January 4, 2024

Ms. Maureen Hatfield
MC-127
VCP-CA Section, Team 1, Remediation Division
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

UPDATED NOTIFICATION OF SOIL CAP DISTURBANCE AT THE FORMER HOUSTON WOOD PRESERVING WORKS SITE, HOUSTON, TEXAS, POST-CLOSURE CARE PERMIT NO. HW-50343; INDUSTRIAL SWR NO. 31547

Dear Ms. Hatfield,

WSP USA Inc. (WSP), on behalf of Union Pacific Railroad Company (UPRR), is providing this letter to notify the Texas Commission on Environmental Quality (TCEQ) of planned soil cap disturbance activities within the Houston Wood Preserving Works (the Site) (IHW Permit 50343). As detailed in the Affected Property Assessment Report (APAR) Addendum[1] for the Site, two sets of fiber optic lines run along the north side of the rail main lines under the Soil Cap across the entire length of the Site. For one of the fiber optic lines, there is an existing fiber optic manway or handhole that is located under the Soil Cap at the Site (Figure 1). The fiber optic company (Lumen Technologies (Lumen)) is planning to add additional fiber lines into an existing underground conduit and needs access to the buried handhole to complete the fiber installation project in the area. In addition, Lumen plans to add an extension to the handhole to the top of the Soil Cap to allow future access. WSP submitted a notification letter dated December 1, 2023 detailing the planned Soil Cap disturbance. TCEQ provided preliminary comments during a teleconference meeting with UPRR, WSP, and TCEQ on December 7, 2023. This updated notification letter addresses the TCEQ comments discussed during the teleconference meeting. Details of the planned cap disturbance and handhole reconstruction are provided below.

Soil Cap Disturbance/Fiber Handhole Reconstruction

Lumen located the handhole within the Soil Cap using fiber locating equipment and indicated the top of the handhole was buried approximately 18 inches below the natural grade prior to the Soil Cap construction. Considering the Soil Cap thickness, the top of the existing handhole is estimated to be located approximately 4 feet below the top of the Soil Cap as shown on Figure 2. In order to access the existing fiber handhole and

[1] Pastor, Behling & Wheeler, LLC (PBW), 2009. Affected Property Assessment Report Addendum, UPRR Houston Wood Preserving Works, July 13, 2009.

construct the handhole extension, the Soil Cap will need to be disturbed. The following procedures are planned for the Soil Cap disturbance and handhole extension (details shown on Figure 3):

- An area approximately 30 feet by 30 feet will be excavated and sloped (1:1.5 slope) to the desired depth to access and reconstruct the fiber handhole. A UPRR remediation contractor will remove the existing 6-inch vegetative soil layer and 12-inch clay layer of the Soil Cap. The clean cap materials will be segregated and stockpiled to be used to reconstruct the Soil Cap. The 6-mil HDPE vapor barrier and geotextile fabric will be cut and removed, and the underlying impacted soils below the fabric will be excavated using a combination of mechanical and hydro-excavation methods to allow access to the handhole. Impacted soils will be managed following the attached Soil Management Plan.
- Following excavation, the handhole structure will be extended to the top of the Soil Cap for future access using 48-in round, stackable risers with a concrete lid and sealant to seal the risers. Once the handhole is constructed, the excavated area around the reconstructed handhole will be backfilled with flowable fill (see Attachment A for an example specification of the material) or similar material up to the depth of the existing 6-mil HDPE vapor barrier and geotextile fabric elevation. Once the flowable fill has cured, new 6-mil HDPE vapor barrier and geotextile fabric will be placed on top of the flowable fill and overlap with the existing barrier and geotextile fabric by approximately 2 feet with a thin layer of bentonite between the existing and new 6-mil HDPE vapor barrier. A pipe boot will also be placed around the remaining handhole and 6 mil HDPE vapor barrier extending to the concrete lid (Figure 3). Following placement of the 6-mil HDPE vapor barrier and geotextile fabric, the 12-inch clay layer and 6-inch vegetative soil layers of the soil cap will be replaced.

The soil cap will be constructed to the same specifications as the original Soil Cap (as-builts provided in the Response Action Completion Report (RACR) dated July 18, 2016). The repaired cap will continue to achieve Remedy Standard B response objectives through physical controls to prevent exposure to concentrations of chemical of concern (COCs) in the environmental media greater than commercial/industrial critical human health protective concentration limits (PCLs), as indicated in the 2016 RACR.

Waste generated during these activities will be managed in accordance with state and federal regulations, as detailed below in the Soil Management and Stormwater Management Plans. In addition, dust control and air monitoring will be implemented during these activities as described below.

Soil Management Plan

Impacted soils and hydrovac slurry generated from the excavation will be containerized in roll-off containers staged at the Site next to the Container Storage Area (CSA). Excavated impacted soils to be containerized will be transported using a front-end hauler or similar transport from the excavation area to the CSA along the asphalt road cap, through a gap in the concrete barriers, and then to the CSA area (excavation traffic plan Option A presented on Figure 1). If protective mats are used, an alternative path will be to transport the impacted soils across the Soil Cap area using protective mats, then to the area near the CSA. UPRR will inspect the Soil Cap during and after the soil excavation and backfilling activities are completed to monitor for any damage to the cap. If damages are observed, the Soil Cap will be repaired to the original specifications detailed in the 2016 RACR.

Details of waste management procedures are provided in the attached Soil/Waste Management Plan (Attachment B).

Dust Control and Air Monitoring Plan

A dust control and air monitoring plan will be implemented during the soil cap disturbance activities. Data collected from the dust monitoring will be submitted to the TCEQ with the Response Action Completion Report (RACR) following completion of the soil cap disturbance activities. The Dust Control & Air Monitoring Plan for this project is provided in Attachment C.

Stormwater Management Plan

In the event stormwater comes in contact with contaminated soils during the excavation activities, procedures outlined in the attached Stormwater Management Plan (Attachment D) will be implemented.

Project Schedule

UPRR anticipates the proposed work will be conducted during the 1st Quarter of 2024; however, the construction schedule will be dependent on remediation contractor and fiber optic company's availability and schedule. Once a schedule for construction is confirmed, UPRR will notify TCEQ via email of the construction schedule. UPRR will also confirm with the selected waste facility that the impacted soils to be generated can be received and accepted by the facility. UPRR will submit the RACR for the soil cap disturbance to the TCEQ within 60 days of completion of the construction activities.

If you have any questions or need additional information, please feel free to call me at (737) 703-3900 or Mr. Kevin Peterburs of UPRR at (414) 267-4164.

Sincerely,

WSP USA INC.

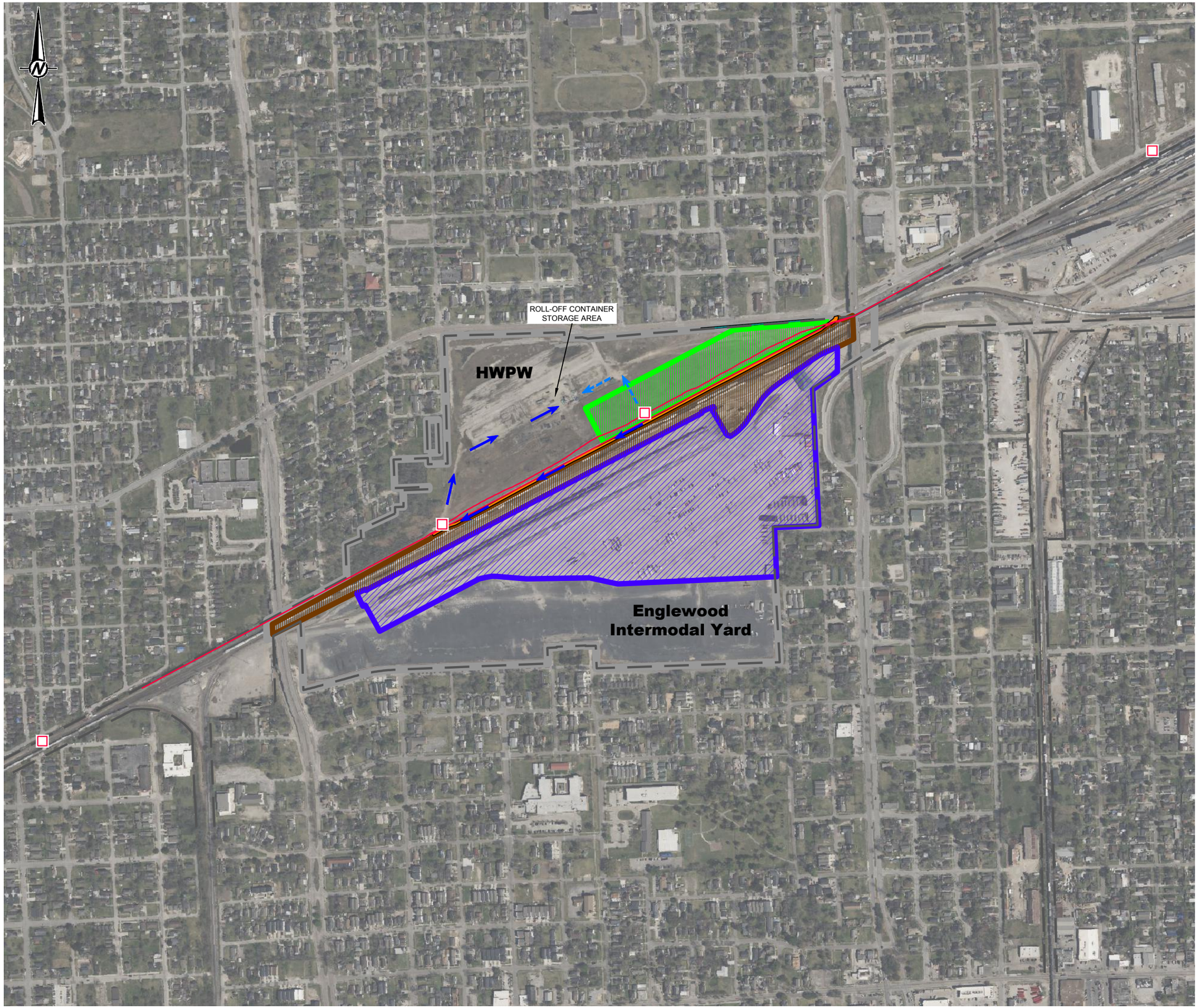
Keshab Gyawali, P.E.
Sr. Consultant, Environmental Engineer

Eric C. Matzner, P.G.
Vice-President, Director Hydrogeologist

CC: Kevin Peterburs, Union Pacific Railroad
Waste Program Manager, TCEQ Region 12, Houston

Attachment A – Flowable Backfill Detail (example, source: Texas Department of Transportation)
Attachment B – Soil/Waste Management Plan
Attachment C – Dust Control & Air Monitoring Plan
Attachment D – Stormwater Management Plan

Figures



LEGEND

- UPRR PROPERTY BOUNDARY
- RAILROAD BALLAST CAP AREA
- ASPHALT CAP AREA
- SOIL CAP
- CONCRETE CAP AREA
- FIBER HANDHOLES
- FIBER OPTIC LINE (APAR ADDENDUM, JULY 2009)
- EXCAVATION TRAFFIC PLAN - OPTION A
- EXCAVATION TRAFFIC PLAN - OPTION B (USING PROTECTIVE MATS)

REFERENCE(S)

PARCEL BOUNDARIES: CITY OF HOUSTON GEOGRAPHIC INFORMATION & MANAGEMENT SYSTEM (GIMS).
AERIAL: 2023 MICROSOFT CORPORATION 2023 MAXAR CNES (2023) DISTRIBUTION AIRBUS DS.

0 300 600
1" = 600' FEET

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

TITLE
CAPPED AREAS

CONSULTANT
wsp

YYYY-MM-DD	2023-12-22
DESIGNED	AJD
PREPARED	AJD
REVIEWED	MH
APPROVED	ECM

PROJECT NO. 31406585.016
REV. 0
FIGURE 1

Last Edited By: adiamond Date: 2023-09-25 Time:1:04:09 PM | Printed By: adiamond Date: 2023-10-26 Time:10:04:48 AM
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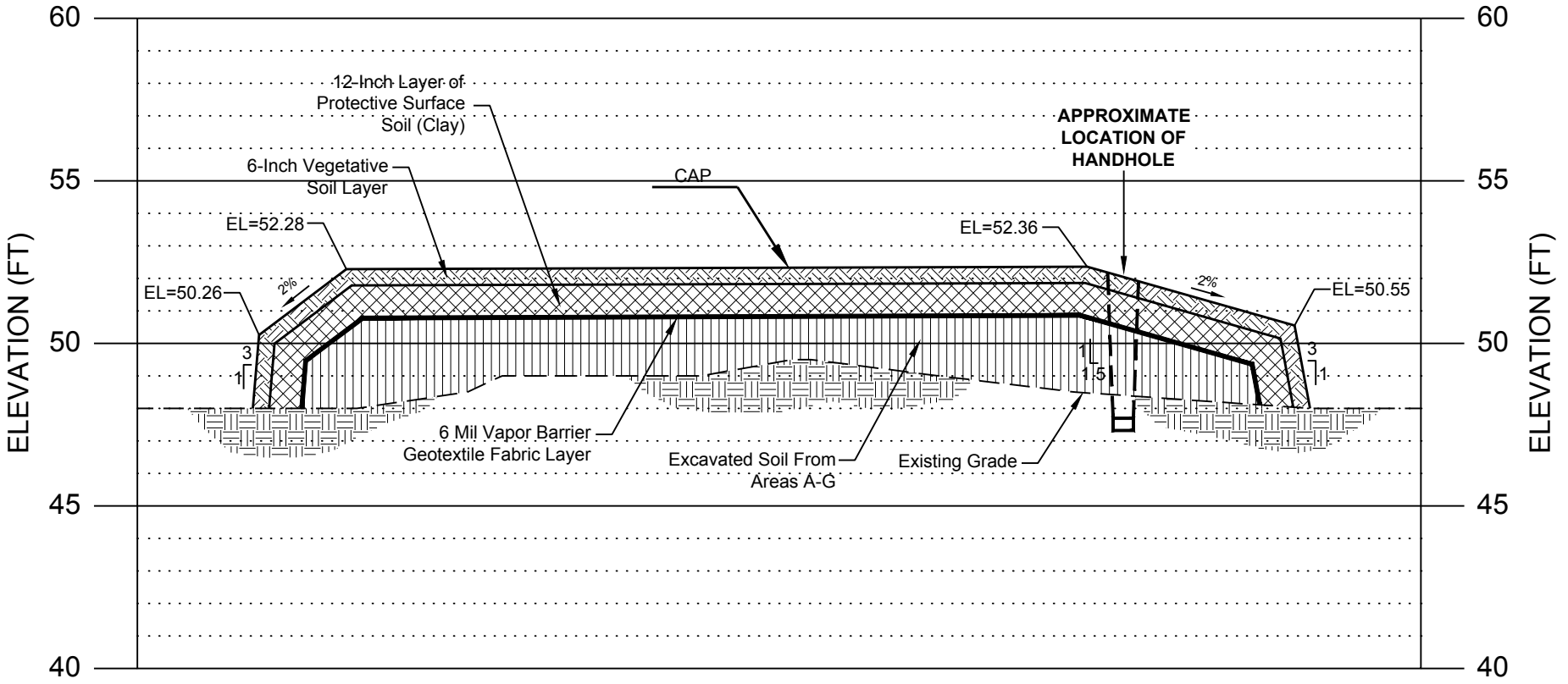

1/1 SECTION

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=200'

0 5
0 200

SOURCE
ATTACHMENT 1C-1 (AS-BUILTS), RACR, JULY 2016.

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	AJD
PREPARED	AJD
REVIEWED	ECM
APPROVED	ECM

TITLE
SOIL CAP CROSS SECTION

PROJECT NO. 31406585.016
REV. 0
FIGURE 2

Last Edited By: adiamond Date: 2023-10-26 Time:10:16:31 AM | Printed By: EX_KGyawali Date: 2024-01-04 Time:8:32:35 AM
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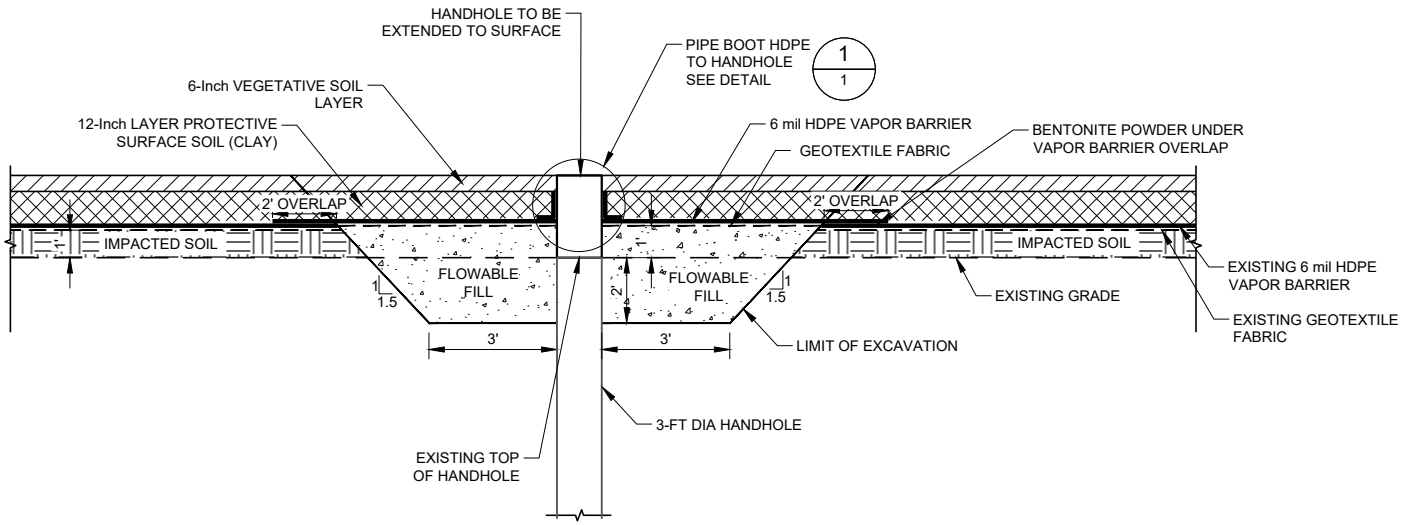

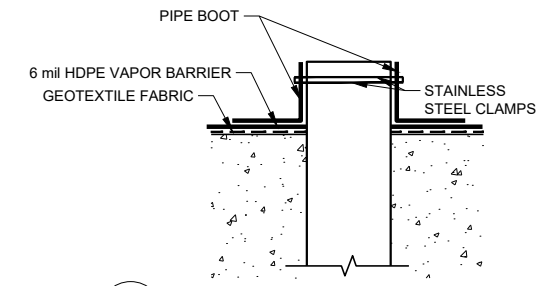

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
HOUSTON WOOD PRESERVING WORKS

CONSULTANT
wsp

YYYY-MM-DD	2023-10-26
DESIGNED	KG
PREPARED	RS
REVIEWED	CEI
APPROVED	ECM

TITLE
FIBER HANDHOLE EXTENSION

PROJECT NO. 31406585.016
REV. 0
FIGURE 3

ATTACHMENT A

Flowable Backfill Detail

Item 401
Flowable Backfill

1. DESCRIPTION

Furnish and place flowable backfill for trench, hole, or other void.

2. MATERIALS

Use materials from prequalified sources listed on the Department website. Use materials from non-listed sources only when tested and approved before use. Allow 30 calendar days for the Engineer to sample, test, and report results for non-listed sources. Do not combine approved material with unapproved material.

1.1 **Cement**. Furnish cement in accordance with DMS-4600, "Hydraulic Cement."

2.2 **Fly Ash**. Furnish fly ash in accordance with DMS-4610, "Fly Ash."

2.3 **Chemical Admixtures**. Furnish chemical admixtures in accordance with DMS-4640, "Chemical Admixtures for Concrete." Use specialty type admixtures to enhance the flowability, reduce shrinkage, and reduce segregation by maintaining solids in suspension when necessary. Use and proportion all admixtures in accordance with the manufacturer's recommendations.

2.4 **Fine Aggregate**. Provide fine aggregate that will stay in suspension in the mortar to the extent required for proper flow and that meets the gradation requirements of Table 1.

Table 1
Aggregate Gradation Chart

Sieve Size	Percent Passing
3/4"	100
#200	0–30

Test fine aggregate gradation in accordance with Tex-401-A.

Plasticity Index (PI) must not exceed 6 when tested in accordance with Tex-106-E.

1.5 **Mixing Water**. Use mixing water in accordance with Item 421, "Hydraulic Cement Concrete."

3. CONSTRUCTION

Submit a construction method and plan, including mix design, for approval. Provide a means of filling the entire void area, and be able to demonstrate this has been accomplished. Prevent the movement of any inserted structure from its designated location. Remove and replace or correct the problem if voids are found in the fill or any of the requirements are not met as shown on the plans without additional cost to the Department.

Furnish a mix meeting the requirements of Table 2 unless otherwise shown on the plans.

Table 2
Flowable Fill Mix Design Requirements

Property	Excavatable	Non-Excavatable	Test Method
28-day Compressive Strength,[1] psi	80 to 200	> 200	ASTM D4832
Consistency,[2] Min diameter, in.	8		ASTM D6103
Unit Weight, pcf	90 to 125	100 to 145	ASTM D6023
Air Content, %	10 to 30	5 to 15	ASTM D6023

1. Average of 2 specimens.
2. Mixture must not segregate.

Mix the flowable fill using a central-mixed concrete plant, ready-mix concrete truck, pug mill, or other approved method.

Furnish all labor, equipment, tools, containers, and molds required for sampling, making, transporting, curing, removal, and disposal of test specimens. Furnish test molds meeting the requirements of Tex-447-A. Transport, strip, and cure the test specimens as scheduled at the designated location. Cure test specimens in accordance with Tex-447-A. The Engineer will sample, make, and test all specimens. Dispose of used, broken specimens in an approved location and manner. The frequency of job-control testing will be at the direction of the Engineer.

4. MEASUREMENT

This Item will be measured by the cubic yard of material placed. Measurement will not include additional volume caused by slips, slides, or cave-ins resulting from the Contractor's operations.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Flowable Backfill." This price is full compensation for furnishing, hauling, and placing materials and for equipment, tools, labor, and incidentals.

ATTACHMENT B

Soil/Waste Management Plan

ATTACHMENT B

SOIL CAP DISTURBANCE – SOIL/WASTE MANAGEMENT PLAN

UNION PACIFIC RAILROAD – HOUSTON WOOD PRESERVING WORKS

Based on the plan to access a fiber handhole, approximately 20 cubic yards (in-place) of impacted soil/ slurry will be generated from the Soil Cap disturbance activities at the Houston Wood Preserving Works site (the Site). Excavated soils will be stored in a controlled manner in roll-off containers or drums that do not allow contaminated media to migrate and does not allow storm water to contact the waste placed pending disposal. The roll-offs will be covered when not actively being loaded.

Lined roll-off containers will be constructed of steel and shall be in good working order and condition without damage that would allow excavated soils to migrate from the roll-off container. Roll-off containers will be lined and covered during periods when they are not being loaded or during precipitation events. If drums are used for storage of soil, drums shall be constructed of steel and shall be in good condition and working order without damage that would allow contents to escape. Each drum shall include a cover/top which will allow the drum to be closed and sealed at all times, except when materials are being added to or removed from the drum. Roll-offs and drums will be stored within the Site pending disposal.

Samples for waste classification will be collected. For each roll-off container, a 5-point composite of the soils / slurry will be collected from each roll-off boxes. The 5-point composite sample will be collected from each roll off by collecting directly from five separate, random, representative areas within the roll-off container from the loose material using a gloved hand and/or decontaminated/disposal sampling equipment or excavator bucket. The loose material will be collected in a single container or Ziploc bag and mixed thoroughly. A sample will be collected from the container/bag using the appropriate sampling procedure for the required analytical methods. The waste samples will be analyzed for the following analysis for waste characterization and assessment of underlying hazardous constituents (UHCs):

- Semi-Volatile Organic Compounds (SVOCs) by SW-846 Method 8270;
- Toxicity characteristic leaching procedure (TCLP) by Method 1311 for RCRA 8 Metals.

Soils and slurry generated from below the Soil Cap will be classified as listed hazardous waste (F034/K001) (unless otherwise demonstrated with TCEQ approval). Landfill management and treatment will be determined by analytical results of the samples. The waste will be profiled and disposed of at a TCEQ permitted disposal facility.

Texas Waste Codes (TWCs) listed on the current Notice of Registration (NOR) (Solid Waste Registration Number 31547) will be used for the wastes generated from the excavation activities. Wastes generated as part of these activities will be transported to a disposal facility permitted to receive the waste within 90 days of generation.

ATTACHMENT C

Dust Control & Air Monitoring Plan

Dust Control and Air Monitoring Plan

Former Houston Wood Preserving Works - Fiber Optic Handhole Excavation and Modification Operations

Houston, Texas

Prepared for:

Union Pacific Railroad

Author: Derrick K. Johnson

Date: 12/21/2023

Contents

Purpose and Scope

This document describes the dust control and air monitoring procedures to be employed by Union Pacific Railroad (UPRR) and its contractors during focused narrowly focused excavation work associated with service and modification of handholes for fiber optic lines associates with railroad signal and communications functions. Modifications may be made to this plan by the selected air and dust monitoring contractor.

This project will take place in the south-central area of the former Houston Wood Preserving Works (HWPW) Site, near the southwest corner of the soil-capped area. Figure 1 provides an overview of the approximate geographic area.

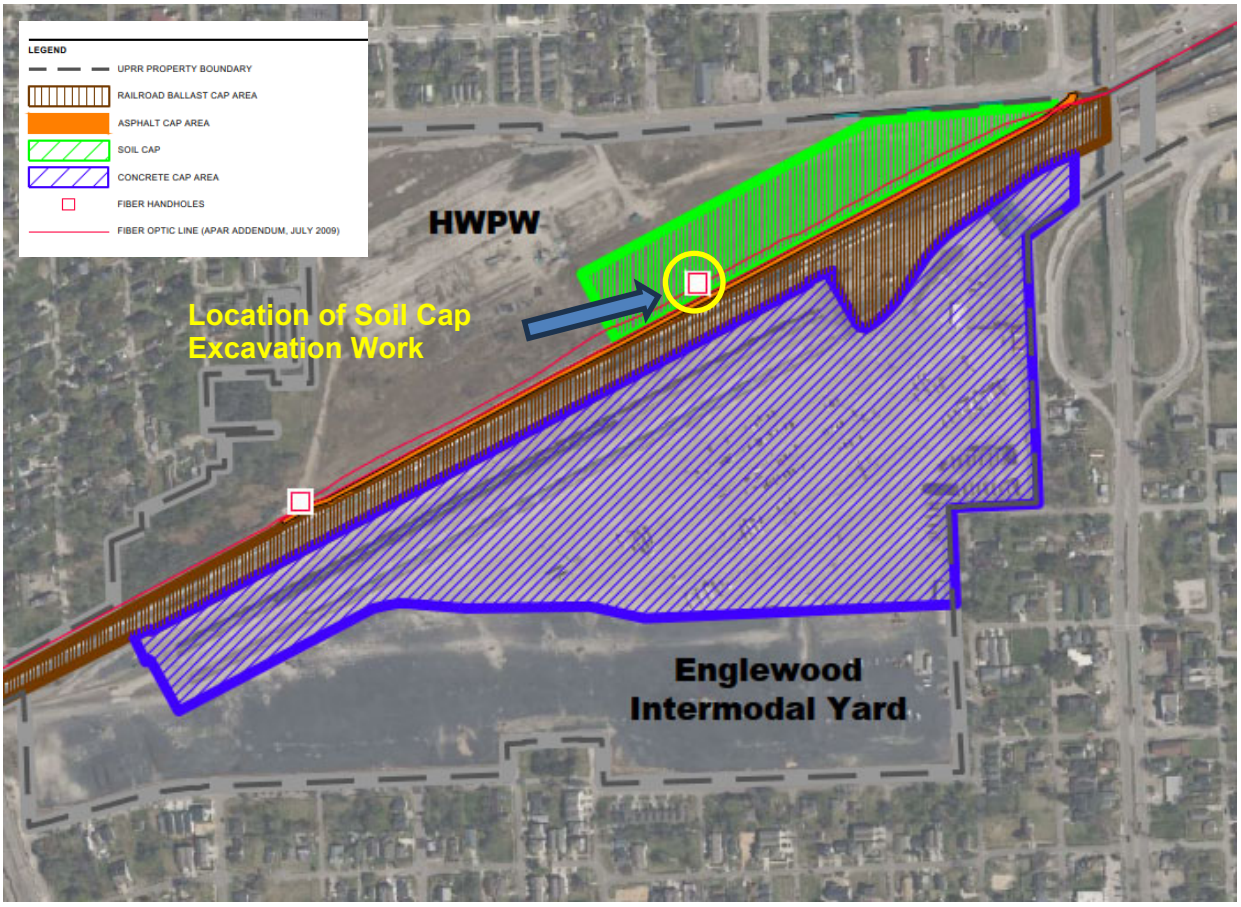

Figure 1. Site Plan for Focused Excavations, former Houston Wood Preserving Works

Section 1. Dust Control Plan

General Description of Remediation Site

This project will take place on the southwest portion of the Soil Cap just north of the Asphalt Roadway Cap.

Residential properties are located north of the former Houston Wood Preserving Works site, along the north side of Liberty Road, approximately 520 feet from the work area. Closest residential properties south of the work area are approximately 1,100 feet to the southeast, on the east side of Harlem Street, separated from the work area by main line and intermodal yard train tracks and the intermodal yard itself. No residences are located due east of the worksite, this area being occupied the former HWPW site, the UPRR Englewood Yard and the Lockwood overpass. The closest residential properties generally to the west are located approximately 1,220 feet west-northwest of the excavation area, outside the west perimeter fence of the former HWPW site, near the intersection of Kashmere and Eddie Streets.

General Description of Remediation Activities

Excavation work will be focused on excavating and modifying an existing fiber optic manway or handhole that is located under the Soil Cap at the Site. In order to access the existing fiber handhole and construct the handhole, work crews will remove approximately 6 inches of vegetative soil layer, 12 inches of clay layer of the Soil Cap, and approximately 24 to 48 inches of contaminated soil to the fiber optic handhole. An area approximately 30 feet by 30 feet will be excavated and sloped to the desired depth in order to access and reconstruct the fiber handhole. Following excavation, the handhole structure will be extended to the top of the Soil Cap for future access using 48-in round, stackable risers with a concrete lid and sealant to seal the risers. Once the handhole is constructed, the excavated area around the reconstructed handhole will be backfilled with flowable fill or similar material up to the elevation of an existing 6-mil HDPE vapor barrier and geotextile fabric elevation. Once the flowable fill has cured, new 6-mil HDPE vapor barrier and geotextile fabric will be placed on top of the flowable fill, overlapping with the existing barrier and geotextile fabric by approximately 2 feet. A thin layer of bentonite between the existing and new 6-mil HDPE vapor barrier. A pipe boot will also be placed around the remaining handhole, and the 6 mil HDPE vapor barrier will be extended to the concrete lid. Following placement of the 6-mil HDPE vapor barrier and geotextile fabric, the 12-inch clay layer and 6-inch vegetative soil layers of the soil cap will be replaced.

Work crews are anticipated to be working only in the locations specified in Figure 1. Potential for significant migration of remediation-related particulate matter appears low for this project.

Target Dust Control Levels

Control Levels for Measured Airborne Dusts

Air monitoring will be performed during soil disturbance activities (see Section 2, Air Monitoring Plan, for details on air monitoring methods). Real-time measurements for PM 2.5 and PM 10 particulates will be conducted, and the following control levels will apply:

- ***Notice Level*** –30-minute average of PM 2.5 particulate levels > 30 ug/m3 and/or PM 10 particulate levels > 75 ug/m3
    - The Notice Level is intended as an early warning of potential elevations in airborne dust levels. When the notice level is exceeded the Air Monitoring Specialist will investigate the area(s) where the initial elevations in dust levels are indicated, and inform the Remediation Manager, Environmental Manager and other designated personnel of the known or most likely source(s) of the elevated levels, and advise what actions, if any,

appear warranted to limit airborne dust generation. The Remediation Manager and Environmental Manager will determine how to best implement the recommendations of the Air Monitoring Specialist.

- ***Action Level*** –30-minute average of PM 2.5 particulate levels > 55 ug/m3 and/or PM 10 particulate levels > 150 ug/m3

    - The Action Level is intended as an indication that control measures should be implemented in a timely manner to mitigate generation of airborne dusts. When the Action Level is exceeded, the Air Monitoring Specialist will investigate the area(s) where the elevations in dust levels are indicated, and inform the Remediation Manager, Environmental Manager and other designated personnel of the known or most likely source(s) of the elevated levels, and advise what actions, if any, appear warranted to limit airborne dust generation. The Remediation Manager and Environmental Manager will determine how to best implement the recommendations of the Air Monitoring Specialist.

- ***Stop-Work Level*** –30-minute average of PM 2.5 particulate levels > 85 ug/m3 and/or PM 10 particulate levels > 300 ug/m3

    - The Stop-Work Level is intended as an indication that continued generation of airborne dusts at or above the specified levels are likely to result in overall daily averages or short-term elevations in airborne dust levels that could be greater than the parameters established for the project. When the Stop-Work Level is exceeded, work in the affected area(s) should be stopped until additional controls are implemented. The Air Monitoring Specialist will investigate the area(s) where the elevations in dust levels are indicated, reporting his findings and recommendations to the Remediation Manager, Environmental Manager and other designated personnel. This team will work together to determine what control measures will be effective in reducing dust levels and how to best implement those measures and resume remediation activities. If stop-work levels are reached more than twice per day, the dust-generating activity will be stopped for the remainder of the workday and UPRR will design and implement a more effective dust control program prior to resuming work the following workday

Visible Airborne Dust Emissions

For the purposes of this Dust Control and Air Monitoring Plan*, significant visible emissions of airborne dusts* are defined as follows:

- Visible emissions of airborne dust from remediation-related activities (including, but not limited to, excavation, grading, loading and unloading of aggregates and soils and vehicular traffic) that meet any or all the following criteria:

    - Generates a visible dust cloud that extends more than 10 feet vertically and/or more than 25 feet horizontally in any direction beyond the point of generation and:

        - Persists for more than five (5) minutes at a time; and/or -

        - Recurs more than twice every thirty (30) minutes.

    - Generates a visible dust cloud that is migrating or appears likely to migrate to non-railroad properties.

This plan includes control measures for specific operations that may generate significant visible airborne

dust emissions. However, all project supervisory personnel should remain alert for sources of significant visible airborne dust emissions and take appropriate action to minimize such emissions to the extent practical whenever and wherever they may occur. The Air Monitoring Specialist, Remediation Manager and Environmental Manager will work as a team to monitor and minimize significant visible airborne dust emissions.

Roles and Responsibilities

Air Monitoring Specialist

The Air Monitoring Specialist will have primary responsibility for maintaining and monitoring results from air monitoring stations, informing the Remediation Manager and Environmental Manager when control levels are triggered, identifying activities and conditions contributing to elevated dust levels and making initial recommendations for corrective action. Specific responsibilities include:

- Maintenance and monitoring of air monitoring stations, as described in the Air Monitoring Plan section of this document.
- Making routine observations of worksite activities, with specific focus on potential dust-generating activities.
- Communicate instances of control level triggering and/or generation of significant visible airborne dust emissions to the Remediation Manager and Environmental Manager, along with explanations of the sources of dust emissions and recommendations for appropriate control measures.
- Communicate results of integrated air sample analyses to designated UPRR management personnel, the Environmental Manager and Remediation Manager.
- Maintain a daily log of site activities, including photographs, observations, air monitoring station inspections, integrated air sample collection, control level triggering events, notifications made to the Remediation Manager and Environmental Manager, and responsive actions.
- Assist the Remediation Manager and Environmental Manager in developing effective and practical dust control measures for atypical and/or as-needed situations involving dust emissions.

Environmental Manager

The Environmental Manager will have primary responsibility for working directly with the Air Monitoring Specialist, informing UPRR managers of day-to-day control measures and responses. Specific responsibilities include:

- Providing support and guidance to the Air Monitoring Specialist in communicating with project managers and UPRR personnel.
- Inform UPRR management personnel of relevant day-to-day dust control activities and atypical events.
- Work with the Air Monitoring Specialist and the Remediation Manager to develop practical and effective measures for atypical and/or as-needed dust control measures.

- Effectively communicate dust control measures and requirements to UPRR managers and jobsite supervisory personnel.

The Environmental Manager may delegate some or all of these responsibilities to qualified persons but remains ultimately responsible.

Site Supervisory Personnel

Site supervisory personnel are responsible for ensuring duties and responsibilities for dust control measures assigned to them are effectively and consistently implemented. They are also responsible for monitoring and reporting to the Air Monitoring Specialist and Environmental Manager instances of generation of significant visible airborne dusts.

Documentation and Reporting

Daily Log

The Air Monitoring Specialist will maintain a daily log of site activities, including, but not limited to:

- Descriptions or site work activities.
- Site photographs and relevant observations.
- Periodic observations of environmental conditions (windspeed, temperature, humidity, rainfall, etc.)
- Air monitoring station inspections
- Integrated air sample collection record, including sample data sheets, chain of custody records and lab reports.
- Descriptions of control level triggering events, notifications made to the Remediation Manager and Environmental Manager, and responsive actions.
- Descriptions of any problems encountered, and responsive actions taken.

Weekly Summary Reports

The Air Monitoring Organization will issue weekly summary reports to the designated UPRR manager(s). Weekly summaries will include, but not be limited to, the following items:

- Summary results of the week’s air monitoring data.
- Summary of any control level triggering events and response actions taken.
- Summary of any problems or atypical situations encountered, and the actions taken for resolution.

- Compilation of the Air Monitoring Specialist's daily logs for the preceding week, including notes and photographs.

Closeout Report

The Air Monitoring Organization/UPRR contractor will issue a final closeout report, summarizing the overall results of air monitoring and dust control efforts for the entire project.

Primary Dust Sources and Control Measures

This section specifies the primary sources of potential dust generation, and the control options to be employed to minimize dust emissions from those sources. The sources identified here are anticipated to be the most significant and/or frequent dust sources associated with the proposed work.

Vehicular Traffic

Vehicular traffic is anticipated along the Asphalt Roadway Cap along the southern boundary of the Soil Cap, and work equipment will move about the excavation area. Loose soils from the tires of vehicles and work equipment may deposit on the asphalt and concrete travel surface, and work equipment may generate some dusts from required onsite movements. Environmental drying and pulverization of deposited soils along the roadway may form finer dusts which can be disturbed by vehicles and equipment traveling over the site.

The following controls are to be used to minimize dust formation from vehicular traffic along the service road:

- ***Proactive cleaning of travel surfaces***
  - Travel surfaces and road should be cleaned of soil/dust accumulation by street sweepers, using wet methods (i.e., street sweeper equipped with water spray bars, or water truck wetting of road surface, immediately followed by street sweeper).
  - Dry sweeping of travel surfaces is prohibited.

If the previously specified controls are not effective in reducing visible and/or measured roadway dust emissions, the following secondary controls will be implemented:

- ***Reduce speed of vehicular traffic on service road to 5 mph until visible and/or measured dust levels appear to be adequately controlled.***
  - Reduced speed will apply to all traffic on the service road, including crew vehicles, UPRR vehicles, haulers and any remediation equipment traveling on the service road.

Loose Aggregate and Soil Loading, Hauling and Unloading

Loading and unloading of loose aggregate and soils, whether excavated materials to be transported offsite or fresh fill material intended for onsite use, can produce airborne dusts if the materials are dry.

Hauling of these materials in uncovered or leaking transports can allow materials to blow off the tops of the transport and/or fall to roadways and other traffic routes, where they can dry and become pulverized, potentially contributing to airborne dust levels. The following controls will be employed to minimize airborne dusts potentially generated by loading, hauling and unloading loose aggregates and soils:

- Transport:
    - Truck beds and containers used for hauling loose aggregate and soils will be covered on top during transport, to prevent blowing off of materials while onsite and during travel.
    - Unloading gates on truck beds and containers used for hauling loose aggregate and soils will be kept functional and closed at all times while traveling to, from and within the remediation site. Loose soils and aggregates must not be allowed to spill onto onsite or offsite traffic paths.
- Loading and Unloading:
    - Loading and unloading of loose aggregates and soils should be monitored closely to ensure that airborne dust generation is minimized.
    - Where loading or unloading appears to generate significant visible airborne dust emissions and / or triggers PM 2.5 or PM 10 control levels, the following controls will apply:
        - Loading or unloading should be completed in the shortest amount of time possible.
        - If wind conditions appear to create a potential for migration of visible airborne dusts to non-railroad properties, any or all of the following will be employed, as most practical for the situation:
            - Loading or unloading will be paused until conditions are more favorable.
            - Materials will be loaded or unloaded in an alternate location, further from non-railroad properties.
            - Water will be used to wet the materials being loaded or unloaded, reducing generated dusts.
                - Important! No wetting of potentially hazardous materials should be performed during loading without prior approval from the Site Environmental Manager.

Secondary Dust Sources and Control Measures

This section specifies secondary sources of potential dust generation, and the control options to be employed to minimize dust emissions from those sources. The sources identified here are anticipated to be infrequent and/or to generate limited elevations in dust levels. Specified controls are to be

implemented on an as-needed basis and are not required when the specified sources are not present or active or have little potential to generate airborne dust.

Excavation Activities

Excavation activities may include drilling, digging with backhoes and track hoes, as well as moving and relocation of excavated soils and aggregates with the same equipment, as well as dozers and front-end loaders. Excavated soils and aggregates on this project are anticipated to typically have a relatively high moisture content, and to not routinely produce significantly elevated dust levels unless the excavated materials are allowed to dry. In the event that excavation activities produce significant visible airborne dust emissions and/or trigger PM 2.5 or PM 10 control levels, the following dust control measures will be used:

- Where practical, use water to wet the excavation and/or excavated materials.
- Wetting need not be extreme, only enough to suppress significant visible dust emissions for the duration of the operation.

Other Sources of Dust Emissions not Specifically Identified

During the course of the project, other sources of dust emissions may be observed. If these sources generate significant visible airborne dust emissions and/or trigger PM 2.5 or PM 10 control levels, the Air Monitoring Specialist and Environmental Manager will work as a team to develop and implement appropriate controls.

Section 2. Air Monitoring Plan

Purpose and Scope

This air monitoring plan has been developed to ensure that dust control measures implemented for the project are effective in controlling migration of airborne dusts from remediation activities to non-railroad properties. Air quality monitoring under the scope of this plan will consist of fence-line ambient air monitoring to measure airborne dust concentrations.

The primary objectives of the perimeter air monitoring are to:

- Monitor and record the ambient airborne dust concentrations at the UPRR property lines immediately adjacent to residential properties.
- Help ensure that background-adjusted dusts levels at the UPRR property lines do not exceed the current EPA National Ambient Air Quality Standards (NAAQS) for particulate matter.
- Ensure that engineering controls and work practices help minimize potential off-site drift of airborne dusts.

Air monitoring will be conducted by a UPRR-selected contractor. Modifications to this plan may be made by the UPRR-selected contractor; however, the modifications will need to meet the primary objectives.

General

The USEPA's 2012 NAAQS standard for $PM_{2.5}$ and PM_{10} particulate matter have been used to develop the air monitoring plan for this project. $PM_{2.5}$ particulates are fine particulates which can penetrate deeper into the respiratory system. PM_{10} are coarser particles. Of interest in this project are the 24-hour levels established for these particulates. The 24-hour levels represent airborne concentrations averaged over a 24-hour period. The respective particulate NAAQS levels are presented below:

- $PM_{2.5}$ (24-hr average): 35 ug/m3
- PM_{10} (24-hr average): 150 ug/m3

The goal of the Action Levels established for this project is to help ensure that remediation activities do not contribute significantly to airborne particulate concentrations at off-property locations. Control levels are chosen to minimize the contribution of fugitive dust emissions from the rail remediation activities to the overall particulate matter concentrations.

Methods of Monitoring

Data-logging Particulate Monitors

Real-time particulate air monitoring stations will be equipped with TSI Dustrak laser particle counters[1] or similar monitors, configured for simultaneous measurement of $PM_{2.5}$ and PM_{10} particulate matter, logging at 5 - 10-minute intervals. The monitors will be equipped with omni-directional sampling heads and

[1] Laser particle counters with equivalent capability and accuracy may be substituted for the TSI Dustrak units specified. If different particle counters are used, an amendment to this plan will be issued, describing the instrument used and demonstrating equivalent or better accuracy.

mounted on tripods or other suitable support at an approximate height of 5-6 feet.

A weather station will also be placed at the site to measure wind direction, wind speed, temperature, humidity and precipitation. Weather station will log data at 5-minute intervals. All stations will be powered by either generator, batteries coupled with solar panels or other power supply suitable to provide continuous operation for the duration of daily excavation activity.

Air monitors and weather stations will be deployed and log data for the full duration of each day's excavation-related activities for the duration of the project.

Instruments will be connected to the internet through cellular modems, and all data will be uploaded to a website that will allow real-time and historic review of the data by onsite personnel as well as remotely located contractor, UPRR and other designated management personnel.

Real-time data from the downwind particulate monitors will be evaluated in 30-minute averaged blocks to provide comparison to Control Level criteria specified in the Dust Control Plan (Section 1 of this document).

Integrated Air Samples

Soil sampling in work areas were found to have concentrations of polynuclear aromatic hydrocarbons (PAH's) and some metals. Soil sampling data suggests that significant airborne exposures to these agents is unlikely, but a limited number of integrated air samples will be collected to verify that dust control measures are effectively limiting migration of these agents to non-railroad properties.

The agents to be sampled and the sample collection and analysis methods are specified in the following table.

Table 1. Integrated Air Sampling Agents and Analysis Methods

Agent	Collection Media	Air Flow Rate	Analysis Method
Particulate-phase PAHs	PTFE/XAD2	1.7 -2 lpm	NIOSH 5506
Arsenic	PVC filter	4 lpm	NIOSH 7303-MS
Lead	PVC filter	4 lpm	NIOSH 7303/7300 ICP-MS

Dates of collection of integrated air samples and number of samples collected will vary, based on site activities, locations affected and environmental conditions. Collection of one (1) air sample per week for each of the analytes in Table 1 is planned.

Control Levels for PAHs and metals will be as follows:

- PAHs:
    - The TCEQ has established interim AMCV for selected PAHs.
    - Air sample results for PAHs will be compared to the short-term AMCV specified in the table below to determine effectiveness of dust control measures.

Current TCEQ AMCV for PAHs
(Source: TCEQ TAMIS Database, retrieved 7/1/2021)

PAH	Short-Term AMCV (ug/m3)	Long-Term AMCV (ug/m3)
Acenaphthene	100	10
Acenaphthylene	100	10
Anthracene	1	0.067
Benzo(a)anthracene	0.5	0.05
Benzo(a)pyrene	None	0.017
Benzo(b)fluoranthene	0.5	0.05
Benzo(g,h,i)perylene	0.5	0.05
Benzo(k)fluoranthene	0.5	0.05
Chrysene	0.5	0.05
Dibenzo(a,h)anthracene	0.5	0.05
Fluoranthene	0.5	0.05
Fluorene	10	1
Indeno(1,2,3-cd)pyrene	0.5	0.05
Naphthalene	500	50
Phenanthrene	8	0.8
Pyrene	0.5	0.05

  - Where sample period average PAH concentrations are at or below the specified short-term AMCV or not detected in air samples with a reporting limit at or below the long-term or short-term AMCV, dust control measures will be considered effective. Air samples will be collected at sufficient volume and duration to ensure reporting limits are at or below the short-term AMCV.

- Arsenic:
  - The Texas Commission on Environmental Quality (TCEQ) has established a long-term Air Monitoring Comparison Value (AMCV)[2] for arsenic of 0.067 ug/m^3.
  - Sample analysis results will be compared to the long-term AMCV. Air samples will be collected at sufficient volume and duration to ensure reporting limits are at or below the long-term AMCV.
  - Where sample period average arsenic concentrations are at or below the AMCV or not detected in air samples with a detection limit at or below the AMCV, dust control measures will be considered effective.
- Lead:
  - The USEPA has established a NAAQS for lead of 0.15 ug/m3, as a three-month average. The TCEQ has adopted this value by reference in its AMCV for lead.
  - Air sample results for lead will be compared to the NAAQS of 0.15 ug/m3 to determine effectiveness of dust control measures. Air samples will be collected at sufficient volume

[2] AMCVs are chemical-specific air concentrations set by the TCEQ and intended to protect human health and welfare. Exposure to an air concentration at or below the AMCVs is not likely to cause adverse health effects in the general public, including sensitive subgroups such as children, the elderly, pregnant women, and people with preexisting health conditions.

and duration to ensure reporting limits are at or below the NAAQS.

- Where sample period average lead concentrations are at or below the NAAQS or not detected in air samples with a reporting limit at or below the NAAQS, dust control measures will be considered effective.

After sample collection, samples will be properly packaged and secured and shipped overnight to a qualified laboratory for rush analysis. Sample results will be available in 4-5 business days of receipt by the laboratory.

If sample results indicate concentrations above specified control levels, and UPRR will determine appropriate responses necessary to further reduce dust emissions from the sampled operations/areas.

Monitoring Station Locations

Four (4) PM 2.5 / PM 10 monitoring stations will be active each day remediation activities are to be performed. On days when PAH and metals samples are collected, those samples will be collected at the air monitoring station most directly downwind of the excavation area.

See Figure 2 for illustration of air sampling station locations.

Determination of PM 2.5 / PM 10 Particulate Levels for Control Purposes

The tracks immediately south of the work area may be used to park idling locomotives. Exhaust emissions from idling locomotives and traffic dust from intermodal operations may confound perimeter particulate measurements for this segment.

Air quality in the Houston area is variable. Work activities are not the sole source of variations in particulate levels which are used to determine whether dust concentrations are within acceptable control limits. The following paragraphs describe how will process and interpret air sampling data for this project.

- Only readings from PM 2.5 / PM 10 stations which are downwind or parallel to remediation activities or are located in areas visibly impacted by remediation-related dust will be used for comparison to the dust Control Levels.
- Observations of visual dust emissions from remediation activities, municipal construction and repair projects, traffic levels and idling locomotives will be considered in determining whether potential elevations in particulate levels at those monitoring stations are attributable to remediation activities.
- If Air Monitoring Specialist identifies other site or environmental conditions that clearly may confound particulate level measurements for control purposes, then the specialist may apply additional reasonable corrections or exclusions to monitoring station data. Any such corrections or exclusions will be documented and communicated to UPRR managers and the project Environmental Manager.

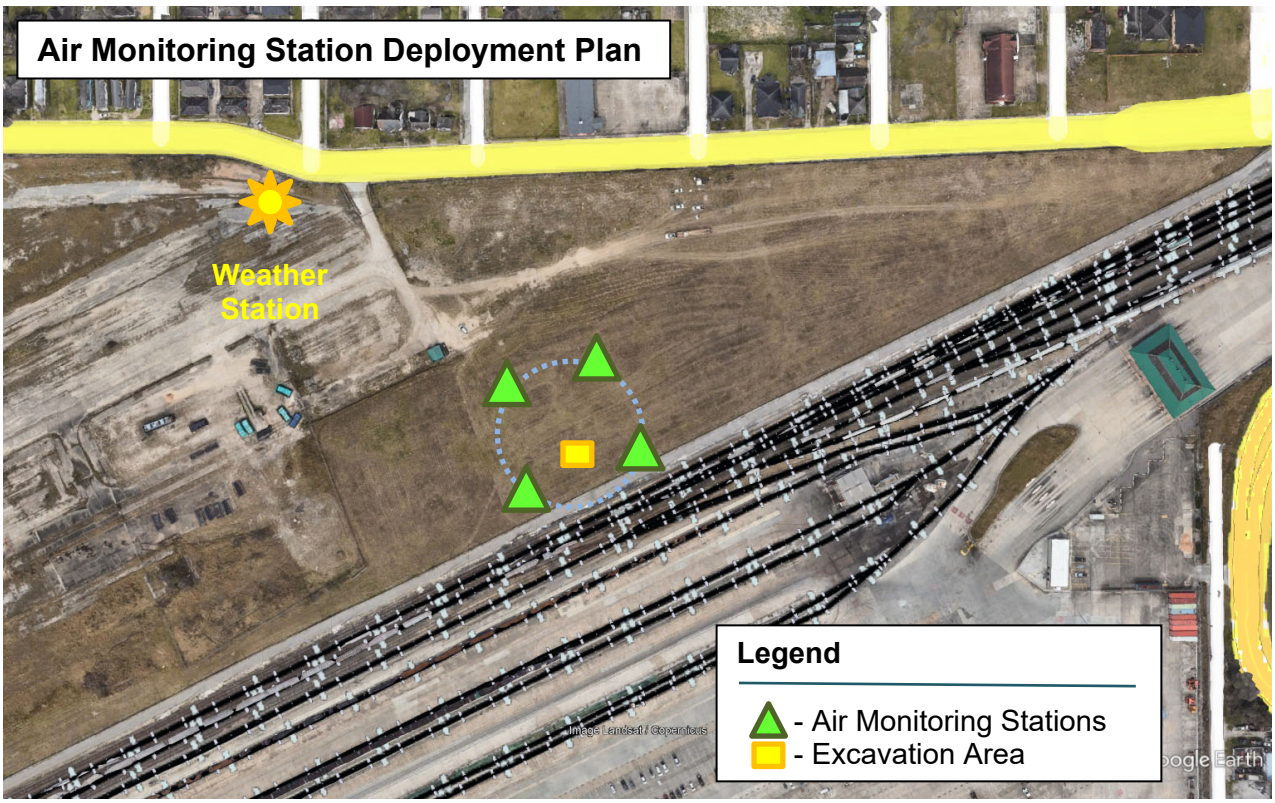

Figure 2. Air Monitoring Station Locations for Fiber Optic Handhold Excavation, former Houston Wood Preserving Works Site

Notifications

Notifications of exceedances of the particulate Control Levels will be sent via text message to onsite personnel and designated site managers.

The onsite Air Monitoring Specialist will be the primary individual responsible for monitoring the notifications and recommending additional dust mitigation procedures.

Procedures for Air Monitoring Station and/or Weather Station Failure

In the event of failure of one or more monitoring stations and/or the Weather Station, the onsite industrial hygienist will immediately contact the project manager.

The project manager will arrange for timely correction of the problem, including, if necessary, replacement of the affected instrumentation with 72 hours.

ATTACHMENT D

Stormwater Management Plan

ATTACHMENT D

SOIL CAP DISTURBANCE – STORMWATER MANAGEMENT PLAN

UNION PACIFIC RAILROAD – HOUSTON WOOD PRESERVING WORKS

Efforts will be made to minimize stormwater runoff into the excavation and minimize contact with contaminated soils generated during the excavation activities. Best management practices (BMPs) such as temporary triangular silt dikes and/or straw waddles will be placed around the excavation area until backfilled. Excavated soils will be immediately placed into roll-off boxes and covered as described in the Soil Management Plan. This process will prevent exposure of contaminated soils to stormwater and will prevent stormwater from becoming potentially contaminated.

If stormwater comes into contact with impacted soils within the planned excavation, stormwater will be containerized by pumping or hand bailing it into a container. Stormwater will be stored in a controlled manner in roll-off containers or 55-gallon drums. The containers will be constructed of steel and shall be in good working order and condition without damage that would allow containerize stormwater to migrate from the roll-off container or drums. Roll-off containers designed to hold liquids will be used for containerizing stormwater during the project. If drums are used, each drum shall include a cover/top which will allow the drum to be closed and sealed at all times, except when fluids are being added to or removed from the drum. Roll-off containers and drums will properly labeled and stored within the Site pending classification and disposal.

Stormwater that comes in contact with impacted soils that are classified listed hazardous waste (F034/K001) will be classified as listed hazardous waste unless otherwise demonstrated with TCEQ approval. The waste samples will be analyzed for the following analysis for waste characterization and assessment of underlying hazardous constituents (UHCs):

- Semi-Volatile Organic Compounds (SVOCs) by SW-846 Method 8270; and
- RCRA 8 Metals.

Landfill management and treatment will be determined by analytical results of the samples. The waste will be profiled and disposed of at a TCEQ permitted disposal facility.

In the event stormwater has not come in contact with impacted soils and requires management, then representative samples of the containerized stormwater will be collected and analyzed to allow the stormwater to be classified and profiled for disposal at a UPRR-approved TCEQ permitted disposal facility in accordance with 30 TAC 335 Subchapter R. The waste classification will be based on the comparison of the stormwater analytical data to the hazardous characteristics and Class 1 Toxic Constituent's Maximum Leachable Concentrations (30 TAC Subchapter R (Appendix 1 Table 1)) detailed in the TCEQ *Guidance for the Classification and Coding of Industrial and Hazardous Wastes (RG-022, Revised 03/22)*. UPRR will evaluate the analytical data to determine if the waste is characteristically hazardous through analytical testing as discussed under 30 TAC 335.504(a)(3).

Containerized stormwater will be sampled and analyzed for the following analyses for waste characterization:

- Volatile Organic Compounds (VOCs) by SW-846 Method 8260;
- Semi-Volatile Organic Compounds (SVOCs) by SW-846 Method 8270;

- Total Petroleum Hydrocarbons (TPH) by Texas Method 1005;
- RCRA Metals by SW-846 Methods 6000/7000 series; and
- Reactivity (Method 9010), Corrosivity (Method 9040), and Ignitability (Method 1010/1020/D92).

Texas Waste Codes (TWCs) listed on the current Notice of Registration (NOR) (Solid Waste Registration Number 31547) will be used for the wastes generated from the excavation activities. Wastes generated as part of these activities will be transported to a disposal facility permitted to receive the waste within 90 days of generation.