ENVIRONMENTAL RESTORATION

Site Work Plan
Emergency and Rapid Response Services

U.S. Smelter and Lead Residential Area Superfund Site - Zone 3,
East Chicago, Indiana

September 20, 2016

Prepared for
U.S. Environmental Protection Agency
Region 5
77 West Jackson Blvd.
Chicago, IL 60604

Under Contract No.: EP-S4-16-04
Task Order: 010
Project No: US5-010

1.0 INTRODUCTION

This Work Plan has been prepared by Environmental Restoration, LLC (ER) on behalf of U.S. Environmental Protection Agency Region 5 (EPA) to support the activities authorized under Task Order (TO) #009 of Contract EP-S4-16-02. This plan describes the project management, logistical procedures and operation approach that will be carried out by ER at the USS Lead Site (Site) during the removal of lead contaminated soils from residential properties in Zone 3.

This Work Plan includes the Site Security Plan. A Traffic Management Plan (TMP) will be submitted separately.

Revisions to this plan may be necessary as work commences and site conditions warrant it or if additional properties are added to the scope of work. Revisions to the plan will be approved by EPA prior to implementation. Approved revisions will be incorporated into the plan and the revised plan will be distributed to the appropriate project participants.

1.1. SITE LOCATION

The portion of the site relevant to this Work Plan consists of residences located in East Chicago, IN consisting of approximately 18 high priority removal homes and two areas in Riley Park (total of 19 properties). The site is bordered on the West by Kennedy Ave and on the East by Parrish Ave. It is bordered on the south by the Elgin Joliet and Eastern Railway right of way. Chicago Ave. borders the site to the North. The Site also includes the site repository and laydown yard.
The site laydown yard, backfill stockpile and waste soil intermediate stockpile will be located on open land at the Chemours Company property, 5215 Kennedy Avenue in East Chicago. Site office facilities will be located outside of the East entrance to the complex adjacent to the intersection of 149th Place and McCook Avenue.
This Work Plan addresses removal activities associated with the 19 properties that have the highest lead concentrations in the top 6" of soil. The addresses for these properties are:

Personal Address / Ex. 6

1.2 CONTRACT & TASK ORDER INFORMATION

The period of performance for TO 009 is 09/26/2016 to 6/28/2017 and the current obligated amount of award is $50,000. The EPA Remedial Project Manager (RPM) and Task Order Contracting Officer Representative (TOCOR) for this project is Mr. Tim Drexler. Project activities, as currently contemplated, will be conducted under both the Davis Bacon Act (DBA) and the Service Contract Act (SCA) as deemed by the EPA ERRS Contracting Officer. The primary project tasks and corresponding wage determination as contemplated are as follows:

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Task	Wage Determination
Travel	SCA
Site Setup	SCA
Excavation, direct loading & disposal	SCA (no intermediate stockpile)
Excavation and transfer to stockpile	DBA
Loadout from stockpile to landfill	N/A
Backfill	SCA/DBA (matches excavation WD)
Final Grading & Site Restoration	SCA/DBA(matches excavation WD)

Due to the size, complexity and timeframe of concurrent USS Lead projects, ER will utilize personnel from throughout our network of offices. ER will charge EPA per diem, lodging and mobilization time for resources which we need to mobilize from other offices and is beyond what was outlined in our R5 proposal. Staffing levels outlined below reflect the crew at full staffing. Staffing would ramp up to this level over a 2 week period. The CONUS lodging rate for Lake County, Indiana is $94.00/night. The CONUS M&IE rate for Lake County, Indiana is $59.00/night.

2.0 PROJECT OBJECTIVES AND SCOPE

The objective of the project is to conduct a removal action at the site to mitigate the threats to public health, welfare and the environment posed by the presence of uncontrolled hazardous substances. The project scope, as outlined by the Statement of Work (SOW) includes the following elements:

- Develop and implement a Site Health & Safety Plan
- Excavate and stage soils contaminated with lead
- Place a visible barrier at the bottom of excavations, as directed by the TOCOR.
- Backfill excavated areas with clean fill material and/or topsoil; lay sod or plant other appropriate ground cover to stabilize excavations
- Provide for site security, as directed by the EPA TOCOR.

3.0 PROJECT ORGANIZATION, STAFFING AND RESOURCES

ER will primarily attempt to utilize personnel, equipment, and supplies from ER's South Holland, Illinois office as allowable with support from other offices as needed. Rental equipment used at the site will be procured from local sources when feasible to minimize mobilization costs. In general, equipment and materials will be brought in on an as needed basis. The initial ERRS crew will consist of:

Qty	Classification
1	Response Manager
1	Field Cost Accountant
1	Foreman
1	Site Coordinator
2	Documentation Technicians
5	Equipment Operator
13	Laborers
8	Truck Drivers
1	H&S Officer (onsite as needed)

As the nature and intensity of site activities change, the crew size and makeup may change with the consent of the EPA TOCOR.

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Equipment will include:

Qty	Description
10	Pickup trucks
2	1-ton stake bed truck (Crew)
1	20' secure storage container for materials
3	Mini-excavator (11,000 lb.) & (7,000 lb.) rubber tracked
3	Track skid steer loader
1	1,500 to 2,000 gallon water truck
1	Vibratory plate compactor
7	5 or 6 yard single axle dump trucks
1	Office trailer
4	6 ton & 10 ton equipment tag trailers
1	3.5 cyd wheel loader
1	Walk behind bobcat

As the nature and intensity of site activities changes, additional equipment may be mobilized with the consent of the EPA TOCOR.

The crew will typically be organized into five crews: excavation crews (2), backfill crew, restoration crew, support crew:

- The excavation crews will focus on the excavation of contaminated soil from each property. The excavation crew includes trucks used to haul contaminated soil to the Chemours facility. This crew will also be responsible for dust suppression activities, fencing properties, and potholing utilities.
- The backfill crew will follow the excavation crew and will be responsible for the hauling fill from the laydown yard, placement of the fill, compaction of the fill.
- The restoration crew will be responsible for placing topsoil. Establishing final grade and revegetation of properties. They will also remove fence when restoration is completed and be responsible for punch list items.
- The support crew will be responsible for obtaining homeowner agreements, site documentation, scheduling and documenting site surveys, and homeowner completion agreements.
- These five crews will be managed by the RM and lead foreman who will be supported by the FCA and Regional Health & Safety Manager.

4.0 PROJECT DOCUMENTATION AND MEETINGS

A site orientation meeting will be held with all crew members on the day of mobilization. The primary focus of the meeting will be a comprehensive review of the Site Health & Safety Plan (HASP) and a site familiarization walk through. All crew members will acknowledge the HASP by signature.
All crew members, subcontractors, and visitors will be required to sign in and out each day on the Site Log. A daily safety/operations meeting will be held each morning with the crew to review the planned activities for the day, relevant AHAs and solicit crew feedback. This meeting will be used to formally communicate changes in the HASP and other site specific plans to the crew. The covered topics and attendees will be documented on the Daily Tailgate Safety Form.

A file will be maintained for each of the 19 properties. Included in the file will be:

- Property Design Sheet (SulTRAC Final Remedial Design for High Priority Zone 3 Properties)
- Indiana811 utility locate #
- Notification of City of East Chicago, IN for water locate
- Pre-remediation survey, post excavation survey, post remediation survey
- Pre-remediation photos, post excavation photos, post remediation post
- Pre-excavation checklist
- Post restoration punch list & Completion Agreement

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Daily Work Orders (DWO) will be utilized to document EPA authorized activities and resources. The DWO will also track progress towards completing the authorized activities. A draft DWO will be generated daily by the RM for the following days planned activities.

An afternoon Work Order meeting will be held between the RPM, RM and other participants as determined by the RPM. In this meeting the activities for the day and the planned activities for the following day will be reviewed. This meeting will also be the forum to discuss any other outstanding issues.

1900-55's will be generated daily to track project costs. Costs will be tracked by property in RCMS using subtasks. The 1900 for the previous day's activities will presented to the EPA TOCOR for review by 11:00 am.

5.0 SCHEDULE

The TO period of performance is 09/06/17 to completion as yet to be determine, the Task Order was issued as a verbal. Removal activities are scheduled to begin on September 26, 2016. Equipment and materials will be mobilized during the week of September 26, 2016 and the laydown yard will be established during this week. The support crew will mobilize during the week of September 19, 2016, the excavation crew will mobilize on September 26th and the backfill crew will mobilize on September 27th and 28th. It is anticipated a second excavation crew will mobilize October 3, 2016. Excavation will begin on the afternoon of September 30, 2016.

The standard work week will be Monday through Saturday with the crew working approximately 60 site hours.

Excavation, backfilling and restoration of the 19 properties are estimated to run from 9/26/16 through 11/18/16.

6.0 PRE-MOBILIZATION ACTIVITIES

6.1 PRE-MOBILIZATION SITE VISIT

No site visit is needed as EPA and ER are already onsite having conducted a preliminary visit. ER will conduct a walkthrough of the Chemours property to define the areas that will be used during the project.

6.2 PLANS

A Site Specific Health and Safety Plan (HASP) will be developed jointly by ER and Tetra Tech (START) and approved by USEPA. The plan will be approved prior to the commencement of site activities. A Work Plan (contained herein), Security Plan (contained herein) & Traffic Management Plan noting general haul routes will be developed by ER and submitted to EPA for review and approval. All Plans developed for this project will be amended, as site conditions warrant, with the approval of EPA.

6.3 FIELD SAMPLING & LABORATORY ANALYSIS

ER will sample and analyze backfill & topsoil sources and submit results of this analysis to EPA for approval prior to importing this material. The backfill and topsoil will be analyzed for those constituents listed in Table 2 of the Final Remedial Design for High Priority Zone 3 properties (as conducted by SulTRAC September 15, 2016).

The backfill and topsoil will be sampled at a frequency of 1,000 tons per sample or from each new borrow source.

6.4 SUBCONTRACTOR PROCUREMENT

Pricing will be solicited from multiple subcontractors for major items, including: Equipment rental; laboratory analysis; lodging; backfill materials; sod; utility locates. The low cost technically acceptable bidder for each item, who is able to meet the project schedule, will be selected. In general subcontracted services and supplies will be procured from local sources to minimize transportation costs.

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7.0 MOBILIZATION AND SITE SETUP

7.1 FIELD OFFICE AND TEMPORARY UTILITIES

Site setup activities will be conducted in level "D" PPE unless otherwise specified in the HASP.

Field Office Facilities – ER will rent an office trailer for use by EPA/START, an office trailer for use by ERRS and a trailer for use as a breakroom/lunch room. Signs will be put up to identify the EPA and ERRS offices and direct visitors to sign-in at the office.

Laydown Yard – ER will utilize open land at the Chemours Company property at 5215 Kennedy Ave. as to be negotiated by EPA to store equipment and materials during the project. This location will also be used as a stockpile location for backfill and excavated soil.

Electrical – The field offices will be powered by existing power drops installed connecting the office trailers to municipal power.

Potable Water – Bottled water will be provided to the crew.

Sanitation – Three portable restroom and a hand wash station will be stationed at the field office for use by the crew. Two additional portable restrooms and a hand wash station will be placed at the laydown yard. The portable restroom will be serviced at a minimum weekly.

Phone/Internet –Cell phones and cellular hot spots will be used to provide phone and internet service. Each contractor will provide cell phone and hot spots for use by their personnel.

7.2 CONTAMINATE REDUCTION ZONE (CRZ)

The CRZ will be established in accordance with the requirements of the Site HASP. The CRZ will be setup at each location during excavation activities.

7.3 EXCLUSION ZONE SETUP (EZ)

The EZ will be setup in accordance with the requirements of the Site HASP. The EZ will encompass the portion of each yard to be excavated. The exclusion zone will be fenced with 4' construction barricade fence and will remain fenced until backfill and sod placement is completed. Signs will be placed on each side of the perimeter fence to warn the public to keep out.

7.4 UTILITY LOCATE

Utilities at each residence will be located in two ways. The first will be through Indiana 811. At least 3 business days prior to beginning excavation activities, but not more than 10, ER will request locates for each location. To assist with the utility locate, white paint or flags will be used to identify each excavation area. The second step in the locate process will utilize a private utility locator to trace non-member utilities and other utilities which may be present such as buried sprinkler systems. In addition the City of East Chicago distribution manager will be contacted at (219) 512-3158 to provide additional marking information.

8.0 REMOVAL ACTIVITIES

8.1 SITE PREPARATION & WALK THROUGH

Each location will be thoroughly photo documented prior to beginning any activity. The property will be walked with ER's Project Manager, EPA and START to review site conditions and determine if any trees, bushes or other landscaping will be removed or pruned to improve access. Trees exceeding 4" in diameter at a height of 4 feet will be left in place whenever possible. The SulTRAC Property Design Sheet will be reviewed. Access to, and routes in and out of the excavation areas will be discussed and agreed upon. Site specific hazards will be discussed such as overhead wires, young children (under 7 years old), tight excavation areas or restricted access to excavation areas. ER assumes that EPA will notify residents of the excavation and restoration schedule.

Utility locates will be completed as discussed in Section 7.4. The pre-remediation survey will be completed. The pre-remediation survey will be performed to verify property boundaries, topography, location of fences, and other items which may require removal to facilitate excavation and backfill work. The survey will also

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be used to properly reinstall the removed items. Because many of the properties are observed to have preexisting drainage issues related to contours or topography that cause water accumulation adjacent to structures, the pre-remediation topographic survey will be an essential tool to document pre-existing drainage conditions.

The day prior to excavation, the excavation crew will fence the excavation area and access routes into and out of the excavation area with 4' plastic barricade fence and metal fence posts spaced no more than 10' apart. Sidewalks that bisect excavation areas will be fenced off and two points of access to the residence will be maintained. Signs will be placed on perimeter fencing warning the public to keep out. ER personnel will try to control access points during excavation. Whenever access points are not under ER control, construction fence will be used to close access to properties. Plywood used to bridge sidewalks and cover access routes into the excavation may be staged inside the fenced area at this time. Any tree limbs that need to be pruned for access will be removed at this time. Damaged limbs will be painted with tree wound paint after pruning. The excavation crew will also pothole marked utilities in multiple locations leading from the property boundary to the residence.

8.2 TRAFFIC & PEDESTRIAN CONTROL

Traffic control will be conducted using signs, barricades and a flagman where necessary. Cones, barricades and "sidewalk closed" signs will be used to close off the sidewalk in the work area. The sidewalk will be opened up during non-working hours. A spotter will be used when backing up the 5-7-yd3 dump truck at each location.

8.3 EXCAVATION

Prior to beginning excavation activities at each location, pre-excavation survey will be conducted. The excavation and support crews will then walk the property and identify the location of all buried utilities, review AHAs, discuss the excavation plan, and complete the excavation checklist. Excavation location, depth, waste type and the installation of a visible barrier will be determined by consulting the SulTRAC Property Design Sheets.

The site CRZ will be setup. Dust suppression equipment will be setup and the yard will be wetted as needed. Plywood will be placed down over sidewalks and yards to provide 5-7yd3 dump trucks a clean path to the active portion of the excavation. If the excavation is inaccessible to dump trucks, excavated soil will be shuttled to the dump trucks using a tracked skid steer. If dump trucks are loaded outside of a planned excavation area, plastic sheeting will be placed down beneath the truck to catch any soil which spills during loading. Orange plastic fence will be used as the visual barrier placed at the bottom of excavations as indicated in the SulTRAC Property Design Sheets.

Some properties have limited access such that soil will need to be shuttled out to dump trucks. Other locations have multiple unrestricted points of access.
Excavation adjacent to the foundation of structures or other permanent structures (e.g. sidewalks, patios, driveways, or alleys) will begin at 0 inches from the structure and proceed at a 1:1 slope (45 degree angle). If the structural integrity of the permanent structure is poor, the 1:1 slope may instead begin at a maximum distance of 6 inches from the structure. Surficial soil shall be excavated at a minimum depth of 1-2". Excavation immediately adjacent to the foundations of structures will be conducted manually.

Excavation shall proceed up to the property line. Excavation adjacent to fence posts may proceed at a 1:1 slope.

Beginning at the trunk of any tree that will remain present in the remediation area, soil beneath the drip line of the tree shall be manually excavated until significant roots are encountered or the design depth is achieved, and at minimum 1-2 inches of surficial soil shall be removed. Once the roots fall below the design depth, mechanical excavation can occur in the remaining area within the drip zone.

Excavation will be conducted with an appropriately sized mini-excavator fitted with a smooth ditching bucket. For larger unrestricted excavations a 15,000 to 17,000 lb. machine may be used. For smaller more restricted areas, an 8,000 to 12,000 pound machine will be used. For the most restricted areas, and within 2' of utilities, excavation will be done manually.

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Following excavation activities, support crews will have a post-excavation survey completed prior to backfill operations.

8.4 DUST & CONTAMINATED SOIL CONTROL

Water may be sprayed onto the excavation area to control dust. Water will be delivered either directly from a homeowner water source or from a water truck. Water will be sprayed using a 3/4-1 ½"" hose outfitted with a nozzle capable of delivering a fine spray. A hydrant meter/ backflow preventer will be rented from the City of East Chicago. A wet street sweeper will also be used as needed to keep streets free of dirt/dust. At the end of each day, sidewalks, driveways and curb lanes will be swept as needed. Plywood sheeting will be used to provide a clean path for trucks to reach the active portion of the excavation. This plywood will be swept throughout the day. Trucks will be inspected and brushed clean after loading and unloading to ensure that no soil is present outside of the bed of the truck.

Excavation equipment (mini-excavator, skid-steer, shovels) will be removed from each property at the end of each day and returned to the laydown yard for secure overnight storage. Each piece of equipment will be brushed and scraped visibly clean prior to loading onto a truck or trailer. In the event excavation has not been completed, heavy equipment may be secured and left on site until completion of excavation. Trucks hauling excavated soil and backfill will be tarped.

8.5 BACKFILL

Backfill and topsoil will comply with the specification outlined in The Final Remedial Design for High Priority Zone 3 Properties (SulTRAC September 15, 2016).
Clean backfill will be delivered from the borrow source to a stockpile located at the Chemours Company property on Kennedy Ave. From Chemours the fill will be trucked to each property using the 5yd3 dump trucks.

Fill will be placed and spread using a track skid-steer in 6" lifts and compacted with a plate compactor. The final 6" of the excavation will be filled with topsoil. Each location will be backfilled to meet the pre-excavation elevation and contours except to correct drainage issues. Backfill will be placed so that water will not pool and will drain away from the residences.

Following backfill activities, compaction a compaction test will be performed prior to placement of backfill. In areas where excavations do not exceed 6" compaction test will not be necessary.

8.6 RESTORATION

Following backfill activities, restoration crew will place topsoil and prepare final grade for sod. Vegetation and structures will be replaced according to homeowner agreement. Punch list items will be completed in preparation for the homeowner completion agreement. A post-excavation survey will be conducted at this time.

Sod will be used to restore each yard. The sod will be installed by a subcontractor overseen by ER's Response Manager. Sod will be rolled with a roller not exceed 90 pounds. Installation and maintenance of the sod will be consistent with The Final Remedial Design for High Priority Zone 3 Properties (SulTRAC September 15, 2016). Watering of the newly installed sod will be the responsibility of each homeowner. Each homeowner will be instructed on how to care for the newly installed sod.

Any other landscaping features that were removed will be replaced as directed by the EPA TOCOR.

9.0 RESPONSE EQUIPMENT DECONTAMINATION ACTIVITIES

Response equipment will be dry decontaminated prior to demobilization. Residual material will be brushed or scraped from the equipment until visually clean. If deemed necessary, the equipment will be washed with high pressure water.

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10.0 WASTE MANAGEMENT

10.1 ANTICIPATED WASTE STREAMS AND WASTE STREAM SAMPLING

ER anticipates the following waste steams:

- General trash & debris
- Contaminated PPE, poly sheeting, etc.
- Decontamination water

Loading out of the intermediate stockpile and disposal of excavated soil is the responsibility of others and is not covered in this Work Plan. A small 2-yd3 or 3-yd3 dumpster will be placed at the office trailer location for general trash. Contaminated PPE and poly sheeting will be comingled with the waste soils. Decontamination water will be used for dust suppression.

10.2 RECYCLING AND REUSE

ER will consider recycling and beneficial reuse of all materials prior to designation of the material as a waste. Decontamination water will be used as a dust suppressant on lead contaminated soil.

ER along with EPA and START will recycle paper, plastic and metals generated in the Site field office.

10.3 WASTE TRACKING

Excavated soil leaving each property will be accompanied by a bill-of-lading. The bill-of-Lading will track the following information:

- DATE
- TRUCK #
- LOAD #
- PROPERTY ADDRESS
- FRONT YARD OR BACK YARD
- WASTE TYPE (1 OR 2)

11.0 SITE SECURITY (SITE SECURITY PLAN)

A sign board will be placed at the entrance to the field office. The sign board will indicate that a USEPA Removal Action is underway and direct visitors to sign-in at the Site Office. Visitors making planned visits should be directed to meet site personnel at the field office located at the corner of 149th Place and McCook Ave.

Private security will be hired to watch the office area and laydown yard during all non-working hours. All equipment, hand tools, materials and miscellaneous supplies will be returned to the laydown yard at the end of each workday. Small tools and supplies will be locked up in the equipment trailer or storage box during overnight hours. The field office will be locked during non-working hours and when unoccupied during the day.

During working hours, all visitors to the site will be directed to sign in on the site entry/exit log maintained at the field office. An entry/exit log will be maintained to track all personnel onsite. Visitors/observers will be kept out of the work areas while site activities are underway and should be escorted at all times. Trespasser(s) should be asked to leave work areas and the local police should be notified if the trespassers fail to comply. In the event trespasser(s) enter work areas, work should immediately cease, workers should exit the area, and the EPA TOCOR should be notified. Work should not restart until the trespasser(s) have left the site.

Properties that are being excavated, backfilled or restored will be fenced with 4' orange barricade fence. Excavations will be enclosed completely when not in the direct control of Environmental Restoration.

12.0 ENVIRONMENTALLY FRIENDLY PRACTICES

ER will attempt to employ environmentally friendly practices consistent with Part III Section J Attachment 7 of the contract during the execution of this task order. Where cost is increased by adherence to these

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practices, the EPA TOCOR will be consulted prior to incurring the additional cost. These practices include, but are not limited to the following:

- Utilizing environmentally conscious hotels
- Utilizing alternative fuels
- Carpooling
- Utilizing green office supplies
- Recycling plastic, paper and metals generated onsite
- Exploring the beneficial reuse of wastes generated onsite
- Procurement of goods and services from local vendors
- Institution of a no-idle policy for heavy equipment and vehicles

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ATTACHMENT A

PROPERTY DESIGN SHEETS