
APPENDIX D

Excavation Work Plan

EXCAVATION WORK PLAN

This section describes the activities and provides the procedures and protocols that shall be used during the removal action activities for the Non-VOC contamination in soils.

1.0 PLANS, PERMITS, AND PREMOBILIZATION ACTIVITIES

The following sections describe the plans, permits, and premobilization activities for the removal action.

1.1 Plans

Prior to initiating the removal action, the following plans will be required: Sampling and Analysis Plan (SAP) consisting of a Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP), and the Site-Specific Health and Safety Plan.

1.1.1 Sampling and Analysis Plan

The SAP is presented in Appendix I. The SAP provides sample collection procedures and the rationale for the field screening and the confirmation sampling effort. The QAPP provides the removal action data quality objectives and the required quality assurance and quality control procedures to achieve the objectives.

1.1.2 Site-Specific Health and Safety Plan

A site-specific health and safety plan will be prepared prior to removal action activities. This health and safety plan must be approved by the EPA prior to initiating the removal action. The health and safety plan shall meet the requirements of applicable federal, state, and local regulations. These include, but are not limited to the following:

- 29 Code of Federal Regulations (CFR) 1910.120.
- 29 CFR 1926.
- California Code of Regulations (CCR) Title 8.

The health and safety plan shall address worker and business operator safety. On-site personnel shall meet 40-hour Occupational Safety and Health Administration (OSHA) training and medical surveillance requirements. Provisions of the health and safety plan should include dust monitoring protocols to address potential off-site migration of metals and organic monitoring protocols for PAHs and PCBs due to removal action activities.

1.1.3 Construction Schedules

A construction schedule will be prepared and approved by the EPA prior to implementing the field activities.

1.2 Permits

Prior to initiating the removal action, the proper permits will need to be obtained. These include but are not limited to:

- Encroachment/Excavation Permit from the City of Southgate to excavate within the city right-of-way.

Copies of the permits will be available on-site during the construction activities.

1.3 Pre-Mobilization Activities

Prior to commencing the field activities, waste profiling and underground utility clearance will be completed.

1.3.1 Waste Profiling

To minimize the amount of stockpiled soil, approval will be obtained from the TSD facility to accept the excavated soil prior to initiating the removal action. Copies of the analytical reports will be submitted from previous site investigation activities and if needed, additional EPA samples will be collected for analyses requested by the TSD facility. Samples will be submitted to an EPA approved laboratory.

1.3.2 Underground Utility Clearance

Prior to the removal activities, the contractor will be responsible for identifying and confirming the location of buried utilities. This includes contacting Underground Service Alert to complete an underground utility clearance on the public right-of-way. In addition, the contractor will be responsible for completing an independent underground utility clearance on the Site. The location of the underground utilities will be marked and areas of intrusive work will be adjusted as necessary to avoid these marked locations.

3.2 Site Security Plan

Site security is of the utmost importance to protect the public, protect the installation property, secure equipment and materials left on site, eliminate the chance of spreading contamination, and assure worker safety. The Site Security Plan summarized in this subsection has been developed to assure these objectives are met.

3.2.1 Site Control

The URS site superintendent will maintain a list of on-site workers and vehicle types, with license numbers. URS will coordinate with subcontractors prior to any deliveries by vendors or mobilization to the site.

3.2.2 Work Zones

The work area will be delineated and divided into an exclusion zone, a contamination reduction zone, and a support zone. The exclusion zone will be maintained around the work area by placing signs, barricades,

and/or yellow tape as necessary. The size and the shape of the exclusion zone will be determined by the site conditions; it will be large enough to include the potentially hazardous zone around the sites.

3.2.3 Excavation Safety

URS will place yellow caution barricade tape around the excavation areas any time the work area is left unattended and until the excavation is backfilled to its original ground surface level. Equipment and materials will be stored inside the barricaded area to secure them after hours. No flammable liquid will be stored onsite for safety reasons. Weatherproof warning signs will be attached to the barricade tape in compliance with California Proposition 65 requirements.

3.2.4 General Procedures

Site workers, vendors, and subcontractors are required to observe security and safety measures imposed by URS. These include, among others, prohibition of weapons, drugs, and alcoholic beverages. In addition, cell phone usage is prohibited by the driver when a vehicle is in motion.

2.0 MOBILIZATION AND SITE PREPARATION

The following section describes the mobilization and site preparation activities.

2.1 Mobilization

The contractor will provide all personnel, equipment, and materials to perform the removal action described in this document. All equipment brought onto the site will be clean and in good working condition.

2.2 Site Preparation

Tenant personnel will move tenant-owned equipment and materials prior to the removal action. The contractor will establish exclusion, decontamination, and support zones since Cooper Drum tenants will be operating during the removal action.

2.2.1 Fence Removal and Temporary Fence Installation

The contractor will remove permanent fencing in the areas where excavation activities are expected to interfere with the removal action. During construction activities, temporary fencing will be used to prevent unauthorized entry to the Site.

2.2.2 Soil Stockpile and Decontamination Site Preparation

The contractor will designate an area to temporarily store excavated soil prior to transport to the TSD facility and to conduct decontamination activities. The contractor shall size the area based on the requirements to complete the removal action effectively and efficiently. The contractor will line the area with a minimum of 20-millimeter (mm) polyethylene plastic sheeting or another material approved by EPA. The area will be bermed such that any runoff will not be able to leave or enter the bermed area. The contractor may separate the two areas. If the contractor separates the decontamination site from the soil stockpile site, the requirements to construct each area will be followed. The decontamination portion of

the area will be constructed in a manner where liquids from the decontamination activities can be easily collected. For management of the liquids, see section 3.2 of this plan.

2.2.3 Sheet Piling

Sheet piling shall be installed as needed when the excavation limits are near a Site structure or other wise deemed necessary. The decision to use a protective system, such as sheet piling, shall be made by a certified Excavation Competent Person.

3.0 FIELD ACTIVITIES

The following sections describe the field activities that may be completed during the removal action.

3.1 Demolition

Any necessary demolition work shall be performed by the contractor.

3.1.1 Asphalt/Concrete Removal

The contractor shall remove the asphalt and concrete from the site covering the identified areas prior to initiation of the excavation of contaminated materials.

3.2 Excavation and Handling of Contaminated Materials

The soil identified with concentrations of the constituents of concern above the cleanup goals will be excavated in a phased effort. Initially, soil will be removed to 1 foot bgs from the noted areas as shown in Figures 4-1 and 4-2. During the soil removal activities, the contractor shall be careful not to disturb any of the monitoring wells in the excavation area. Since the perched groundwater at the site is located at approximately 34 feet bgs, groundwater should not be encountered during the initial phase of the excavation activities. However, if in the unlikely event that groundwater or other liquids are encountered in any of the excavations during the removal action, the liquids will be managed as discussed below.

During the removal action activities, dust will be controlled and kept to a minimum by spraying the area with clean water. A minimum amount of water shall be used to keep the dust under control.

After the initial excavation activities are completed, soil samples will be collected from the excavation for field screening (Section 4.3 of the Basis of Design). If the results of the field screening samples are less than the cleanup goals, confirmation samples will be collected from the area. If the results exceed the cleanup goals, an additional foot of soil will be excavated from the area where the sample was collected. The above process will be repeated as often as needed or until the excavation reaches a depth of 5 feet.

Excavated soil will either be placed in the temporary staging area or loaded directly into trucks to be transported to the disposal facility.

If groundwater or other liquids (such as rainwater, or pipe leaks) are encountered during the removal actions, liquids shall be managed in the following manner. The source of the liquid shall be controlled, if possible. Liquids shall be pumped into an appropriately sized container. If multiple types of liquids are found, samples of each liquid type will be collected and submitted to an analytical laboratory for analysis.

The sample shall be analyzed for the chemicals of concern expected for the area where the liquid was encountered. The EPA shall approve the analytical parameters prior to sending the samples to the analytical laboratory. Based on the analytical results of each liquid sample, the liquids will be managed appropriately. If source of the liquids cannot be controlled, cease excavation efforts in the area and develop an action plan with EPA.

It is likely that utilities will be encountered during the excavation activities. However, if utilities are identified and encountered, the contractor may excavate the soil in this area with hand tools. If the utility line is located within the site property and the contractor has determined, with EPA and Cooper Drum tenant personnel concurrence, that the utility line services the site and temporary shut down of the utility line will not adversely affect business operations, the contractor may elect to temporarily remove the utility line to excavate this area. If the utility line is designed to transport liquids, the contractor will cap the ends of the utility lines to prevent such material from entering the excavation. After the completion of the excavation activities, the contractor will replace the utility line. If the contractor has determined with EPA concurrence that the removal action in the area of the utility line cannot be removed, removal action in this area will be terminated.

3.3 Field Screening

All confirmation soil samples collected during the removal action will be screened using field-screening methods for the contaminants of concern; lead, PAHs, and PCBs. The field screening methods include a field portable X-ray fluorescence (XRF) for lead and immunoassay test kits for PAHs and PCBs. The results of these samples will be used to guide the excavation activities. If the sample results are above the identified cleanup goals, excavation will continue within the area where the sample was collected. If the sample results are less than the cleanup goal, confirmation samples will be selected from the set of field screening soil samples that were found to be below the identified cleanup goals.

3.4 Confirmation Sampling

All of the confirmation samples collected in excavation area will also be analyzed for the contaminants of concern. Twenty percent of the confirmation samples will be selected for submittal to an analytical laboratory for analysis to confirm the results of the field screening samples. The EPA oversight contractor will collect these samples.

3.5 Transportation and Disposal of Hazardous Materials

Since the soil will have been accepted at a TSD facility prior to initiating the field activities, the excavated soil can be loaded directly into trucks for transport to the TSD facility. However, the contractor may take the excavated soil to the soil staging area, if it is determined that it is cost effective to store the soil at the staging area and there is sufficient space at the site. Once a truckload of soil has been staged, the soil can be loaded into the truck for transport to the TSD facility. The truck driver shall cover the trailer with tarps, and complete the manifests prior to leaving the site, and shall follow the transportation plan during the transport of the soil to the TSD facility. The transportation plan will specify a route that the trucks will follow while transporting the soil to the TSD facility.

Liquid wastes, including decontamination wash water generated during the removal action, will be managed in the following manner. For liquid wastes where the contaminants of concern are known and the same as the contaminants of concern being accepted by the TSD facility, it is permissible to spray the

water on the excavated soil destined for the TSD facility for dust control. For liquids where the constituents of concern are unknown, samples will be collected from each type of liquid and submitted for analysis for the analytical parameters expected and according to the requirements of the TSD facility. EPA shall approve the analytical parameters prior to sending the samples to the analytical laboratory. Based on the analytical results of each liquid sample, the liquids will be managed appropriately (either used as dust control or transported to the TSD facility).

3.6 Site Restoration

The surface of the site will be covered in asphalt to match existing after the completion of the excavation activities. The asphalt will assist in minimizing the amount of surface water infiltration to the groundwater. Minimizing surface water infiltration will help prevent further migration of contaminants within the shallow groundwater zone and it will also help prevent further migration of contaminants within the shallow groundwater zone to the deeper groundwater zone. The following sections describe the site restoration activities.

3.6.1 Backfilling and Compaction

After the results of the confirmation samples show that the constituents of concern are below the cleanup goals, a permeable synthetic liner will be placed in the bottom of the excavation areas prior to the placement of any fill material. The excavations will be backfilled with clean fill from an off site source. The contractor shall provide an analytical report to EPA for samples collected of the fill material to confirm that the fill is clean. EPA must approve that the fill can be used at the site prior to transporting the fill to the site. The fill will be placed in 6-inch lifts and compacted with equipment suitable for the soil type. At least one field density test for every three lifts will be taken in accordance with ASTM D1556. Additional field density tests using ASTM D2942 (nuclear density gauge) can be used. All density testing will be conducted by a neutral third party engineer. Excavations will be compacted to 90 percent of maximum relative density.

3.6.2 Sheet Piling Removal/Fence Repair/Utility Repair

The sheet piling will be removed from the site. Any portion of the fence that was removed or damaged during the removal action will be restored to match the surrounding fencing. The utility lines removed during the removal action will be replaced.

3.6.3 Asphalt/Concrete Replacement

The asphalt and concrete that were removed or damaged during the removal action will be replaced with asphalt. Asphaltic concrete of 3 to 4 inches to match existing will be placed over 4 to 6 inches of crushed aggregate.

3.7 Decontamination Procedures

Decontamination of sampling equipment and heavy equipment shall be completed within the decontamination area. In addition, if the trucks were in contact in an area of the site where soil contaminants have not been removed (i.e., where soil is being loaded directly from the excavation areas), it will be necessary to decontaminate trucks before leaving the site. The following two sections describe the decontamination procedures for sampling equipment and hand tools and for heavy equipment.

3.7.1 Sampling Equipment and Hand Tools

Sampling equipment and hand tools will be decontaminated by the following method. Large particles of soil will be first be removed from the equipment or tools, then the sampling equipment will be scrubbed with a brush in a water and mild soap solution followed by rinsing with deionized or distilled water, before it is allowed to dry. The clean water and a mild soap solution will be changed frequently to prevent sample cross-contamination. Spent wash water and rinsate will be collected and temporarily stored on-site. The spent wash water and rinsate will be managed as specified in Section 3.2 of this plan.

3.7.2 Heavy Equipment and Trucks

All heavy equipment and trucks (if needed) will be cleaned prior to leaving the contractor's yard and before leaving the site. The contractor will be required to steam-clean their equipment using high-pressure sprayers.

3.8 Report

After all field activities are completed and all analytical results, transport manifests, weight tickets, and waste disposal forms have been received, a final removal action report summarizing all activities and the results of these activities will be prepared by the contractor. The final report will include:

- A summary of all field activities completed including excavation, loading, dust control measures, transportation, treatment and disposal, screening level and confirmatory sampling analytical results, backfill and compaction, and site restoration.
- A summary of the volumes of contaminated material excavated and disposed.
- Copies of the chain-of-custody forms, laboratory reports, waste transportation manifests, waste disposal forms, and weight tickets.
- Any variations to the approved Removal Action Work Plan.
- A summary of field screening and confirmatory sampling, equipment decontamination materials sampling, backfill material sampling, and health and safety monitoring.

The final report will also present the depths and areas excavated in a graphical form, site photographs, data results of daily instrument initial and continuing calibration verifications, quality control checks, field notes, and as-built drawings.