiopulmonary Resuscitation (CPR)	Red Cross, National Safety Council or other authorized course, with current refresher	At least 2 project personnel
Fall Protection	Fall (from elevation) hazards, fall protection techniques, especially proper use of personal fall arrest systems and rescue procedures.	Task-specific, workers exposed to fall hazards.
Lockout/Tagout	Site-specific energy control and verification procedures.	Authorized personnel working on de-energized systems, and affected employees whose work may be impacted by a lockout/tagout situation.
Other Heavy Equipment operations	Qualified by Construction Manager, Superintendent or Equipment Supervisor as documented on ER Equipment Operator Qualifications Form	Equipment Operators
Power tools (e.g. chain saws, chippers, powder-actuated tools, compressed air systems)	Hazards and proper use and maintenance as described in operations manual. Power-operated tool users certified by manufacturer.	Tool users

5.2 Visitor Indoctrination Policy

All site visitors will be required to review the daily tailgate safety issues and sign the visitor log. At a minimum, all visitors must be informed of the anticipated hazards and PPE requirements, designated work zones, escort procedures, and emergency procedures.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The following is a brief description of the personal protective equipment, which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment. The written Respirator Program will be maintained at the local and regional offices.

6.1 Level A Protection Shall Be Used When: (NOT ANTICIPATED)

- The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- Substances with a high degree of hazard to the skin are known or suspected;
- Chemical concentrations are known to be above Immediately Dangerous to Life and Health (IDLH) levels; or,
- Biological hazards requiring Level A are known or suspected.

6.2 Level B Protection Shall Be Used When: (NOT ANTICIPATED)

- The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible; and/or, Confined space entry may require Level B.
- Incomplete identification of gases and vapors, but not suspected to be harmful to skin or skin absorbable

6.3 Level C Protection Shall Be Used When:



- The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants; or,
- The substance has adequate warning properties and all criteria for the use of APR respirators has been met

Level C Protective Equipment at a Minimum Shall Consist of:

Air Purifying Respirator	Full face
Cartridges	OV/AG/P100P100
Chemical Resistant/Protective Coveralls	Poly-coated or equivalent
Inner Gloves	Nitrile
Outer Chemical Gloves	Latex
Outer Work Gloves	Leather*
Safety Shoes/Boots	Chemical protective boot covers
Hard Hat	ANSI approved
Reflective Safety Vests	ANSI Type 2 high-visibility
Modifications:	* Cut resistant gloves will be used when handling metal and other sharp objects.

6.4 Modified Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be within OSHA permissible limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Modified Level D Protection Equipment at a Minimum Shall Consist of:

Chemical Resistant/Protective Coveralls	Breathable SMS or equivalent
Safety Shoes/Boots	Steel toed/shank
Boot Covers (booties)	Latex
Work Gloves	Cotton or Leather*
Hard Hat	ANSI approved
Face Shield	As necessary
Reflective Safety Vests	ANSI Type 2 high-visibility
Safety Glasses	NIOSH approved
Modifications:	* Cut resistant gloves will be used when handling metal and other sharp objects.

6.5 Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be below OSHA permissible exposure limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Level D Protection Equipment at a Minimum Shall Consist of:

Standard Work Clothing	Long pants/sleeved shirt
Safety Shoes/Boots	Safety Toed/shank
Boot Covers (booties)	As Needed
Work Gloves	Leather or cut resistant*
Hard Hat	ANSI approved
Face Shield	As Needed
Safety Glasses	ANSI approved



Reflective Safety Vest
Modifications:

ANSI Type 2 high-visibility
* Cut resistant gloves will be used when
handling metal and other sharp objects.

6.6 Decisions to Upgrade/Downgrade PPE

All decisions to downgrade from Level B to C or D must be accompanied by air monitoring results. The Regional Safety Managers must be advised of on-site decisions to downgrade. All decisions must be documented with an Addendum to the Plan.

The following conditions will necessitate reevaluation of PPE use.

- commencement of a new work not previously identified
- change of job tasks during a work phase
- change of season/weather
- contaminants other than those identified in Safety Plan
- change in ambient levels of contaminants
- change in work which affects degree of chemical contact

6.7 Project Personal Equipment Requirements

Project Personal Protective Equipment Requirements:							
Activity	Respiratory Protection	Body Protection	Head Protection	Hand Protection	Eye/Face Protection	Foot Protection	Hearing Protection
Site Mobilization / Demobilization (Level D)	None	Standard Work Clothes	ANSI-approved hardhat	Leather or cut resistant work gloves	ANSI-approved safety glasses	ANSI-approved safety boots	Plugs or muffs when working in or around heavy equipment
Decontamination of tanks (Level C)	Full-face Air-purifying respirator with OV/P100 cartridges	Poly-coated or equivalent coverall	ANSI-approved hardhat	Nitrile inner/outer gloves	ANSI-approved safety glasses and face shield (acids)	Chemical resistant boots	Plugs or muffs when working in or around heavy equipment

Personal Protective Equipment Inspection and Care:

Inspection and care of PPE are covered in the ER Corporate SOP HS-24.

6.8 Respiratory Protection Program

ER shall implement the ER SOP HS-26 Respiratory Protection Program for its employees and subcontractors and train them on its contents. The program will be administered by the HSO.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. ER and subcontractors shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment.

7.0 **Medical Monitoring Requirements**

7.1 Pre-Employment Medical Examination

- a. Pre-employment medical examinations are required for persons working at hazardous waste sites.



- b. All examinations must be completed and documented prior to assignment to this site.
- c. All examinations will be conducted following parameters established by WorkCare™.

7.2 Site Specific Medical Examination

- a. N/A

7.3 Annual Medical Examination

The medical examination must have been within a 6-month period prior to on-site activity and repeated annually.

7.4 Suspected Exposure Medical Examination

- a. Following any suspected uncontrolled exposure to site contaminants, personnel should be scheduled for a special medical examination.
- b. The medical examination will be specific for the contaminants and the associated target organs or physiological system.
- c. Questions regarding the type of medical examination can be directed to ER's Vice President, Health and Safety.

7.5 Contractor Medical Examination Requirements

All subcontractors entering the contamination reduction or exclusion zone will have adequate medical surveillance satisfying 29 CFR 1910.120.10 (f).

8.0 HEALTH AND HAZARD MONITORING

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site.

8.1 Routine Air Monitoring Requirements

- Upon initial entry to rule out IDLH conditions;
- When the possibility of an IDLH condition or flammable atmosphere has developed;
- When work begins on a different portion of the site;
- Contaminants other than those previously identified are being handled;
- A different type of operation is initiated;
- Employees are handling leaking drums or containers or working in areas with obvious liquid contamination; and,
- During confined space work.

Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance performed will be entered in the site log and/or instrument log book.

8.2 Site Specific Air Monitoring Requirements

Health Hazard Monitoring:					
Real Time (Air, noise, heat, radiation, light)					
Activity	Target Analyte	Instrument	Frequency	Action Levels*	Actions/Upgrade and Rationale



Health Hazard Monitoring:					
Real Time (Air, noise, heat, radiation, light)					
Activity	Target Analyte	Instrument	Frequency	Action Levels*	Actions/Upgrade and Rationale
1. Initial Entry 2. Decon tanks	Organic Vapors	Photo –ionization Detector (PID) (MultiRAE Plus or equivalent)	Initial and periodic Continuous during CSE	Background – 25 ppm - Level D 25 ppm – 500 ppm - Level C >500 ppm Level B	Air-purifying respirator Supplied-air respiratory protection Evacuate area
	Flammables	Combustible Gas Indicator (MultiRAE Plus or equivalent)	Initial and periodic Continuous during CSE	> 10% LEL Evacuate area/space	Evacuate area Ventilate
	Oxygen	O ₂ Meter (MultiRAE Plus or equivalent)	Initial Continuous during CSE	<19.5% and >23.5% O ₂	Evacuate area/space
	**Temperature Extremes Heat	Thermometer In conjunction with web site www.intellicast.com for heat index, rel hum% measurements if WBGT is not available	Observe workers for signs of heat stress and implement physiological monitoring if warranted. Every 2 hours Every 60 minutes Every 30 minutes	80-90 °F HEAT INDEX 90 -105 °F HEAT INDEX 105 – 130 °F HEAT INDEX >130 °F HEAT INDEX	Implement work rest schedule per HS-17

* The reading must be sustained for at least one (1) minute in the breathing zone.

**When permeable work clothes are worn (street clothes or clothing ensembles over street clothes), regularly observe workers for signs and symptoms of heat stress and implement physiological monitoring as indicated below. This should start when the heat index reaches 80°F (see table above), or sooner if workers exhibit symptoms of heat stress. These heat index values were devised for shady, light wind conditions. Exposure to full sunshine can increase the values by up to 15°F. In addition, strong winds, particularly with very hot, dry air, can be extremely hazardous.

When wearing impermeable clothing (i.e. – clothing doesn't allow for air or water vapor movement such as Tyvek), physiological monitoring as described below shall be conducted by all ER employees and their subs when the ambient temperature reaches 80°F or at a lower temperature when workers begin to exhibit signs and symptoms of heat stress.

9.0 SITE CONTROL AND GENERAL FIELD SAFETY RULES

9.1 Work Zones

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons.



At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry.

Site work zones will include:

Clean Zone/Support Zone (SZ)

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and site laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. All personnel arriving in the support zone will upon arrival, report to the command post and sign the site entry/exit log. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

- 1) Location of Clean Zone: Area outside of the tanks

Contamination Reduction Zone (CRZ)

The contamination reduction zone will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. All personnel and equipment should exit via the decontamination area. A separate CRZ area will be established for heavy equipment.

- 1) The CRZ is a buffer zone between contaminated and clean areas and will be identified by yellow banner guard or barricade fencing.
- 2) Decontamination line is located: At egress point of the tanks

Exclusion Zone/Hot Zone (EZ) : Inside of the tanks

The exclusion zone will be the "hot-zone" or contaminated area inside the site building. Entry to and exit from this zone will be made through designated points within and outside the building and all personnel utilizing level C protection will be required to sign the hot zone entry/exit log located at the decon area. Appropriate warning signs to identify the EZ should be posted (i.e. "DANGER - AUTHORIZED PERSONNEL ONLY," "PROTECTIVE EQUIPMENT REQUIRED BEYOND THIS POINT," etc.) Exit from the EZ must be accompanied by personnel and equipment decontamination as described in Section 10.0.

- 1) Will be identified during Daily Tailgate Meetings.
- 2) General Safety Rules for EZ
 - a. wear the appropriate level of PPE defined in plan
 - b. do not remove any PPE
 - c. no smoking, eating or drinking
 - d. no horseplay
 - e. no matches or lighters
 - f. implement the communication and line of sight system

9.2 General Field Safety Rules

- Horseplay is not permitted at any time.
- All visitors must be sent to the command post.
- It is ER policy to practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs.



- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contamination by bagging.
- Eating, drinking, or smoking is permitted only in designated areas in the support zone.
- Cell phone use is not allowed in EZ, unless authorized by Project HS Manager.
- Cell phone use while operating equipment is not allowed.
- Cell phone use while operating motor vehicles must comply with applicable DOT regulations
- Hands and face must be thoroughly washed upon leaving the decontamination area.
- Beards or other facial hair that interferes with respirator fit will preclude wearing a respirator.
- All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- All personnel exiting the exclusion zone must go through the decontamination procedures described in Section 10.0.
- Safety Equipment described in Section 6.0 will be required for all field personnel.
- Personnel will only travel in vehicles where individual seats for each occupant are provided.
- Seat belts will be worn as required.
- Fire extinguishers will be available on site and in all areas with increased fire danger such as the refueling area.
- A minimum of two personnel will always be on site whenever heavy equipment is operated.
- Only necessary personnel need to be on or around heavy equipment.
- Employees will not interfere with or tamper in any way with air monitoring equipment.
- track hoes or other equipment with booms shall not be operated within 10 feet of any electrical conductor

Minimum Clearance from Energized Overhead Electric Lines

NOMINAL SYSTEM VOLTAGE	MINIMUM REQUIRED CLEARANCE
0-50 kV	10 feet
51-100 kV	12 feet
101-200 kV	15 feet
201-300 kV	20 feet
301-500 kV	25 feet
501-750 kV	35 feet
751-1000 kV	45 feet

- Visitor log will be maintained at the office. All personnel coming on site will sign in and out on a daily basis.
- Security will be maintained at the site by closing all doors except those utilized for site entry for project personnel during normal work hours. All lockable doors and entryways will be locked up in the evening.
- If unauthorized members of the public are found on site, contact RM immediately and do not leave the individual unattended.
- Visitors are not allowed in the work areas without authorization. Visitors must sign in at the Command Post and receive authorization to enter the site.
- Buddy System
 - The buddy system is mandatory at anytime that personnel are working in the exclusion zone, remote areas, on tanks, or when conditions present a risk to personnel.
 - A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while operating in the exclusion zone.
- Communication Procedures



- The crews should remain in constant visual contact while on site.
- The site evacuation signal will be 3 blasts on the air or vehicle horn.

10.0 DECONTAMINATION PROCEDURES

In general, everything that enters the EZ at this site must either be decontaminated or properly discarded upon exit from the EZ. All personnel, including any state and local officials must enter and exit the EZ through the CRZ. Prior to demobilization, contaminated equipment will be decontaminated and inspected before it is moved into the SZ. Any material that is generated by decontamination procedures will be stored in a designated area in the EZ until disposal arrangements are made.

NOTE: The type of decontamination solution to be used is dependent on the type of chemical hazards. The decontamination solution for this site is water. Decontamination solution will be changed daily (at a minimum) and collected and stored on-site until disposal arrangements are finalized.

10.1 Procedures for Equipment Decontamination

Following decontamination and prior to exit from the EZ, the RM shall be responsible for ensuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.

Equipment decontamination will consist of the following steps: Clean with soap and water solution.

10.2 Procedure for Personnel Decontamination

This decontamination procedure applies to personnel at this site wearing Level C protection. These are the minimum acceptable requirements:

Station 1: Equipment Drop

Deposit equipment used on-site (tools, sampling devices and monitoring instruments, radios, etc.) on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the EZ.

Station 2: Outer Boot and Outer Glove Wash and Rinse

For reusable PPE, scrub outer boots, outer gloves and/or splash suit with decontamination solution or detergent water. Rinse off using water.

Station 3: Outer Boot and Glove Removal

Remove outer boots and gloves. If outer boots are disposable, deposit in container with plastic liner. If not disposable, store in a clean dry place.

Station 4: Outer Garment Removal

Remove Chemical Resistant Outer Garments and deposit in container lined with plastic. Decontaminate or dispose of splash suits as necessary.

Station 5: Respiratory Protection Removal

Remove hard-hat, face-piece, and deposit on a clean surface. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off and store respiratory gear in a clean, dry location.

Station 6: Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 7: Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.



Eating, drinking, chewing gum/tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any areas where the possibility of contamination exists and is permitted only in the designated break area.

Personnel will not wear or bring contaminated clothing into the break areas.

10.3 Disposition of Decontamination Wastes

1. All equipment and solutions used for decontamination shall be decontaminated or disposed of with the established waste streams.

11.0 HAZARD COMMUNICATION

Each contractor will be responsible for maintaining a copy of their Hazardous Communication Program and SDS' on site. The following items are specific to this job site:

11.1 Safety Data Sheets

1. All available Safety Data Sheets will be maintained at the office in the Health and Safety Binder or readily available electronically.
2. SDS' will be available to all employees for review during the work shift.
3. See Attachment C and/or the ER Health and Safety Binder or on computer.

11.2 Container Labeling

1. All containers received on site will be inspected by the contractor using the material to ensure the following:
 - a. all containers clearly labeled
 - b. appropriate hazard warning
 - c. name and address of the manufacturer

11.3 The following chemicals were brought to the site:

1. Gasoline
2. Diesel Fuel
3. Paints
4. Lubricants
5. Solvent Cleaners

11.4 Employee Training and Information

1. Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following:
 - a. an overview of the requirements contained in the Hazardous Communication Standard
 - b. hazardous chemicals present at the site
 - c. the location and availability of the written Haz Com Program
 - d. physical and health effects of the hazardous chemicals
 - e. methods of preventing or eliminating exposure
 - f. emergency procedures to follow if exposed
 - g. how to read labels and review SDS' to obtain information
 - h. location of SDS file and location of hazardous chemical list

12.0 EMERGENCIES/INCIDENTS/INJURIES



It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

12.1 Emergency Contacts for the Site

Emergency Call List and Project Organization		
Service	Name/Organization	Emergency Phone
Fire/Police/Emergency Medical	Wallace Rescue Squad 4013 Highway 177, Wallace, SC 29596 (843) 537-9595	911
*Hospital	Chesterfield General Hospital 711 Chesterfield Hwy, Cheraw, SC, US, 29520	911 then (843) 537-7881
*Occupational Medicine Clinic	Doctors Care 2410 Hoffmeyer Road Florence, SC 29501	843-662-8182
ER Program Manager	John Mullane	216-200-2260
ER Project Manager	Matt Carrera	720-841-9151
ER HSO	Matt Carrera	720-841-9151
ER Project HS Manager	Nick Michailides	708-333-9915

*Directions from Site to Hospital and Clinic: (See Maps in Attachment B)

NOTE: Maps and directions to the hospital and clinic will be posted in the office and kept in site vehicles.

The following individuals have been trained in CPR and First Aid: Matt Carrera

12.2 Additional Emergency Numbers

Poison Control Center	800-222-1222
National Response Center	800-424-8802 (24 hr)
Center for Disease Control	404-488-4100 (24 hr)
AT&F (Explosives Information)	800-424-9555
Chemtrec	800-424-9300
WorkCare Incident Intervention	888-449-7787 (24 hr)

ER Corporate Contacts

ER Corporate 24 Hour Hotline	888-814-7477
ER Headquarters (St. Louis)	636-227-7477

12.3 Emergency Equipment Available On-Site

Communications Equipment	Location
Mobile Telephones	SS – Matt Carrera 720-841-9151



Two-Way Radios	Channel 1
Emergency Alarms/Horns	Vehicle Horns / Air Horn
Other:	N/A

Medical Equipment	Location
First Aid Kits	Site Vehicles
Eye Wash Station: (within 100 feet of EZ)	CRZ/Site Vehicles

Fire Fighting Equipment	Location
Fire Extinguishers	Site Vehicles/CRZ
Other	N/A

Spill or Leak Equipment	Location
Absorbent Boom/Pads:	Support Zone
Dry Absorbent:	Support Zone

12.4 Incident Reporting/Investigations

- All incidents, including personal injury and property damage, must be reported to the RM, Supervisor, or HSO **within 20 minutes of incident.**
- The SS will contact Project Health and Safety Manager by telephone immediately. The RM, HSO, and effected employees will conduct an immediate investigation of the incident and document all results on the Incident and Investigation Report form
- The SS will assign a supervisory individual to accompany all injured personnel to the clinic and follow guidelines outlined in the ER Return to Work Program
- Copies of all Incident and Investigation Reports will be sent to the ER Vice President, Health and Safety

13.0 **EMERGENCY RESPONSE CONTINGENCY PLAN**

13.1 Personnel Responsibilities

As the administrator of the project field activities, the SS has primary responsibility for responding to and correcting emergency situations. The SS will:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, total evacuation and securing of the site or up-grading or down- grading the level of protective clothing and respiratory protection.
- Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- Ensure that appropriate decon treatment or testing for exposed or injured personnel is obtained.
- Determine the cause of the incident and make recommendations to prevent the recurrence.
- Ensure that all required reports have been prepared.

13.2 Medical Emergencies:

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to



transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to Corporate Health and Safety.

Onsite First Aid Support

Onsite medical support during project execution will be available from two or more individuals who are trained in First Aid and Cardiopulmonary Resuscitation (CPR) and bloodborne pathogens. Onsite first aid kits shall be Type III, 16 unit kits, including one pocket mouthpiece or CPR barrier. Kits shall be checked prior to use, and at least weekly when work is in progress to ensure that contents are replaced as used.

Medical Transport of Employees and Case Management

For non-emergency injuries, a local clinic Brunswick Urgent Care 509 Old Waterford Way #101, Leland, NC 28451 or other will be identified with the assistance of the Corporate Medical Consultant, WorkCare Incident Intervention (II) will be contacted immediately to establish a medical treatment plan prior to transporting the injured worker to the clinic. The WorkCare II consultant will attempt to contact the clinic ahead of the arrival of the patient to establish oversight of case management. Under no circumstances will an injured employee drive unescorted to a hospital, clinic, etc. An employee with minor injury may be transported by car after first aid treatment is given. The HSO or other project management personnel will transport the injured person to the facility. The employee who transports the injured person shall be trained in first aid and CPR whenever possible. When the injury is severe, or when in doubt concerning the severity of injury, the employee will be transported by ambulance.

Injured employees that require medical treatment or are taken to a doctor, hospital, clinic, etc., will not be allowed to resume work without a written return to work statement from the treating physician. This statement shall supply a medical diagnosis of the problem, the date of return to work, and work limitations. Should a "work as directed" statement be given the treating PLHCP will be contacted to discuss applicable tasks for the ER employee. ER will make an assessment of work the employee normally performs and place employee in a position that will aid the site in a productive manner.

Whenever there are questions on the appropriateness of the diagnosis or prescribed course of treatment, WorkCare will be contacted to arrange for a second opinion. Copies of all Incident and Investigation Reports will be sent to the ER Vice President, Health and Safety.

13.3 Fire or Explosion:

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival the RM or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on- site.

If it is safe to do so, site personnel may:

- Use firefighting equipment available on site for incipient fires only.
- Remove or isolate flammable or other hazardous materials which may contribute to the fire.

13.4 Spills, Leaks or Releases:

In the event of a spill or a leak, site personnel will:

- Locate the source of the spillage and stop the flow if it can be done safely.
- Begin containment and recovery of the spilled materials.



13.5 Evacuation Routes and Resources:

Evacuation routes will be established by work area locations for this site. All work areas will be provided with up to two designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency.

1. Evacuation notification will be three blasts on an air horn, vehicle horn, or by verbal communication via radio.
2. Keep upwind of smoke, vapors or spill location.
3. Exit through the decontamination corridor if possible.
4. If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
5. The RM will conduct a head count to insure all personnel have been evacuated safely.
6. In the event that emergency site evacuation is necessary, all personnel are to:
 - Escape the emergency situation;
 - Decontaminate to the maximum extent practical; and,
 - Meet at the command post.
7. In the event that the command post is no longer in a safe zone, meet: at the designated upwind location established in the daily safety meeting.

14.0 **CONFINED SPACE**

A confined space is defined as a space or work area not designed or intended for normal human occupancy, having limited means of access and poor natural ventilation, and or any structure, including buildings or rooms which have limited means of egress. Examples include tanks, vats, and basements. Confined spaces identified at this site are listed below. If a confined space entry is conducted, it will be done in accordance with procedures presented in Attachment E, and site specific requirements will be developed in a site specific HSA.

<u>Type of Confined Space</u>	<u>Location On-Site</u>	<u>Comments</u>
Tanks	Per Site Work Plan	Follow ER HS-06 CSE



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES A

SITE HEALTH AND SAFETY PLAN AMENDMENTS



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

SITE SAFETY PLAN AMENDMENT	
Amendment No.:	
Site Name:	
Date of Issue:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

ERM Site Manager

(Date)

ER Project Manager

(Date)

ER Site Superintendent

(Date)

ER Health and Safety Officer

(Date)

ER Project Health and Safety Manager

(Date)



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES B

SITE LOCATION MAPS AND HOSPITAL ROUTES





ENVIRONMENTAL RESTORATION, LLC

SITE HEALTH AND SAFETY PLAN DELTA MILLS SUPERFUND SITE

Google Maps interface showing a route from 711 Chesterfield Hwy, Cheraw, SC 29520 to 4351 Brick Yard Rd, Wallace, SC 29596.

711 Chesterfield Hwy
Cheraw, SC 29520

1. Head north toward SC-9 S 115 ft
2. Turn right onto SC-9 S/East Blvd 1.3 mi
3. Turn left onto Market St 1.0 mi
4. Turn left onto 2nd St 0.4 mi
5. Take the 3rd right onto U.S. 1 N/Powe St
Continue to follow U.S. 1 N 1.9 mi
6. Turn right onto Brickyard Rd/Community Rd
Destination will be on the left 1.0 mi

4351 Brick Yard Rd
Wallace, SC 29596

Map view showing the route (blue line) and surrounding area (gray map). The route starts at 711 Chesterfield Hwy and ends at 4351 Brick Yard Rd. The map includes labels for various streets and landmarks.

Windows taskbar at the bottom shows the time as 11:38 AM on 6/11/2014.



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES C

CHEMICAL HAZARD INFORMATION (MSDS)



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES D

APPLICABLE STANDARD OPERATING PROCEDURES



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES E

SITE HS INSPECTION FORMS



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES F

INCIDENT AND INVESTIGATION REPORT FORM



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES G

DAILY SAFETY MEETING RECORD



**ENVIRONMENTAL
RESTORATION, LLC**

**SITE HEALTH AND SAFETY PLAN
DELTA MILLS SUPERFUND SITE**

APPENDICES Z

SITE SPECIFIC TRAINING RECORD



SITE-SPECIFIC TRAINING RECORD

This is to advise that _____ conducted a Site-Specific Training
(Instructor's name)

course for _____ at the
(Company Name)

_____ project on _____
(Project Name) (Date)

The total duration of the instructions was _____ hours.

Instruction covered the topics checked off below:

- Site Location, Description and History ☐
- Potential site hazards (chemical, physical, and biological) ☐
- Chemical, physical, and toxicological properties of site contaminants ☐
- Safe work practices ☐
- Training requirements ☐
- Medical Surveillance ☐
- Control Zones ☐
- Monitoring ☐
- Selection, use, and limitation, of personal protective equipment ☐
- Personnel and equipment decontamination ☐
- Emergency response procedures ☐
- Hazard communication ☐
- Blood borne pathogen briefing ☐

The following participant attended the training course for the full duration indicated above.

Name (Print)

Signature