



December 16, 2024

Project No. 31406585.016

Mr. Jerry Wick

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

Re: **MONTHLY STATUS UPDATE – ENGLEWOOD INTERMODAL YARD – NAPL COLLECTION
SYSTEM/CONCRETE CAP REPAIRS AND REVISED INTERIM MEASURES WORK PLAN
CONSTRUCTION ACTIVITIES
UNION PACIFIC RAILROAD HOUSTON WOOD PRESERVING WORKS FACILITY
4910 LIBERTY ROAD FACILITY, HOUSTON, TEXAS
POST-CLOSURE CARE PERMIT NO. HW-50343; INDUSTRIAL SWR NO. 31547**

Dear Mr. Wick:

WSP USA Inc. (WSP), on behalf of Union Pacific Railroad Company (UPRR), is pleased to provide this monthly status update for November 2024 summarizing the weekly construction activities being conducted at the Englewood Intermodal Yard concrete cap area within the UPRR Houston Wood Preserving Works Facility (the Site). The construction activities are being conducted following the *Revised Interim Measures Work Plan – Englewood Intermodal Yard (EIY)* dated October 20, 2023, and prepared by WSP. The Texas Commission on Environmental Quality (TCEQ) requested in the Conditional Approval letter dated January 9, 2024, that weekly summaries be provided in the monthly status updates detailing the activities being implemented per the Revised Interim Measures Work Plan (IMWP). In addition, a summary of the weekly inspections conducted at the Englewood Intermodal Yard concrete cap area is provided in this monthly status update as requested by the TCEQ in a letter dated March 20, 2018. Below is a summary of the IMWP activities and inspections for November 2024.

Interim Measures Work Plan Activities

The TCEQ Conditional Approval letter dated January 9, 2024 for the Revised IMWP requested UPRR provide weekly summaries during the remediation activities detailing that adequate air monitoring and dust suppression, soil management, and stormwater protection activities are being implemented in accordance with the approved plans provided in the Revised IMWP. UPRR initiated the remediation activities on April 29, 2024. The following is a summary of the weekly IMWP activities conducted in November 2024:

Week Period November 1 through November 8, 2024:

- **Remediation Activities**
 - No remediation activities were conducted this week.
- **Dust Control and Air Monitoring**
 - No dust generating activities took place this week and no air monitoring was conducted.
- **Soil/Waste Management**
 - No roll-off containers were filled this week. Roll-off containers staged at the Site were kept covered.
 - No roll-off containers were transported off site this week.
- **Stormwater Management**
 - No additional stormwater was recovered from the Site this week. Approximately 390,000 gallons of stormwater are being stored onsite pending profiling and disposal.

Week Period November 11 through November 15, 2024:

- **Remediation Activities**
 - Sealant work as part of the focused excavations resumed on November 11th after delays due to rain events. Remediation contractor E3's subcontractor (Diamond Polish) conducted the following activities:
 - Cleaned joints at FE-1 & 3 (Photo 1).
 - Installed backer rod at FE-4 (Photo 2).
 - Applied sealant to joints at FE-1 & 3, FE-2, FE-4, FE-7, FE-8, and FE-11 (Photo 3 - 4).
 - Sealing of all focused excavations (FEs) was completed on November 11th. Photos of each finished FE are included in the Photolog (Photo 5 – 16).
 - E3's subcontractor (Ashton) conducted an inspection of the FE sealed joints on November 14th.
 - WSP conducted inspections of the FE sealed joints and concrete cap of the former Lagoon Area on November 14th and 15th.
- **Dust Control and Air Monitoring**
 - Atlas conducted real time air and dust monitoring at the Site on November 11th on behalf of UPRR in accordance with the Dust Control and Air Monitoring (DCAM) Plan provided in the Revised IMWP. No established thresholds were exceeded during the remediation activities, and samples were not collected (Appendix B).
- **Soil/Waste Management**
 - No roll-off containers were filled this week. Roll-off containers staged at the Site were kept covered.
 - E3 transported roll-off containers to the following facilities based on waste profiles:
 - Five roll-off containers containing Class 1 non-hazardous asphalt and concrete were transported to the HPP Baytown North Facility.
 - Five roll-off containers containing Class 2 non-hazardous asphalt and concrete were transported to the HPP Baytown North Facility.

- **Stormwater Management**

- No additional stormwater was recovered from the Site this week. Approximately 390,000 gallons of stormwater are being stored onsite pending profiling and disposal.

Week Period November 18 through November 22, 2024:

- **Remediation Activities**

- WSP completed inspections of the FE sealed joints and concrete cap in the former Lagoon area per the IMWP on November 18th.

- **Dust Control and Air Monitoring**

- Focused excavation work completed, and no dust generating activities took place. No air monitoring was conducted.

- **Soil/Waste Management**

- No roll-off containers were filled this week. The two remaining roll-off containers staged at the Site were kept covered while pending profiling, transportation, and disposal.
- No roll-off containers were transported off site this week.

- **Stormwater Management**

- No additional stormwater was recovered from the Site this week. Approximately 390,000 gallons of stormwater are being stored onsite pending profiling and disposal.

Week Period November 25 through November 29, 2024:

- **Remediation Activities**

- Focused excavation work completed, and no remediation activities were conducted.

- **Dust Control and Air Monitoring**

- Focused excavation work completed, and no dust generating activities took place. No air monitoring was conducted.

- **Soil/Waste Management**

- No roll-off containers were filled this week. The two remaining roll-off containers staged at the Site were kept covered while pending profiling, transportation, and disposal.

- **Stormwater Management**

- No additional stormwater was recovered from the Site this week. Approximately 390,000 gallons of stormwater are being stored onsite pending profiling and disposal.

Non-Aqueous Phase Liquid (NAPL) Collection System Inspections

A NAPL Collection System was installed in the Englewood Intermodal Yard in January 2019 to address the tar-like substance seeps within parking stalls B100 to B109 (for container trailers). The following is a summary of the observations from the weekly inspections of the NAPL Collection System and Englewood Intermodal Yard concrete pavement near the collection system for November 2024 (select photographs from the weekly inspections are provided in Attachment C):

- The NAPL Collection System Sump 1 (B099/B100 stalls), Sump 2 (B103/B104 stalls), and Sump 3 (B107/B108 stalls) have continued to be checked weekly for NAPL using an interface probe. A hoe has continued to be used to recover NAPL, if present, from the bottom of each of the sumps during the weekly inspections. No NAPL was detected or recovered from Sumps 1, 2 and 3 during the November 2024 weekly inspections. A notation on the presence of NAPL in each sump, tabulation of depth and thickness of NAPL, if detected, and a tabulation of total mass of NAPL recovered from each sump is provided on the enclosed Table 1. NAPL recovered from the sumps is placed in a drum for disposal. The drum is staged at the Container Storage Area (CSA). The inflow protector was monitored for NAPL accumulation, and no accumulation was observed through November 2024.
- Water levels in NAPL Collection System Sump 1, Sump 2, and Sump 3 were measured at the following levels below the top of the manholes:
 - November 6th – B099/B100 was measured at 2.5 inches, B103/B104 was measured at 32 inches, and B107/B108 was measured at 31 inches (Photo 17, 18 and 19).
 - November 13th – at 5, 32.5, and 32 inches (Photo 20, 21 and 22).
 - November 20th – at 3.5, 34, and 34 inches (Photo 23, 24 and 25).
 - November 27th – at 8, 34.5, and 34 inches (Photo 26, 27 and 28).
- During the November 2024 inspections, the water in Sump 1, Sump 2, and Sump 3 were observed to be clear in color. A sheen was observed at Sump 1 during the November 6th, 13th, 20th, and 27th inspections (Photos 17, 20, 23, and 26). No odors were reported during the November inspections.
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Areas Outside NAPL Collection System Inspections

For areas outside the NAPL Collection System, WSP made the following observations during the weekly inspections:

- A small amount of tar-like material was observed and recovered at the Track 802 location on November 13th and November 20th. The tar-like material was recovered during the weekly inspections (Photo 29 and 30).
- Tar-like material observed during the weekly inspection events was removed and recovered using a hand tool to scrape up the material. With the implementation of the Focused Excavations, there is only one location where tar material seeps were observed (Track 802). The seep activity during the month of November was similar compared to the October inspections. The collection volume of the tar material from the seep remained the same from 0.02 gallons over 5 inspections to 0.02 gallons over 4 inspections at the seep locations. The material recovered was placed in a drum staged at the CSA for disposal. The previously observed seeps at A010, A022, B042, B056, B057, B096, B100, B102, B105, and RD-14 have been addressed through the Focused Excavation activities. No seeps have developed around the newly completed Focused Excavations (Photo 5 – 16).
- There was no brown water staining observed during the month of November.

If you have any questions or need additional information, please feel free to call us at (512) 501-5547 or Mr. Kevin Peterburs of UPRR at (414) 267-4164.

Sincerely,

WSP USA Inc.



Manny Higa, GIT
Consultant, Environmental Scientist



Keshab Gyawali, P.E.
Senior Consultant, Civil Engineer



CC: Kevin Peterburs, UPRR – Milwaukee, WI
Karina Rocha, Waste Section Manager, TCEQ Region 12, Houston

Attachment Table 1 – NAPL Measurements – NAPL Collection System
Attachment A – Weekly Inspection Photolog
Attachment B – Air Monitoring Monthly Report – November 2024
Attachment C – Dust Control and Air Monitoring Plan Addendum

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
8/14/2019	2.5	28	29	Not measurable	
8/21/2019	0	27.5	26.5	Not measurable	
8/28/2019	44.5	47.9	45	Not measurable	Water from sumps pumped out
9/4/2019	19	42	41.5	Not measurable	
9/13/2019	0	39.5	38	Not measurable	
9/20/2019	0	3	2.5	Not measurable	
9/25/2019	0	42	42.5	Not measurable	Water from sumps pumped out
10/2/2019	2.5	42.5	42	Not measurable	Sheen visible in B107/B108 sump, less than 0.1 gal of DNAPL recovered
10/9/2019	3	42	41.5	Not measurable	Sheen visible in B107/B108 sump, less than 0.1 gal of DNAPL recovered
10/16/2019	0	39.5	39	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
10/24/2019	3	35	25	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
10/29/2019	0	24	23	Not measurable	Water from sumps pumped out
10/30/2019	0	40	39	Not measurable	Slight sheen visible in B107/B108 sump
11/6/2019	9	39	38.5	Not measurable	
11/13/2019	7	30	29	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
11/19/2019	4	26	25.5	Not measurable	
11/27/2019	0	25	23	Not measurable	
12/3/2019	2	25.5	25	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
12/11/2019	1.5	17	16.54	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
12/17/2019	5	19.5	17.5	Not measurable	
12/23/2019	10	21	20.5	Not measurable	
1/7/2020	9	13	12.5	Not measurable	
1/8/2020	9	13	12.5	Not measurable	Water from sumps pumped out
1/17/2020	0	32	31.5	Not measurable	
1/21/2020	2.5	26.5	26	Not measurable	
1/28/2020	0	0	0	Not measurable	
2/4/2020	2	11	10.5	Not measurable	
2/12/2020	0	0	0	Not measurable	
2/18/2020	1.5	11.5	10.25	Not measurable	Water from sumps pumped out on 2/20/2020
2/27/2020	2	42	36	Not measurable	
3/6/2020	1	36	36	Not measurable	
3/11/2020	2	36	35.5	Not measurable	
3/18/2020	0	35.5	35	Not measurable	
3/27/2020	0	29	28	Not measurable	
4/3/2020	1.5	29	28.5	Not measurable	
4/8/2020	0	23	22	Not measurable	
4/15/2020	0.5	23	22	Not measurable	
4/21/2020	0	21	21	Not measurable	
4/28/2020	0	23	22	Not measurable	
5/4/2020	-	-	-	Not Measured	Measurements were not taken; the inspector was unable to open the sumps
5/12/2020	0	20	19	Not measurable	
5/19/2020	0	15.75	14.25	Not measurable	Sump 1 pumped down (May 22nd)
5/27/2020	0	14	13	Not measurable	
6/1/2020	0	7	5	Not measurable	
6/10/2020	0	10	9	Not measurable	
6/17/2020	1	12	11	Not measurable	
6/25/2020	0	0	0	Not measurable	
6/30/2020	0	0	0	Not measured	
7/1/2020	48	46	47	Not measurable	Sumps 1, 2, & 3 pumped down
7/8/2020	34	24.5	24	Not measurable	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
7/15/2020	32	29.5	29	Not measurable	Sheen visible in B99/B100 sump & B107/B108 sump, less than 0.1 gal of DNAPL recovered B107/B108 sump
7/23/2020	0	23	22.5	Not measured	Less than 0.1 gal of DNAPL recovered from B107/B108 Sump
7/31/2020	0	11	10	Not measurable	
8/5/2020	0	7	5	Not measurable	
8/13/2020	1	11	10	Not measurable	
8/19/2020	0	7	6	Not measurable	
8/26/2020	0	10	9	Not measurable	
9/2/2020	43	37	38	Not measurable	Sumps 1, 2, & 3 pumped down (September 1); Sheen visible in B99/B100 sump & B107/B108 sump
9/9/2020	28	37	36	Not measurable	Sheen visible in B107/B108 sump
9/15/2020	1	35	33	Not measurable	
9/23/2020	0	0	0	Not measurable	

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Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
9/30/2020	1	10	9	Not measurable	
10/8/2020	4	12	11.5	Not measurable	
10/15/2020	0	11	10.5	Not measurable	Less than 0.1 gal of DNAPL recovered B107/B108 sump
10/21/2020	1	10.5	9.25	Not measurable	
10/28/2020	0	11	10	Not measurable	
11/4/2020	9	13	12	Not measurable	
11/11/2020	0.5	12	11	Not measurable	
11/18/2020	3.5	13	12	Not measurable	
11/24/2020	7	14	13.5	Not measurable	
11/30/2020	2	7	6	Not measurable	
12/10/2020	5	10.5	10	Not measurable	
12/18/2020	4	10	9	Not measurable	
12/23/2020	1	9	7.5	Not measurable	
12/31/2020	0	4	3.5	Not measurable	
1/6/2021	4	10.5	9	Not measurable	
1/15/2021	43	39	37.5	Not measurable	Sumps 1, 2, & 3 pumped down
1/22/2021	0	34	33	Not measurable	Sheen visible in B107/B108 sump
1/29/2021	2	31	30	Not measurable	Sheen visible in B107/B108 sump
2/4/2021	4	30	29.5	Not measurable	Sheen visible in B099/B100 sump
2/10/2021	0	27	25.5	Not measurable	
2/17/2021	0	0	0	Not measurable	
2/24/2021	2	10	9.5	Not measurable	
3/2/2021	0	0	0	Not measurable	
3/10/2021	0	10	9.75	Not measurable	
3/17/2021	0	2	1	Not measurable	
3/24/2021	0	3.5	2	Not measurable	
3/31/2021	0	6.5	7	Not measurable	
4/8/2021	0	7.5	7	Not measurable	
4/14/2021	0	6.5	6	Not measurable	Less than 0.1 gal of DNAPL recovered B107/B108 sump; Sheen visible in B103/104 and B107/B108 sumps
4/21/2021	0.5	9	8.5	Not measurable	
4/28/2021	0	8.5	8	Not measurable	
5/5/2021	0	7.5	7	Not measurable	
5/12/2021	0	8	7.5	Not measurable	
5/19/2021	0	0	0	Not measurable	
5/26/2021	0	2	0.5	Not measurable	
5/27/2021	41	32	26	Not measurable	Sumps 1,2, & 3 pumped down
6/2/2021	0	40	38	Not measurable	Sheen visible in B107/108 sump
6/9/2021	0	30	28.5	Not measurable	
6/16/2021	0	24	25	Not measurable	
6/23/2021	0	12	13	Not measurable	
6/30/2021	0	3	1	Not measurable	
7/7/2021	0	0	0	Not measurable	
7/14/2021	0	0	0	Not measurable	Sumps 1,2, & 3 pumped down (July 15)
7/21/2021	0	39	37	Not measurable	
7/29/2021	0	37	35.5	Not measurable	
8/4/2021	0	36	34	Not measurable	Sheen visible in B103/104 and B107/B108 sumps
8/11/2021	0	33	32	Not Measured	Depth to DNAPL measurements were not taken; the interface probe was not functioning properly
8/18/2021	0	25	23	Not measurable	
8/25/2021	0	20	22	Not measurable	
9/1/2021	0	20	17	Not measurable	
9/8/2021	3	14	11	Not measurable	
9/15/2021	0	3	4	Not measurable	Sumps 1,2, & 3 pumped down (September 17)
9/22/2021	31.5	46	46	Not measurable	Sheen visible in B107/B108 sump
9/29/2021	0	29	30.75	Not measurable	Sheen visible in B103/104 and B107/B108 sumps
10/7/2021	6	18	17.5	Not measurable	
10/13/2021	3.6	10.56	9.72	Not measurable	Sheen visible in B103/104 and B107/B108 sumps; brown discoloration and slight odor noted B099/B100 sump
10/20/2021	0	13.94	12.6	Not measurable	Sumps 1,2, & 3 pumped down (October 21)
10/27/2021	0	22	21	Not measurable	Sheen visible in B099/B100 sump
11/3/2021	10	20	21	Not measurable	
11/10/2021	12	16	15	Not measurable	
11/17/2021	8	16	15	Not measurable	
11/24/2021	7	14	13	Not measurable	
12/1/2021	7	15	14	Not measurable	
12/8/2021	6	12.5	12	Not measurable	
12/15/2021	7	15	15	Not measurable	
12/22/2021	-	-	-	Not Measured	Partial site inspection conducted 12/22/21; Sump measurements were not taken
12/29/2021	0	11.5	11	Not measurable	
1/5/2022	8.75	13.5	12.25	Not measurable	

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Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
1/12/2022	6	12	12	Not measurable	
1/19/2022	13.5	17	16	Not measurable	Sheen visible in B099/B100 sump
1/27/2022	3	9	9	Not measurable	
2/2/2022	-	-	-	Not Measured	Measurements were not taken; the inspector was unable to open the sumps
2/9/2022	9	15	15	Not measurable	
2/16/2022	8.5	17	16	Not measurable	
2/23/2022	5.5	14	13.5	Not measurable	
3/2/2022	5.5	15	14	Not measurable	
3/9/2022	4.5	7	6	Not measurable	
3/16/2022	48	36	45	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.5 gal of DNAPL recovered B107/B108 sump
3/23/2022	6	29	28	Not measurable	
3/30/2022	5.5	28	28	Not measurable	
4/6/2022	3.5	19	18	Not measurable	
4/13/2022	4.5	18	15	Not measurable	Sheen visible in B099/B100 sump
4/20/2022	5	18	18	Not measurable	Sheen visible in B099/B100 sump
4/27/2022	4.5	12	8.5	Not measurable	
5/4/2022	48	42	45	Not measurable	Sumps 1,2, & 3 pumped down during inspection; Sheen visible in B099/B100 sump
5/11/2022	16	44.5	44	Not measurable	Sheen visible in B099/B100, B103/104, and B107/B108 sumps
5/18/2022	6.5	45	45	Not measurable	
5/25/2022	0	25	24	Not measurable	
6/1/2022	5.5	24	24	Not measurable	
6/8/2022	5	22	22	Not measurable	Sheen visible in B099/B100 and B103/104 sumps
6/15/2022	5	25	24	Not measurable	
6/22/2022	4.5	24	21	Not measurable	
6/29/2022	6	21	21	Not measurable	
7/6/2022	5.5	13	13	Not measurable	
7/13/2022	5	15	14	Not measurable	Sheen visible in B099/B100 sump
7/20/2022	51.5	38	43.5	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.1 gal of DNAPL recovered B099/B100 sump
7/27/2022	4	42	40	Not measurable	
8/3/2022	5	39	39	Not measurable	
8/10/2022	5.5	38	38	Not measurable	Sheen visible in B107/B108 sump
8/17/2022	5.5	25.5	25	Not measurable	
8/24/2022	0	0.5	0	Not measurable	Inspector unable to open B099/B100 and B107/B108 sumps as there was standing water on top of the sumps due to ongoing rain event
8/31/2022	52	52	48	Not measurable	Sumps 1,2, & 3 pumped down during inspection; sheen visible in B103/B104 sump
9/7/2022	3	37	37	Not measurable	
9/14/2022	1	34	31	Not measurable	Sheen visible in B099/B100 sump
9/21/2022	2.2	31.5	27.5	Not measurable	Sheen visible in B107/B108 sump
9/28/2022	3	30	31	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/5/2022	8	33	33	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/12/2022	7	32	32	Not measurable	Sheen visible in B099/B100 and B107/B108 sumps
10/19/2022	48	48	48	Not measurable	Sumps 1,2, & 3 pumped down during inspection; less than 0.1 gal of DNAPL recovered from B107/108 sump; small amount of DNAPL visible but not recoverable in B099/B100 sump; sheen visible in B099/B100 and B103/B104 sumps on recharge water after pumpdown
10/26/2022	6	46	45	Not measurable	Sheen visible in B107/B108 sump
11/2/2022	4	19	19	Not measurable	
11/9/2022	6	14	13	Not measurable	
11/16/2022	8	14	12	Not measurable	
11/22/2022	0	0	0	Not measurable	
11/30/2022	3	10	9	Not measurable	Very slight sheen visible in Sumps 1, 2, and 3; less than 0.2 gal of DNAPL recovered from B107/108 sump
12/7/2022	4	13.5	13	Not measurable	
12/14/2022	0	0	0	Not measurable	Replaced dipper tool with hoe for NAPL recovery from sumps. Less than 0.4 gal of DNAPL recovered from B099/B100 sump; approximately 0.1 gal of DNAPL recovered from B107/B108 sump
12/21/2022	4	8	7	Not measurable	
12/28/2022	16	14	14	Not measurable	
1/4/2023	3.5	7.5	6	Not measurable	
1/11/2023	12	12	3	Not measurable	
1/18/2023	3	13	13	Not measurable	
1/25/2023	3	6	5	Not measurable	

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Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
2/1/2023	<1	1	<1	Not measurable	
2/8/2023	5	13	12	Not measurable	
2/15/2023	<1	2	2.5	Not measurable	Sumps B099/B100, B103/B104, and B107/B108 pumped down during inspection
2/22/2023	32	42	43	Not measurable	Sheen visible in B099/B100, B103/B104, and B107/B108 sumps; water in B099/B100 noted as brown color with high turbidity
3/1/2023	9	41	40	Not measurable	Sheen visible in B099/B100, B103/B104, and B107/B108 sumps, water color in sumps noted as brown
3/8/2023	5	42	41	Not measurable	B099/B100 & B103/B104 light brown color
3/15/2023	4	42	41	Not measurable	B099/B100 and B013/B104 brown color; B107/B108 very light brown color
3/22/2023	8	26.5	25.5	Not measurable	B099/B100 light brown color
3/29/2023	3	24	25	Not measurable	B099/B100 light brown color
4/5/2023	2.5	25	25	Not measurable	B099/B100 light brown color
4/12/2023	4	12	14	Not measurable	All three sumps pumped down during inspection, B099/B100 brown color
4/19/2023	5	42	42	Not measurable	Sheen visible in B107/B108 sump
4/26/2023	4	31.5	31.5	Not measurable	Sheen visible in B107/B108 sump
5/3/2023	3	18	17.5	Not measurable	
5/10/2023	0	1.5	0	Not measurable	Sheen visible in B107/B108 sump
5/17/2023	0	2	0	Not measurable	Sheen visible in B107/B108 sump
5/24/2023	2	14	13	Not measurable	Pumpdown and boom swap.
5/31/2023	28	50	49	Not measurable	B099/B100 water color brown. B103/B104 and B107/B108 water color light brown.
6/7/2023	3	38	37	Not measurable	Sheen visible in all Sumps. B099/B0100 water color brown and, light brown on both B103/B104 and B107/B108.
6/14/2023	4	38	37	Not measurable	Sheen Visible in B099/B100 & B107/B108. water color brown on B099/B100 & light brown in all other sumps.
6/21/2023	3	36	37	Not measurable	Sheen Visible in B107/B108. water color brown on B099/B100 & light brown in all other sumps.
6/28/2023	3	31	31	Not measurable	Sheen Visible in B099/B100 & B107/B108. water color dark brown on B099/B100 & B107/B108, light brown in B103/B104.
7/12/2023	3	20	19	Not measurable	Sheen Visible in B099/B100 and B107/B108. Water color brown on B099/B100, light brown in B103/B104.
7/19/2023	3	19	19	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100 and clear on B103/B104 and B107/B108.
7/26/2023	3	21	20	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100, light brown on B103/B104, and clear on B107/B108.
8/2/2023	0	16.5	15.5	Not measurable	Sheen Visible on B107/B108. Water color dark brown on B099/B100, light brown on B103/B104, and clear on B107/B108. Pumpdown conducted 8/4/2023.
8/9/2023	42	47	47	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100, light brown on B103/B104, and clear on B107/B108.
8/16/2023	38.5	47	47	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100 and light brown on B103/B104 and B107/B108.
8/23/2023	33	46	46	Not measurable	Sheen visible in all Sumps. B099/B100 water color dark brown and, light brown on both B103/B104 and B107/B108.
8/30/2023	33	46	44	Not measurable	Sheen visible in all Sumps. B099/B100 water color dark brown and, light brown on both B103/B104 and B107/B108.
9/6/2023	1	38	38	Not measurable	Sheen visible in all Sumps. B099/B100 water color light brown, and clear on both B103/B104 and B107/B108.
9/13/2023	0	33	33	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100 and clear on B103/B104 and B107/B108. Pumpdown conducted 9/15/2023.
9/20/2023	14	41	40	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color brown on B099/B100 and light brown on B103/B104 and B107/B108.
9/27/2023	0.5	33	34	Not measurable	Sheen Visible on B099/B100 and B107/B108. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
10/4/2023	0	0	0	Not measurable	No sheen visible in all sumps. Water color brown on B099/B100 and light brown on B103/B104 and B107/B108. Heavy rains all week filled up sumps.
10/11/2023	0	0	0	Not measurable	Sheen visible on B103/B104. B099/B100 water color light brown, clear on B103/B104 and B107/B108. Heavy rains in the week filled up sumps. Pumpdown conducted 10/13/2023.
10/18/2023	46	48	47	Not measurable	Sheen visible on B099/B100 and B107/B108. Water color brown on B099/B100. Water color clear on B103/B104. Water color light brown on B107/B108.
10/25/2023	39	44	43	Not measurable	Sheen visible on B099/B100 and B107/B108. Water color dark brown on B099/B100 and light brown on B103/B104 and B107/B108.
11/1/2023	6.5	33	33	Not measurable	Sheen visible on B099/B100 and B107/B108. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
11/8/2023	12	34	33	Not measurable	Sheen visible on B099/B100. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
11/15/2023	2	6	5.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
11/22/2023	7	13	12	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
11/29/2023	5.5	10	9.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
12/6/2023	8	14	14	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
12/13/2023	5	10	9.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
12/20/2023	5	10	9	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
12/27/2023	6	13	11	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
1/3/2024	0	0	0	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on 103/B104 and B107/B108.
1/10/2024	5	10	9.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
1/17/2024	12	15.5	15	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
1/24/2024	0	0	0	Not measurable	No sheen observed in any of the sumps. Water color clear in all sumps.
1/31/2024	2	9.5	9	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
2/7/2024	2	18	16	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
2/14/2024	6	18	18	Not measurable	No sheen observed in any of the sumps. Water color clear on B099/B100, B103/B104 and B107/B108.
2/21/2024	6	14	13	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
2/28/2024	4	14	15	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
3/6/2024	4	15	15	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
3/13/2024	0	11	11	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
3/20/2024	0	7.5	7.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
3/27/2024	0	7	6	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108. Some DNAPL (1.5 inches) was recovered from the bottom of Sump 1.
4/3/2024	0	10	10	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108. Some DNAPL (3 cubic inches) was recovered from the bottom of Sump 1.
4/10/2024	0	0	0	Not measurable	No sheen observed in any of the sumps. Water color brown on B099/B100 and clear on B103/B104 and B107/B108.
4/17/2024	0	10	9.5	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
4/24/2024	2.5	12	11	Not measurable	Sheen visible on B099/B100. Water color brown on B099/B100 and clear on B103/B104 and B107/B108. Pumpdown conducted 4/26/2024.
5/1/2024	9	20	21	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
5/8/2024	1	23	22	Not measurable	Sheen visible on B099/B100. Water color brown on B099/B100 and light brown on B103/B104 and clear on B107/B108.
5/15/2024	0	20	21	Not measurable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
5/22/2024 ¹	--	--	--	--	--
5/29/2024	0	19.5	19	Not measurable	No sheen observed in any of the sumps. Water color brown on B099/B100 and clear on B103/B104 and B107/B108.
6/5/2024	Not measurable	Not measurable	13	Not measurable	Sumps B099/B100 and B103/B104 could not be opened due to ongoing excavation. No sheen observed in any of the sumps. Water color was clear to cloudy by B107/B108.
6/12/2024	0	13	13	Not measurable	No sheen observed in any of the sumps. Water color was brown to cloudy by B099/B100, clear to cloudy by B103/B104, and clear by B107/B108.
6/19/2024	0	13	13	Not measurable	Sheen observed at B099/B100 and B107/B108. Water color was dark brown by B099/B100 and clear by B103/B104 and B107/B108.
6/26/2024	2.5	10.5	10	Not measurable	Sheen observed at B099/B100. Water color was brown to cloudy by B099/B100 and clear by B103/B104 and B107/B108.
7/3/2024	23	43	42	Not measurable	Dark brown water color and sheen observed at B099/B100. Brown water color and no sheen observed at B103/B104. Brown water color and sheen observed at B107/B108.
7/10/2024	13	35	34	Not measurable	Light brown water color and sheen observed at B099/B100. Brown water color and no sheen observed at B103/B104 and B107/B108.
7/17/2024	9	39	38	Not measurable	Light brown water color observed at all three sump systems. Sheen observed at B099/B100, 3 cubic in NAPL recovered from sump. No sheen observed at B103/B104 and B107/B108.
7/24/2024	0	36	36	Not measurable	Light brown water color observed at all three sump systems. Sheen observed at B103/B104. No sheen observed at B099/B100 and B107/B108.
7/31/2024	45	45	45	Not measurable	Brown water color and sheen observed at B099/B100. Light brown water color and no sheen observed at B103/B104 and B107/B108.
8/7/2024	23	32	32	Not measurable	Brown water color and no sheen observed at B099/B100. Brown/cloudy water color and no sheen observed at B103/B104 and B107/B108.

TABLE 1
NAPL Measurements - NAPL Collection System - Englewood Intermodal Yard
UPRR Houston, tx - Wood Preserving Works

Measured Date	Sump 1 (B099/B100) Freeboard (in)	Sump 2 (B103/B104) Freeboard (in)	Sump 3 (B107/B108) Freeboard (in)	Depth to DNAPL (in)	Comments
8/14/2024	24	42.5	41.5	Not measurable	Brown water color and sheen observed at B099/B100. Gray water color and no sheen observed at B103/104. Light brown and no sheen observed at B107/108.
8/21/2024	22.5	42.5	41.5	Not measurable	Brown water color and no sheen observed at B099/B100, B103/104 and at B107/108.
8/28/2024	20	42	41.5	Not measurable	Tan water color and sheen observed at B099/B100. Brown water color and no sheen observed at B103/104. Light brown and no sheen observed at B107/108.
9/4/2024	8	41	40	Not measurable	Tan water color and sheen observed at B099/B100. Tan water color and no sheen observed at B103/B104 and B107/B108.
9/12/2024	5.5	39	38.5	Not measurable	Clear water and sheen observed at B099/B100. Brown water color and no sheen observed at B103/B104 and Tan water color and no sheen observed at B107/B108.
9/18/2024	7	38.5	38	Not measurable	Clear water with sheen observed at B099/B100. Brown water color and no sheen observed at B103/B104. Light brown and no sheen observed at B107/B108.
9/26/2024	9.5	40	39	Not measurable	Clear water color and sheen observed at B099/B100. Grey and turbid water with no sheen observed at B103/B104 and brownish water with no sheen observed at B107/B108.
10/2/2024	11.5	36.5	36	Not measurable	Clear water color and no sheen observed at B099/B100. Tan water color with no sheen observed at B103/B104. Brown water with no sheen observed at B107/B108.
10/9/2024	10	37	36	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
10/16/2024	12	38	36	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
10/24/2024	14	41	40	Not measurable	Light brown water color and sheen observed at B099/B100. Light brown water color with no sheen observed at B103/B104. Brown water with no sheen observed at B107/B108.
10/30/2024	4	37.5	37	Not measurable	Turbid tan water color with no sheen observed at B099/B100. Turbid tan water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
11/6/2024	2.5	32	31	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
11/13/2024	5	32.5	32	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
11/20/2024	3.5	34	34	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.
11/27/2024	8	34.5	34	Not measurable	Clear water color and sheen observed at B099/B100. Clear water color with no sheen observed at B103/B104. Clear water with no sheen observed at B107/B108.




Note:
Freeboard in sumps is measured as depth to water from top rim of sump, measured in inches




1. Freeboard not measured on 5/22/2024 due to the ongoing excavations as part of the Interim Measures Work Plan Construction Activities









ATTACHMENT A

Weekly Inspection Photolog

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 1	Inspection Date: 11/11/2024		
Description: Diamond Polish cleaned joints at FE-1&3. Lat: 29.784346 Long: -95.32051			
Photo No. 2	Inspection Date: 11/11/2024		
Description: Diamond Polish installing backing rod at FE-4. Lat: 29.784764 Long: -95.319628			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
Project No. 31406585.016			
Photo No. 3	Inspection Date: 11/11/2024		
Description: Diamond Polish applying sealant to joints at FE-1&3. Lat: 29.784116 Long: -95.320731			
Photo No. 4	Inspection Date: 11/11/2024		
Description: Diamond Polish applying sealant to joints at FE-7. Lat: 29.784227 Long: -95.320627			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 5	Inspection Date: 11/20/2024	<div> <div> NE 60 E 90 SE 120 150 </div> <div> 96°E (T) • 29.784196, -95.321006 ±18m ▲ -12m </div>  <div> FE 1 & 3 HWPW 20 Nov 2024, 10:35:46 AM </div> </div>	
Description: Finished FE-1&3 after sealing. Lat: 29.784196 Long: -95.321006			
Photo No. 6	Inspection Date: 11/20/2024	<div> <div> NE 60 E 90 SE 120 150 </div> <div> 97°E (T) • 29.784074, -95.320809 ±18m ▲ -12m </div>  <div> FE 2 HWPW 20 Nov 2024, 10:36:11 AM </div> </div>	
Description: Finished FE-2 after sealing. Lat: 29.784074 Long: -95.320809			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 7	Inspection Date: 11/20/2024	<div> <div> E 90 SE 120 150 S 180 </div> <div> 142°SE (T) • 29.784707, -95.31959 ±62m ▲ -12m </div>  <div> FE 4 HWPW 20 Nov 2024, 10:33:55 AM </div> </div>	
Description: Finished FE-4 after sealing. Lat: 29.784707 Long: -95.319590			
Photo No. 8	Inspection Date: 11/20/2024	<div> <div> SE 120 150 S 180 210 </div> <div> 165°SE (T) • 29.785462, -95.318527 ±13m ▲ -12m </div>  <div> FE5 HWPW 20 Nov 2024, 10:32:13 AM </div> </div>	
Description: Finished FE-5 after sealing. Lat: 29.785462 Long: -95.318527			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 9	Inspection Date: 11/20/2024	<div> <div> <div>E</div> <div>90</div> <div>120</div> <div>SE</div> <div>150</div> <div>S</div> <div>180</div> </div> <div> <div>⊙ 145°SE (T) • 29.785382, -95.318299 ±63m ▲ -12m</div> </div> </div>  <div> <div>FE6</div> <div> <div>HWPW</div> <div>20 Nov 2024, 10:29:26 AM</div> </div> </div>	
Photo No. 10	Inspection Date: 11/20/2024	<div> <div> <div>E</div> <div>90</div> <div>120</div> <div>SE</div> <div>150</div> </div> <div> <div>⊙ 120°E (T) • 29.784189, -95.320641 ±11m ▲ -12m</div> </div> </div>  <div> <div>FE7</div> <div> <div>HWPW</div> <div>20 Nov 2024, 10:36:30 AM</div> </div> </div>	
Description: Finished FE-6 after sealing. Lat: 29.785382 Long: -95.318299		Description: Finished FE-7 after sealing. Lat: 29.784189 Long: -95.320641	

Project No.

31406585.016

NE 60 90 120 SE 150

11/20/2024

HWPW

20 Nov 2024, 10:32:55 AM

11/20/2024

☉ 114°E (T) • 29.78523, -95.318333 ±5m ▲ -12m

FE9

HWPW
20 Nov 2024, 10:31:04 AM

HWPW

20 Nov 2024, 10:31:04 AM

Project No.

31406585.016

Inspection Date:
11/20/2024

Long: -95.317675

☉ 125°SE (T) • 29.784886, -95.317675 ±4m ▲ -12m







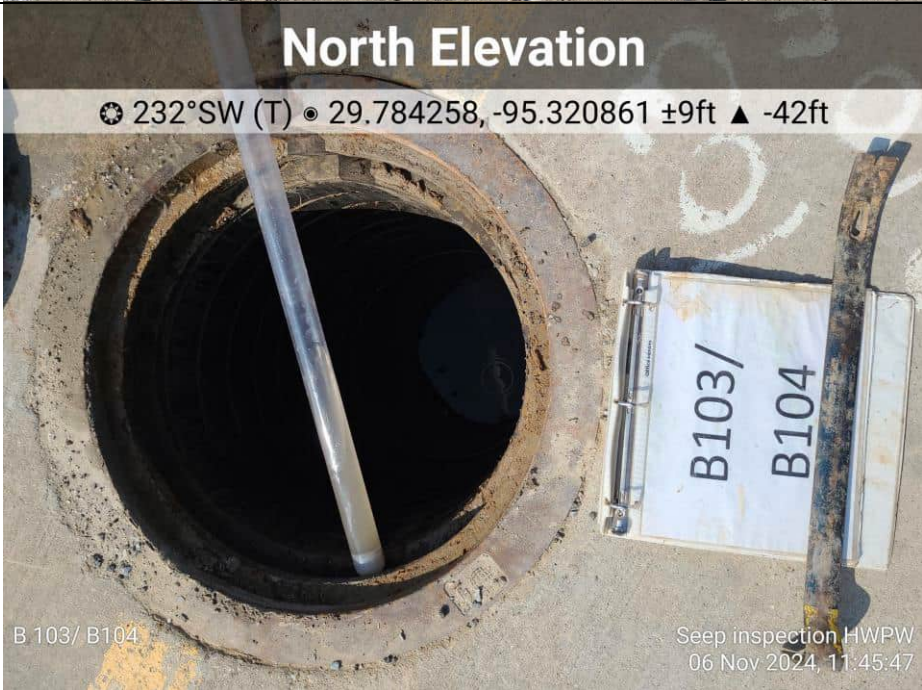
Inspection Date:
11/20/2024


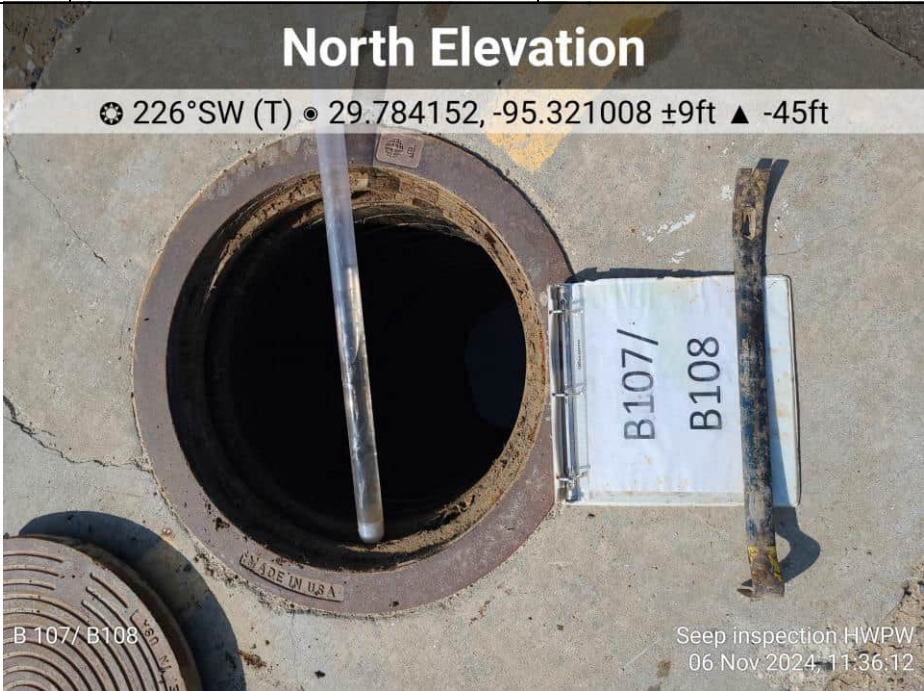

Long: -95.319518




📍 104°E (T) • 29.78429, -95.319518 ±4m ▲ -12m








		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 15	Inspection Date: 11/20/2024	<div> <div> NE 60 90 120 SE 150 </div> <div> • • • • • </div> </div> <div> 95°E (T) • 29.785475, -95.31868 ±4m ▲ -12m </div>  <div> <div>FE12</div> <div> HWPW 20 Nov 2024, 10:30:09 AM </div> </div>	
Description: Finished FE-12 after sealing.			
Lat: 29.785475 Long: -95.318680			
Photo No. 16	Inspection Date: 11/20/2024	<div> <div> SE 120 150 S 180 210 </div> <div> • • • • • </div> </div> <div> 165°SE (T) • 29.784969, -95.321241 ±2m ▲ -12m </div>  <div> <div>FE13</div> <div> HWPW 20 Nov 2024, 10:26:58 AM </div> </div>	
Description: Finished FE-13 after sealing.			
Lat: 29.784969 Long: -95.321241			




		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 17	Inspection Date: 11/6/2024	<div> <div> West Elevation </div> <div> 215°SW (T) • 29.7843, -95.320751 ±9ft ▲ -42ft </div>  <div> B 99 / B100 </div> <div> Seep inspection HWPW 06 Nov 2024, 11:54:07 </div> </div>	
Description: Sump 1 (B99/B100), 2.5 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface. Lat: 29.784300 Long: -95.320751			
Photo No. 18	Inspection Date: 11/6/2024	<div> <div> North Elevation </div> <div> 232°SW (T) • 29.784258, -95.320861 ±9ft ▲ -42ft </div>  <div> B 103 / B104 </div> <div> Seep inspection HWPW 06 Nov 2024, 11:45:47 </div> </div>	
Description: Sump 2 (B103/B104), 32.0 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784258 Long: -95.320861			




		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 19	Inspection Date: 11/6/2024		
Description: Sump 3 (B107/B108), 31.0 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784152 Long: -95.321008			
Photo No. 20	Inspection Date: 11/13/2024		
Description: Sump 1 (B99/B100), 5.0 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface. Lat: 29.784268 Long: -95.320783			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 21	Inspection Date: 11/13/2024		
Description: Sump 2 (B103/B104), 32.5 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784224 Long: -95.320945			
Photo No. 22	Inspection Date: 11/13/2024		
Description: Sump 3 (B107/B108), 32.0 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784209 Long: -95.321002			

wsp		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 23	Inspection Date: 11/20/2024		
Description: Sump 1 (B99/B100), 3.5 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface. Lat: 29.784294 Long: -95.320788			
Photo No. 24	Inspection Date: 11/20/2024		
Description: Sump 2 (B103/B104), 34 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784216 Long: -95.320905			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
Project No. 31406585.016			
Photo No. 25	Inspection Date: 11/20/2024		
Description: Sump 3 (B107/B108), 34 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784218 Long: -95.321011			
Photo No. 26	Inspection Date: 11/27/2024		
Description: Sump 1 (B99/B100), 8 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface. Lat: 29.784289 Long: -95.320762			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 27	Inspection Date: 11/27/2024		
Description: Sump 2 (B103/B104), 34.5 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784237 Long: -95.320882			
Photo No. 28	Inspection Date: 11/27/2024		
Description: Sump 3 (B107/B108), 34 inches of freeboard in sump. Color is clear, and no sheen or odor observed. Lat: 29.784232 Long: -95.320955			

		PHOTOGRAPHIC LOG	
Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	
		Project No. 31406585.016	
Photo No. 29	Inspection Date: 11/13/2024		
Description: NAPL seep at Track 802. ~3 in ³ of tar removed. Lat: 29.784952 Long: -95.321215			
Photo No. 30	Inspection Date: 11/20/2024		
Description: NAPL seep at Track 802. ~2 in ³ of tar removed. Lat: 29.784954 Long: -95.321248			



ATTACHMENT B

Air Monitoring Monthly Report – November 2024



**Union Pacific Railroad
Houston Wood Preserving Works Site
Focused Excavation Project**

**Air Monitoring Monthly Report
November 2024**

Houston, Texas

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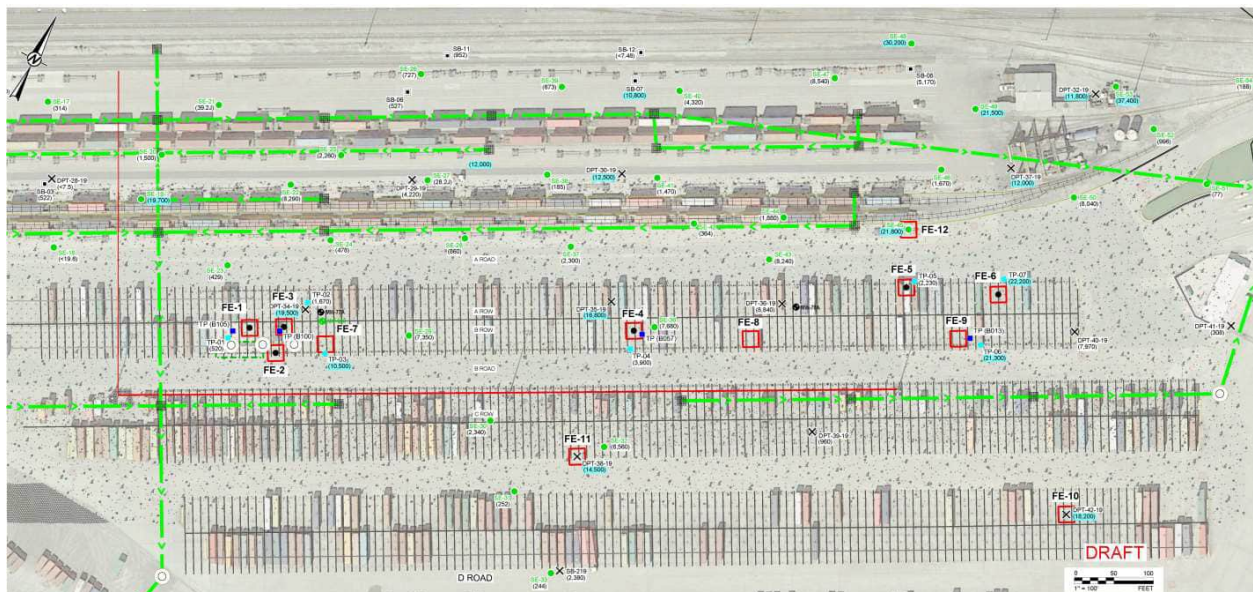
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SECTION 1 INTRODUCTION

1.1 Background Information

Atlas Technical Consultants, LLC (Atlas) is assisting Union Pacific Railroad (UPRR) with industrial hygiene consulting services in the Union Pacific Railroad (UPRR) Houston Wood Preserving Works Railyard (Site) portion of the Englewood Intermodal Yard (Site). Daily air monitoring is being performed during focused excavation work associated with the remediation of twelve (12) seep areas at the Site. The focused excavations are taking place on the east end of the Site, in the concrete-covered parking area just south of the southernmost rail track in the railyard. Figure 1 shows the approximate locations of the initial focused excavations. The exact size and location of the focus excavation locations may change as the project develops.

Figure 1-1 General Site Location Map



Atlas representatives are conducting area air monitoring for particulate matter 2.5 micrometers or less in diameter ($PM_{2.5}$), particulate matter 10 micrometers or less in diameter (PM_{10}), lead, arsenic and polynuclear aromatic hydrocarbons (PAHs) during excavation activities. Air monitoring stations are deployed each day of excavation activities and air monitoring is conducted until activities are complete each day. Atlas Industrial Hygienists continuously monitor particulate concentrations and equipment status throughout the sample period each day.

The Atlas team consisted of three (3) Industrial Hygienists (IH), Michaela Simpson, Armando Medina and Jaimen Shepherd, two (2) Senior Project Managers, Cynthia M. Garner and Sarah Vanderwielen. The onsite team worked under the direct supervision of Catherine G. McLain, an Atlas American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH). All air monitoring work is being conducted under the guidance of the TCEQ approved Dust Control and Air Monitoring Plan dated October 20, 2023.

1.2 Sampling Methodologies

Atlas employees utilize the following methodologies for air monitoring:

The area air sampling methodology is summarized in Table 1. The sampling analytical methods are those published by the National Institute for Occupational Safety and Health (NIOSH) and by the United States Environmental Protection Agency (USEPA). Analytical methods included Inductively Coupled Plasma (ICP) and Gas Chromatography-Mass Spectrometry (GC-MS). Collection media included unweighted (UW) 37 millimeter (mm) Mixed Cellulose Ester (MCE) filters and Polyurethane Foam (PUF) and XAD Resin packed Tubes. The collected samples were sealed and uniquely labeled at the end of the monitoring period and prepared for delivery to a certified analytical laboratory.

The samples were analyzed by CON-TEST, a Pace Analytical Laboratory (Pace) in East Longmeadow, Massachusetts. Pace is accredited by the American Industrial Hygiene Association (AIHA) Laboratory Accreditation Programs, LLC (AIHA LAP, LLC) Industrial Hygiene Laboratory Accreditation Program (IHLAP).

Table 1 – Analytical Methods Union Pacific Houston Wood Preserving Works			
Houston, Texas			
Analytes	Sampling/Analytical Method	Collection Media	Flow Rate
Lead	NIOSH Method 7303; ICP	UW 37mm MCE Filter	1-4 l/min
Arsenic	NIOSH Method 7303; ICP	UW 37mm MCE Filter	2 l/min
Polynuclear Aromatic Hydrocarbons (PAH)	EPA TO-13A; GC-MS	PUF & XAD Resin Packed Tubes	1-5 l/min
Acronyms: NA – Not Applicable			

Overall averages presented are for the sample period specified by the start and stop time of each monitor. Unless otherwise stated, the sample periods are inclusive of all excavation activities.

The locations of the air monitors are consistent with the TCEQ approved Dust Control and Air Monitoring Plan dated October 20, 2023. Minor variations to monitor placement may occur as a result of excavation activities and/or environmental factors.

1.3 Equipment

Atlas is using the following equipment for onsite air monitoring:

Weather Station

A Lufft WS500 Weather Station is co-located with the Unit 01 air sampler. The weather station measured wind direction, wind speed, temperature, relative humidity and precipitation. The weather station logs data at one (1) minute intervals.

Direct Read Area Monitoring

Direct read air monitoring for PM_{2.5} and PM₁₀ is being conducted using a DustTrak DRX Desktop Aerosol Monitor, Model 8533 (DustTrak). The DustTrak is a real-time particulate monitor. Seven (7) air monitoring stations are setup for continuous PM_{2.5} and PM₁₀ air monitoring. PM_{2.5} and PM₁₀ concentrations are logged at one (1) minute intervals and reported as a 30-minute average. The air monitoring stations are mounted on tripods on at an approximate height of 5-6 feet. The air samplers are set in the same location daily.

SECTION 1

Air monitoring stations are connected to the internet using Pine Environmental Global Telemetry Solutions (GTS). GTS is an advanced cellular and web-based system that provides access to real-time data.

The real-time data collection software is configured to generate text alerts of 30-minute dust concentration averages that exceed the specified particulate control levels. Notifications are sent directly to the onsite industrial hygienists. The onsite industrial hygienists respond to each alarm to make observations and determine the source of the elevated particulate readings. If the source of the elevated particulates was determined to be related to excavation activities, the industrial hygienists communicates findings to the designated UPRR representative along with any dust mitigation recommendations.

Air Samples

Area air samples are collected using a SKC Airchek 52 Sampling Pump, Tygon tubing and sampling media specified by sampling methods. The sampling pumps were positioned on tripods at a height representative of the breathing zone. Air sampling pumps were pre and post calibrated to the sampling method recommended flowrate using a TSI Primary Calibrator, Model 4146.

Atlas utilized the equipment described in Table 2 to record weather data and conduct direct read and area air monitoring.





Table 2 – Equipment Union Pacific Houston Wood Preserving Works		
Houston, Texas		
Nomenclature	Function	Photo
Lufft WS500	Weather Station	
TSI DustTrak™ DRX Desktop Aerosol Monitor, Model 8533	Direct Reading Air Monitoring – PM _{2.5} & PM ₁₀	
SKC Airchek 52 Sampling Pump	Area Air Monitoring – Lead, Arsenic, PAH	

Table 2 – Equipment Union Pacific Houston Wood Preserving Works		
Houston, Texas		
Nomenclature	Function	Photo
TSI Primary Calibrator Model 4146	Air Sampling Pump Primary Calibrator	

SECTION 2 ONSITE METEOROLOGY AND AIR MONITORING RESULTS

2.1 National Ambient Air Quality Standards

The USEPA's 2012 National Ambient Air Quality Standards (NAAQS) for PM_{2.5} and PM₁₀ were used to develop the Action Levels for this project. The 24-hour NAAQS are presented below:

- PM_{2.5} (24-hour average): 35 µg/m³
- PM₁₀ (24-hour average): 150 µg/m³

Action levels have been established for this project to ensure that excavation activities conducted at the Site do not contribute significantly to airborne particulate concentrations off property. Background particulate concentrations vary throughout the Houston area and can exceed the NAAQS for PM_{2.5}. Control levels were chosen to minimize the contribution of fugitive dust emissions from the excavation activities to the overall PM_{2.5} and PM₁₀ concentrations. The established control levels are presented below:

Table 3 – Established Control Levels Union Pacific Houston Wood Preserving Works, Houston, Texas		
	PM _{2.5} 30-minute Average	PM ₁₀ 30-minute Average
Notice Level	>30 µg/m ³	>75 µg/m ³
	The Notice Level is intended as an early warning of potential elevations in airborne dust levels. When the notice level is exceeded the onsite IH 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 IH.	
Action Level	>55 µg/m ³	>150 µg/m ³
	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 IH 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 IH.	
Stop-Work Level	>85 µg/m ³	>300 µg/m ³
	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 IH 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.	
Acronyms: IH – Industrial Hygienist		

Rolling 30 minute averages of PM_{2.5} and PM₁₀ are calculated by each monitor on each sampling day during the excavation activities. Both PM_{2.5} and PM₁₀ are measured by the monitor every two

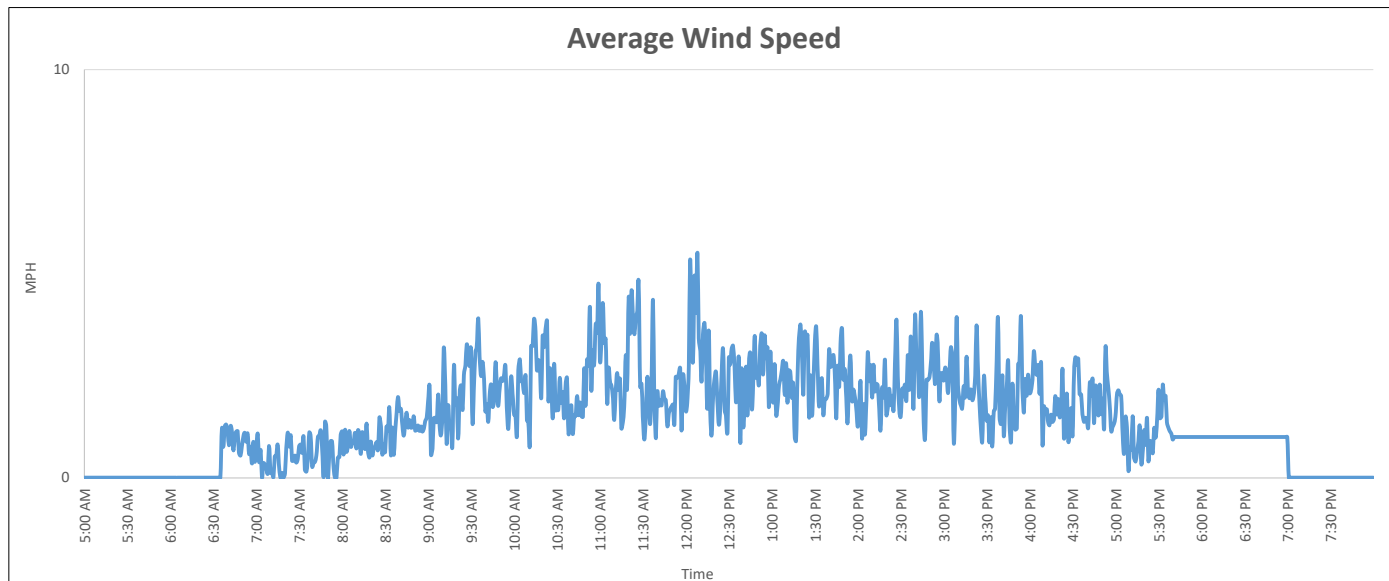
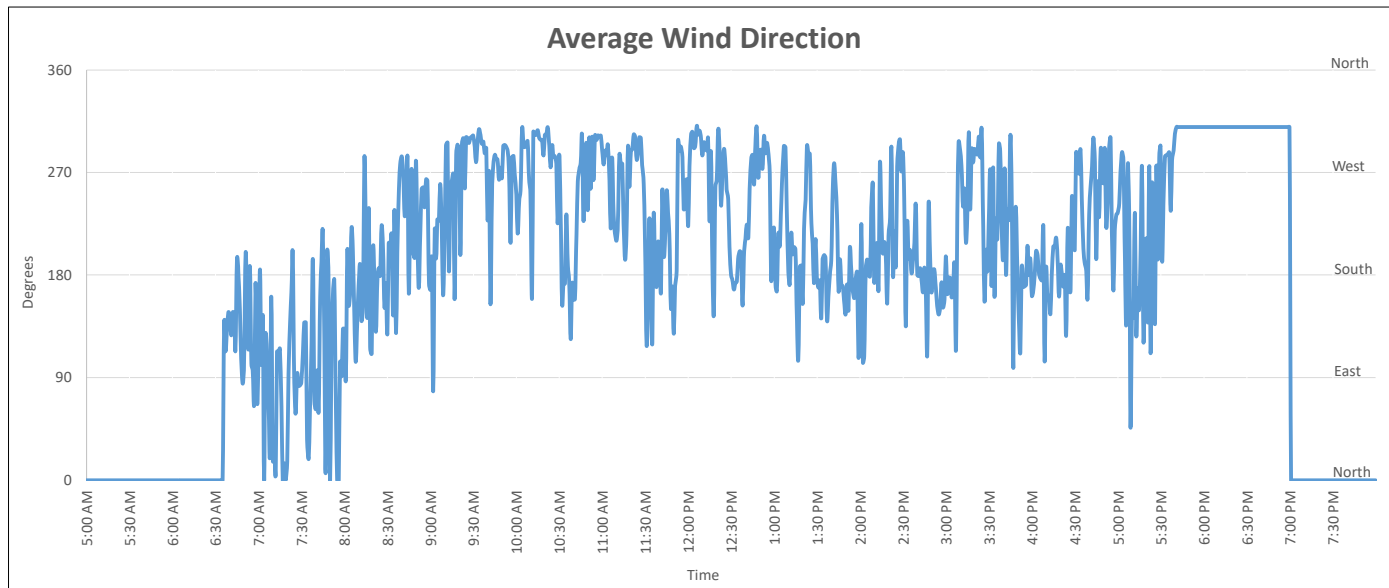
SECTION 3

(2) minutes during the sampling period. The concentration shown on the graphs below represent the average PM_{2.5} and PM₁₀ concentration at the end of the 30 minute period.

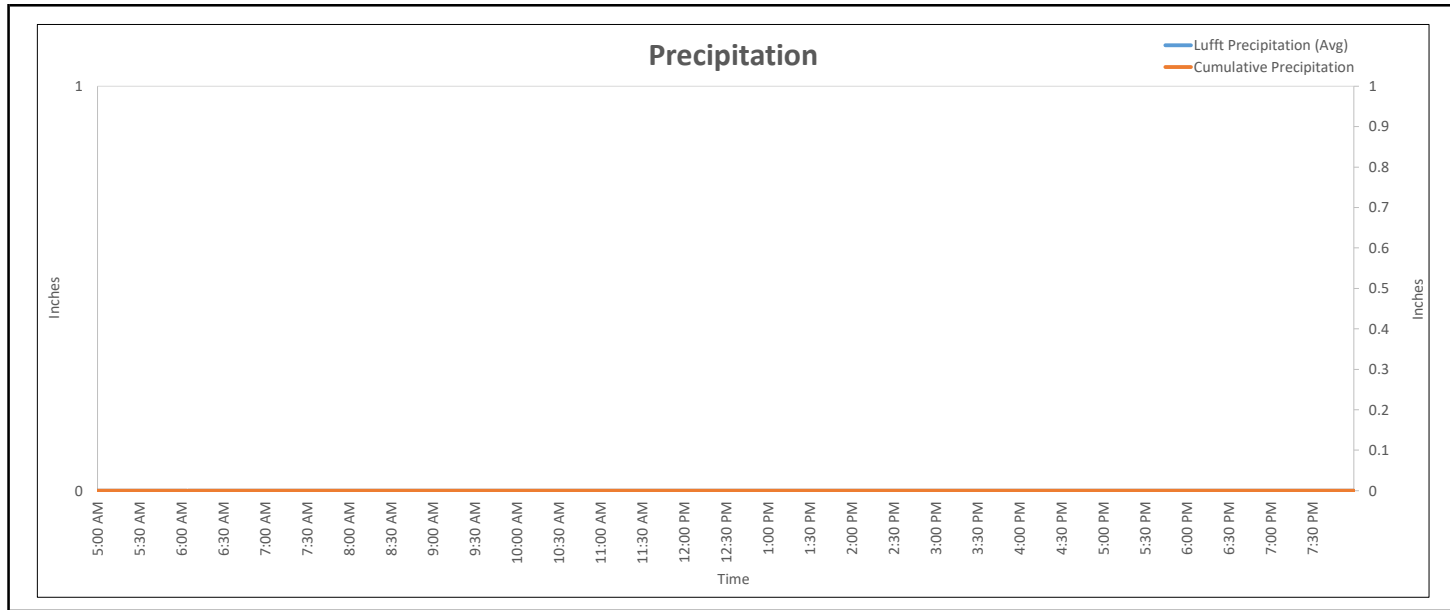
The maximum, minimum and average monitored value per day for each air monitor is presented in Table 5.

There was only one sampling day in November. Monitoring levels did not reach the Stop Work threshold during the month of November. Data from Monitor 801245 was available during the onsite work, however, the data did not save properly and is unavailable for the day. Onsite personnel observed the monitor values while the work was being performed onsite and the monitor did not exceed any established threshold. Monitor values were similar to other monitor values at the site.

Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, November 11, 2024

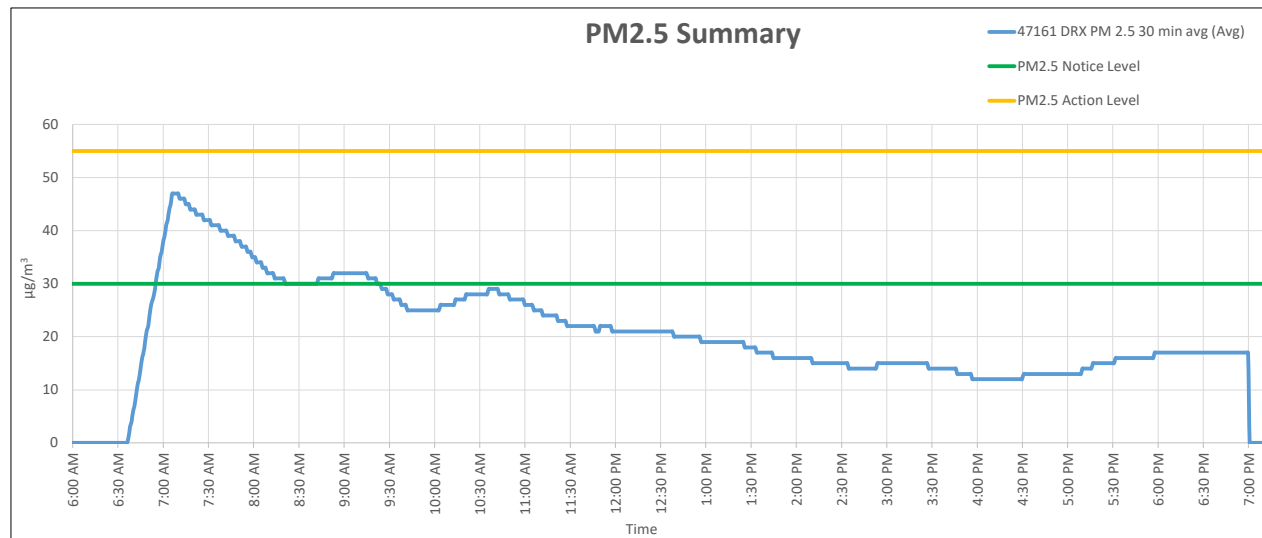
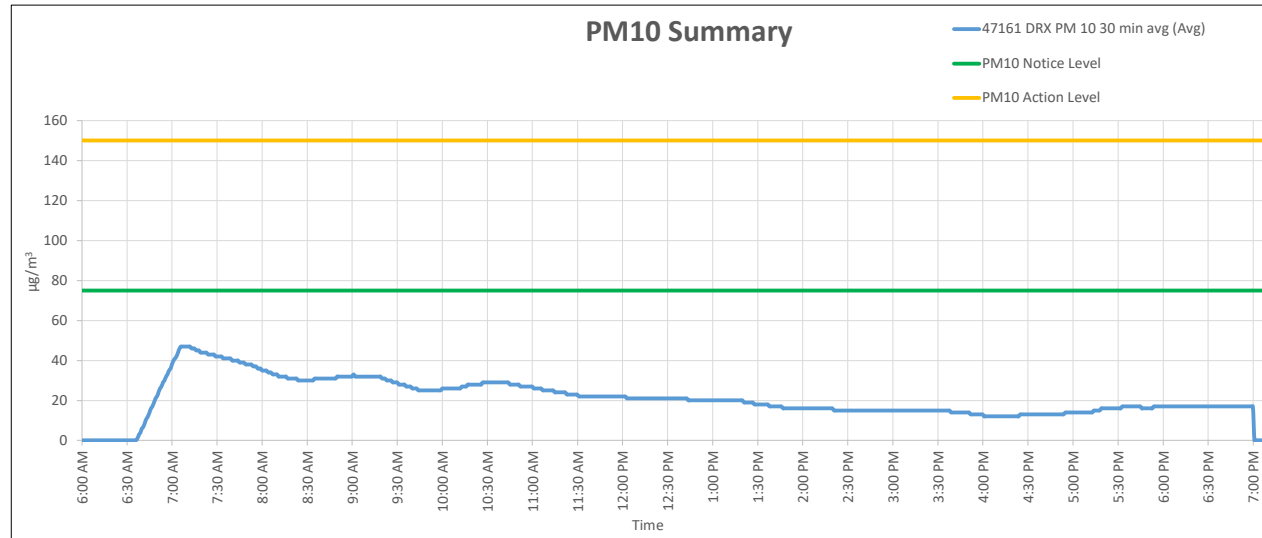


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, November 11, 2024



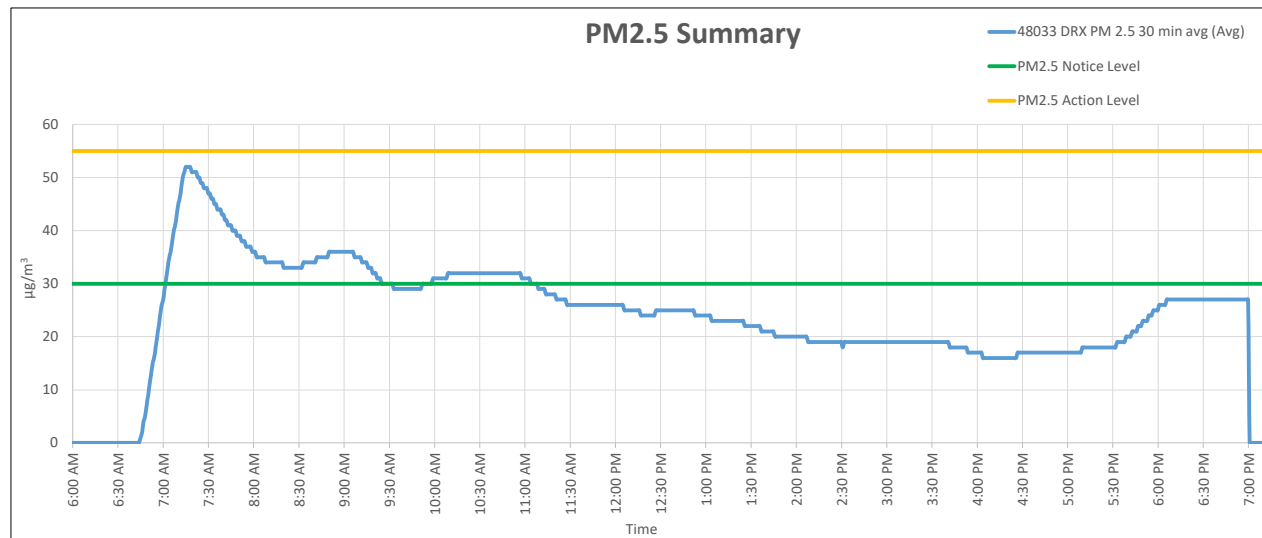
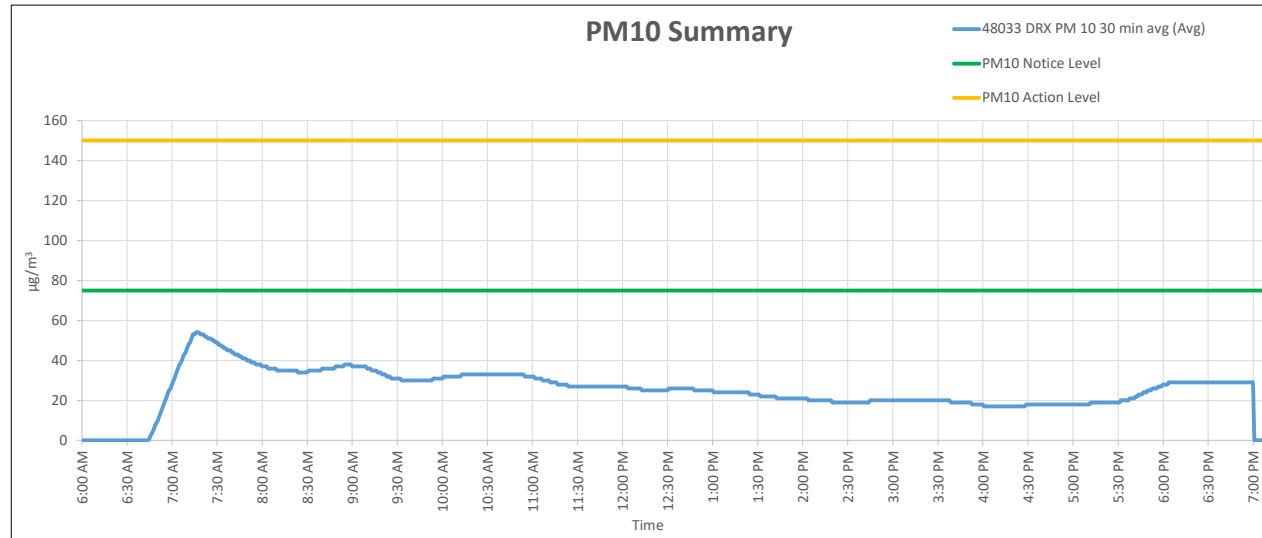
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	6:37 AM	7:00 PM	22.17	47.00	21.85	47.00



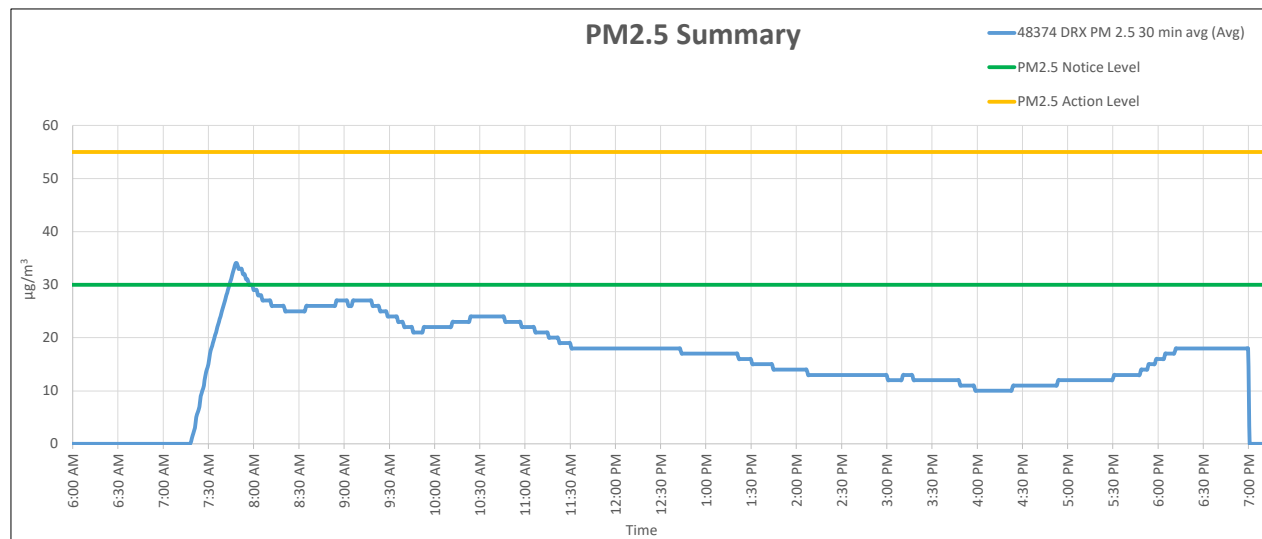
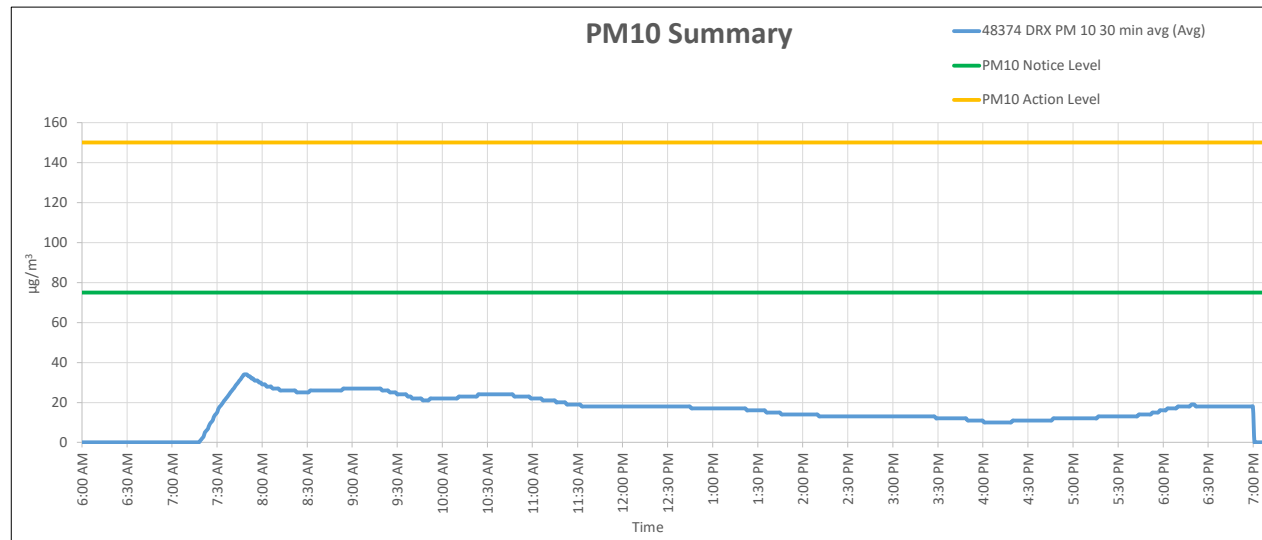
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	6:45 AM	7:00 PM	27.06	54.00	26.00	52.00



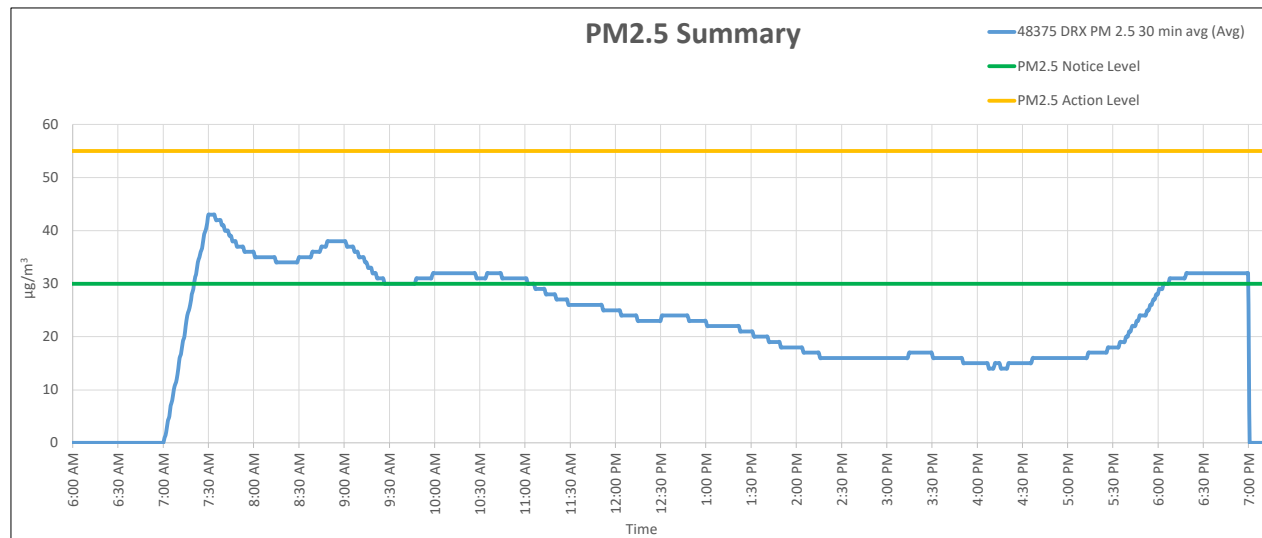
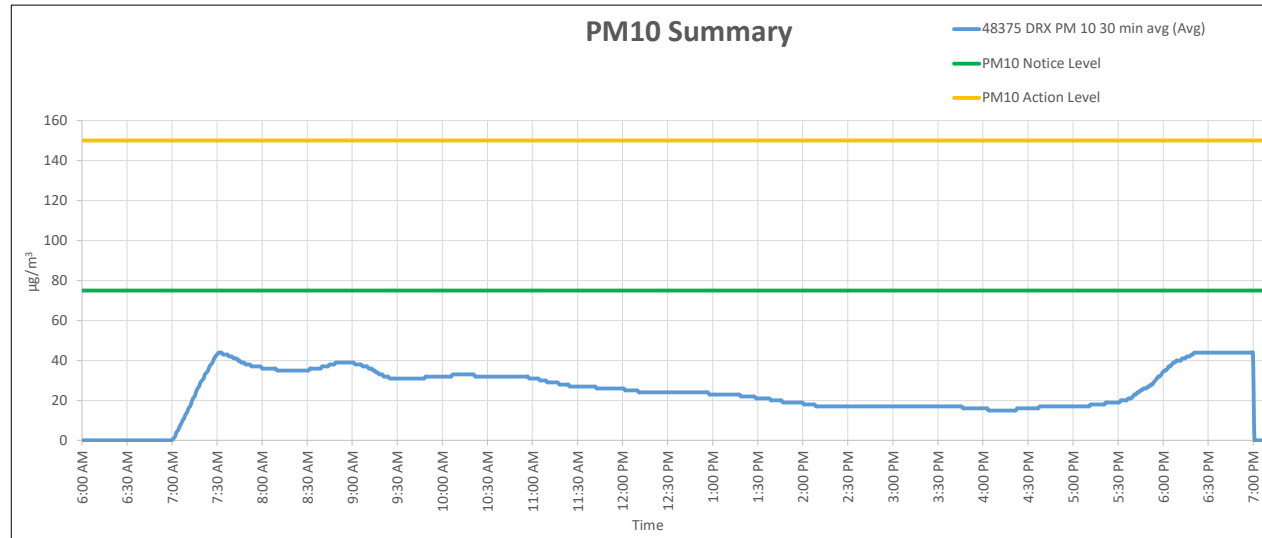
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	7:19 AM	7:00 PM	17.91	34.00	17.77	34.00



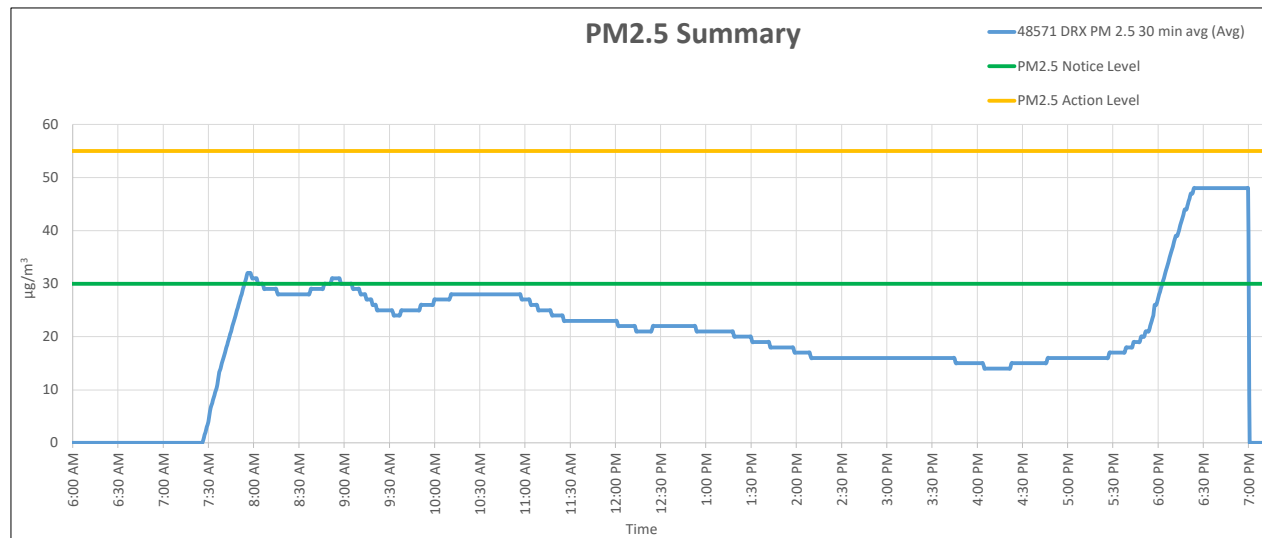
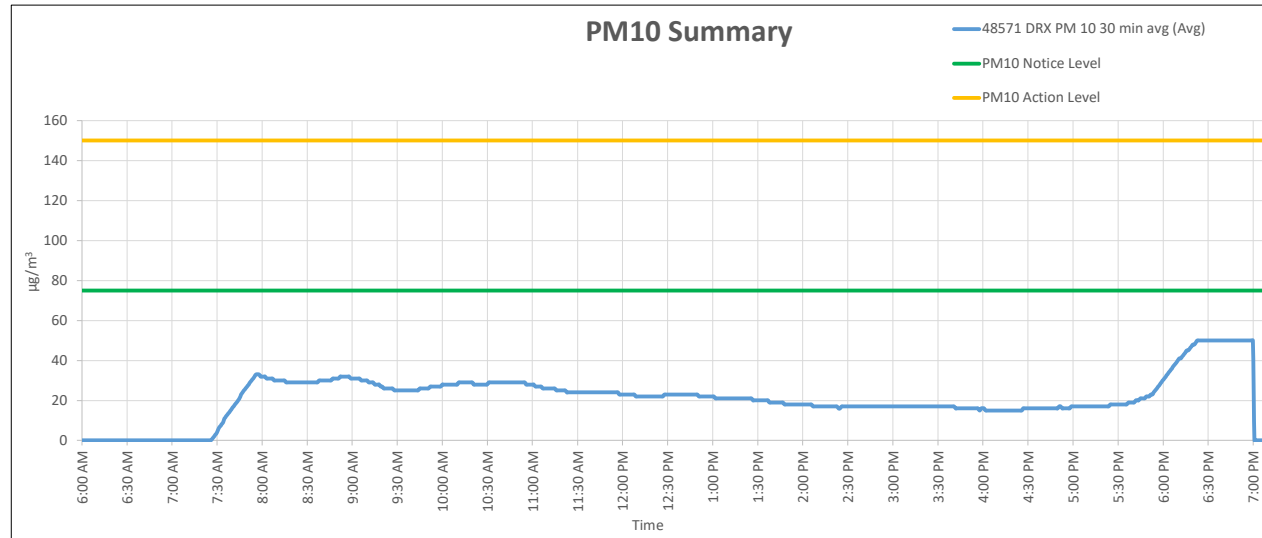
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:01 AM	7:00 PM	26.65	44.00	24.97	43.00



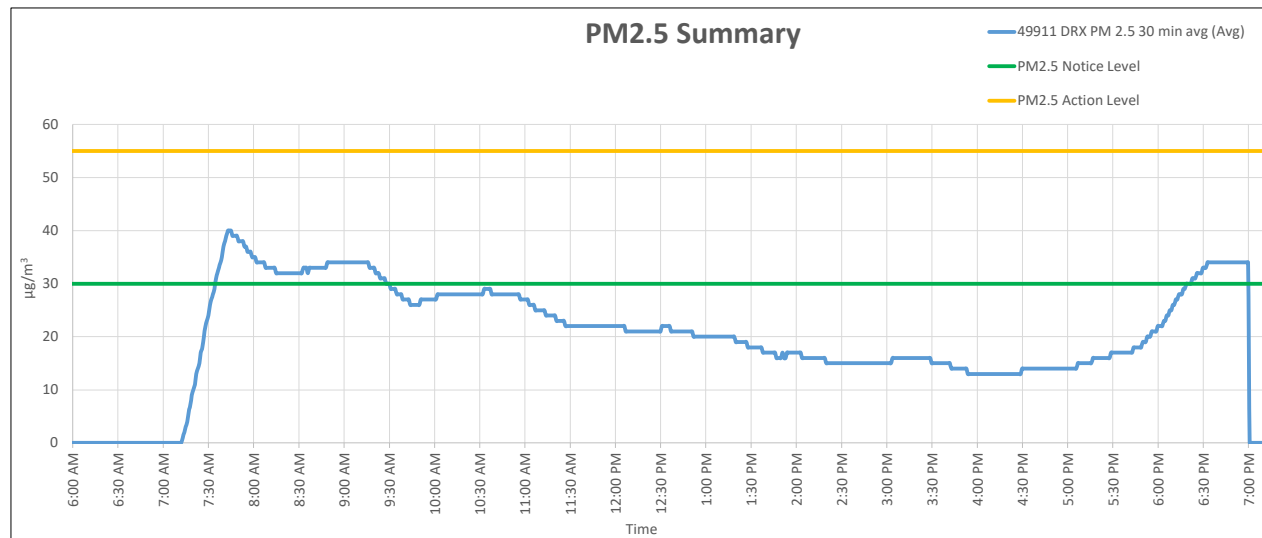
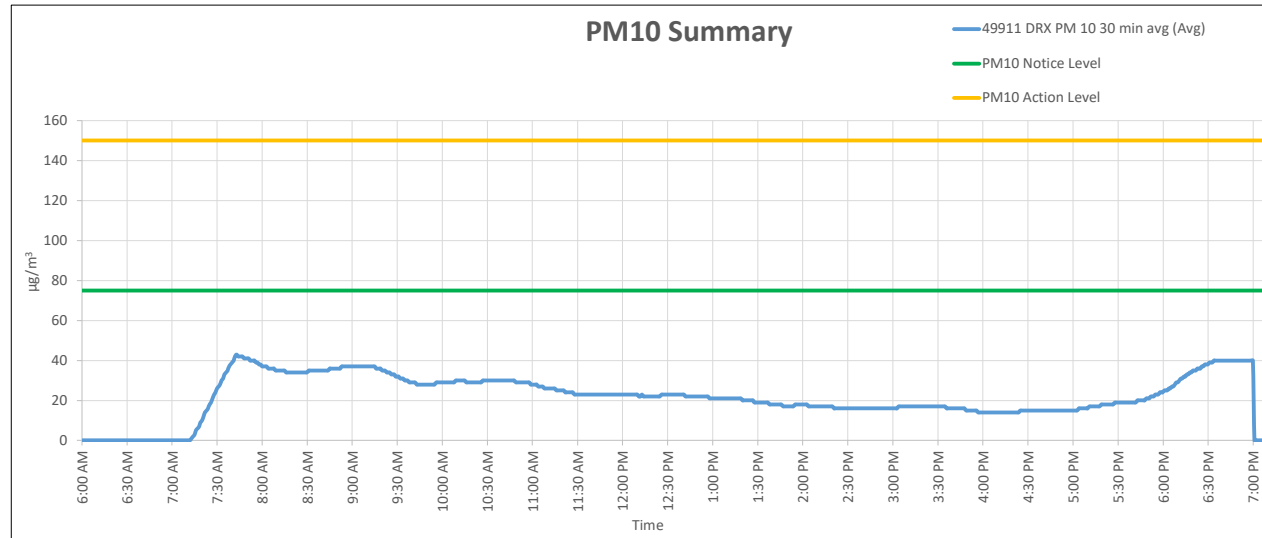
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	7:27 AM	7:00 PM	24.12	50.00	23.15	48.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, November 11, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	7:13 AM	7:00 PM	24.39	43.00	22.59	40.00



SECTION 3 RESULTS OF INTEGRATED AIR SAMPLING

3.1 Integrated Air Sampling

UPRR is collecting integrated air samples for polynuclear aromatic hydrocarbons (PAHs), lead and arsenic during the excavation activities. Integrated air sampling is a method of sampling that is collected by drawing a known volume of air through filters or media and sent to a laboratory for analysis. Due to the analysis required, integrated air sample results are not real time. The results provided herein are the most recent lab results available. Up to two (2) air samples are taken per week per pollutant. Lab results are compared to TCEQ short-term and long-term Air Monitoring Comparison Values (AMCV). AMCV values are chemical specific and are intended to be protective of human health and welfare.

- **Short-Term AMCV:** The short-term AMCV, based on acute exposure health and welfare data, is compared to monitored concentrations that can be 30 minutes to 1-hour, which represent a point in time for a specific location.
- **Long-Term AMCV:** The long-term AMCV, based on chronic health and welfare data, is used to evaluate annual averaged monitored concentrations or annual concentrations averaged over multiple years (if available), which represent multiple points in time for specific locations.

Health-based AMCVs are safe levels at which exposure is unlikely to result in adverse health effects. Airborne levels of these contaminants are considered acceptable if the 12-hour average airborne concentrations were below the applicable AMCV values presented below in Table 4.

Table 5 – TCEQ AMCV for Arsenic and PAH Union Pacific Houston Wood Preserving Works		
Houston, Texas		
Analyte	Short-Term AMCV ($\mu\text{g}/\text{m}^3$)	Long-Term AMCV ($\mu\text{g}/\text{m}^3$)
Arsenic	3	0.067
Acenaphthene	100	10
Acenaphthylene	100	10
Anthracene	1	0.067
Benzo(a)anthracene	0.5	0.05
Benzo(a)pyrene	NE	0.017
Benzo(b)fluoranthene	0.5	0.05
Benzo(c)pyrene	NE	NE
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
1-Methylnaphthalene	NE	NE
2-Methylnaphthalene	NE	NE
Naphthalene	500	50
Perylene	NE	NE
Phenanthrene	8	0.8

SECTION 3

Table 5 – TCEQ AMCV for Arsenic and PAH Union Pacific Houston Wood Preserving Works		
Houston, Texas		
Analyte	Short-Term AMCV ($\mu\text{g}/\text{m}^3$)	Long-Term AMCV ($\mu\text{g}/\text{m}^3$)
Pyrene	0.5	0.05
Acronyms: NE – None Established		

The Texas Commission on Environmental Quality (TCEQ) has adopted the USEPA NAAQS for lead. Airborne levels of lead were considered to be acceptable if concentrations measured were below $0.15 \mu\text{g}/\text{m}^3$ as a 3-month average concentration.

Lead, arsenic and PAH samples were not taken on the single sampling day in November.



ATTACHMENT C

Dust Control and Air Monitoring Plan Addendum

June 15, 2024

Kevin Peterburs
Senior Manager
Union Pacific Railroad
4823 N 119th Street
Milwaukee, WI 53225

Via Email: kjpeterb@up.com

SUBJECT: Ambient Air Monitoring at the Houston Wood Preserving Works – Englewood Intermodal Yard – Focused Excavations

United Pacific Railroad Company–Houston Wood Preserving Works Site
4910 Liberty Road
Houston, Texas
Atlas Project No.: NPUP0003, Phase 2

Dear Mr. Peterburs:

Atlas Technical Consultants, LLC (Atlas) is proposing to amend the Dust Control and Air Monitoring Plan for the Houston Wood Preserving Works – Englewood Intermodal Yard – Focused Excavations to include revised Target Dust Control Levels. The revised levels would take action only during regional poor air quality days where onsite air monitoring levels are near or exceed the Stop Work threshold without additional excavation activities. Poor air quality days due to particulate matter are common in the Houston metroplex. The revised levels would ensure Union Pacific Railroad (UPRR) could continue excavation activities despite regional poor air quality.

The current Dust Control and Air Monitoring Plan dated October 20, 2023, anticipated the potential need to revise certain monitoring criteria due to environmental conditions. The plan states “If IHST identifies other sites or environmental conditions that clearly may confound particulate level measurements for control purposes, IHST may apply additional reasonable corrections or exclusions to monitoring station data. Any such corrections will be documented and communicated to UPRR managers and the project Environmental Manager. Together with UPRR, Atlas has determined poor regional air quality is an environmental condition that needs to be addressed. With this addendum, UPRR is proposing to exclude background monitor concentrations from the onsite monitor concentrations during regional poor air quality days to compare to the established control level thresholds.

Air quality concentrations from the TCEQ air monitoring station Houston North Wayside C405/C1033 would be used as a baseline to determine the regional air quality. The Houston North Wayside monitor is approximately 3.5 miles from the Houston Wood Preserving Works site. Revised thresholds would be implemented if the onsite monitor value minus the TCEQ monitor values exceeded the respective Notice Level, Action Level or Stop Work level.

The revised threshold levels are presented in Table 1.



Table 1 – Revised Established Control Levels Union Pacific Houston Wood Preserving Works Houston, Texas		
	PM _{2.5} 30-minute Average	PM ₁₀ 30-minute Average
Notice Level on Poor Air Quality Days	Onsite Monitor - TCEQ Monitor >30 µg/m ³	Onsite Monitor - TCEQ Monitor >75 µg/m ³
	The Notice Level is intended as an early warning of potential elevations in airborne dust levels. When the notice level is exceeded the onsite IH 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 IH.	
Action Level on Poor Air Quality Days	Onsite Monitor - TCEQ Monitor >55 µg/m ³	Onsite Monitor - TCEQ Monitor >150 µg/m ³
	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 IH 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 IH.	
Stop-Work Level on Poor Air Quality Days	Onsite Monitor - TCEQ Monitor >85 µg/m ³	Onsite Monitor - TCEQ Monitor >300 µg/m ³
	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 IH 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.	
Acronyms: IH – Industrial Hygienist		

TCEQ real-time air monitoring data can be delayed by two to three hours. The onsite Industrial Hygienist would note the most recent available value from the North North Wayside C405/C1033 monitor and calculate the difference between the two monitors. If the difference is below the respective Notice Level, Action Level or Stop Work level excavation activities can continue. If the difference between the two monitors exceed the respective Notice Level, Action Level or Stop Work level then appropriate action by UPRR personnel will be taken.