August 15, 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 July 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 July 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 July 2024:

Week Period July 1 through July 5, 2024:

- **Remediation Activities:**
  - E3 conducted the following activities during this week:

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  - Recovered tar material excavations FE-1/FE-3, FE- 4, FE-5, FE-7, FE-8, and FE-11 (Photo Nos. 1-4).

- **Dust Control and Air Monitoring:**
  - Atlas Technical Consultants (Atlas) conducted real time air and dust monitoring at the Site on behalf of UPRR in accordance with the Dust Control and Air Monitoring (DCAM) Plan provided in the Revised IMWP. No Target Dust Control Levels were exceeded during the remediation activities on July 1st through July 3rd and on July 5th (Appendix B).

- **Soil/Waste Management**
  - No soil or concrete/asphalt were generated this week. Roll-offs staged at the Site were covered.
  - On July 2, WSP site personnel observed a bird stuck in a tar seep at FE-5. WSP biologist (Kenneth Huebel) identified the bird to be a protected species based on photographs. Kenneth Huebel then traveled to Site to investigate and remove bird. Bird carcass was removed from FE-5 and placed in cardboard box to be held onsite until further instruction. Kenneth contacted the Texas Parks and Wildlife Department (TPWD) and U.S. Fish and Wildlife Service (USFWS) to report the incident. A response action plan was put into place to ensure all tar seeps in excavations were either covered in plastic or removed.
  - On Wednesday July 3rd, tar material from FE 1/FE-3, FE-4, FE-5, FE-7, FE-8, and FE-11 was recovered and stored in five drums (Drum Nos. 9-13).
  - Roll-off containers containing excavated soils were transported to the proper landfill facilities:
    - 15 roll-offs containing Class 1 non-hazardous soil waste were profiled and shipped to the Republic Services Blue Ridge Facility.
    - Two roll-offs containing Class 2 non-hazardous soil waste were profiled and shipped to the Republic Services McCarty Road Facility.

- **Stormwater Management**
  - E3 prepared stormwater mitigation measures by placing berms and straw wattles around all open excavations and surface drains, covering all roll-offs, and fixing secondary containments blown over by high wind.
  - Approximately 2,500 gallons of stormwater were recovered from the FE locations and secondary containments using vacuum trucks and transferred to frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events.
  - As of Friday July 5th, approximately 51,934 gallons of stormwater were stored onsite in two large frac tanks, two mini frac tanks, and in a vacuum truck.

Week Period July 8 through July 12, 2024:

- **Remediation Activities:**
  - Hurricane Beryl made landfall in Houston, TX on July 8th. Soil backfilling activities were not conducted this week due to wet conditions throughout the week.

- **Dust Control and Air Monitoring:**
  - No air and dust monitoring were conducted this week due to the wet conditions and no dust-generating activities being conducted.

- **Soil/Waste Management**
  - No soil or concrete/asphalt were generated this week. Roll-offs staged at the Site were covered.
  - Roll-off containers containing excavated soils were transported to the proper landfill facilities:
    - Two roll-offs containing Class 1 non-hazardous soil waste were profiled and shipped to the Republic Services Blue Ridge Facility.
    - Two roll-offs containing Class 2 non-hazardous soil waste were profiled and shipped to the Republic Services McCarty Road Facility.

- **Stormwater Management**
  - WSP personnel conducted a Site visit midday on July 8th following landfall of Hurricane Beryl to assess damage at the Site. Large amounts of stormwater accumulated in the focused excavations, but none of the excavations were overtopped with stormwater (Photo Nos. 5-9).
  - E3 began pumping storm water from the excavations on the afternoon of July 8th that continued during the week. E3 also maintained the stormwater protections with soil berms and straw wattles around open excavations and surface drains, covering all roll-offs, and fixing secondary containments blown over by high wind.
  - Following extreme rain events, approximately 148,566 gallons of stormwater were recovered from the FE locations and secondary containments using vacuum trucks. The storm water was transferred to and stored in frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events.
  - On Thursday July 11th, WSP personnel sampled Frac Tanks F05535, A5591, FRC503319, FRC589169, FRC589227, and FRC589060.
  - As of Friday July 12th, there were 11 frac tanks and two mini frac tanks onsite with approximately 200,500 gallons of stormwater stored onsite.

Week Period July 15 through July 19, 2024:

- **Remediation Activities:**
  - E3 conducted the following activities during this week:
    - No backfilling activities were conducted this week due to continued rain events and wet conditions.

- **Dust Control and Air Monitoring:**
  - No air and dust monitoring were conducted this week due to the wet conditions and no dust-generating activities being conducted.

- **Soil/Waste Management**
  - No roll-off containers were filled this week. The roll-offs were covered when not actively being loaded.
  - Roll-off containers containing excavated soils were transported to the proper landfill facilities:
    - One roll-off containing Hazardous soil waste was delivered to a disposal facility.
    - 20 roll-offs containing Class 1 non-hazardous soil waste were profiled and delivered to the Republic Services Blue Ridge Facility.
    - 16 roll-offs containing Class 2 non-hazardous soil waste were profiled and delivered to the Republic Services McCarty Road Facility.
- **Stormwater Management**

- Following additional rain events, approximately 71,500 gallons of stormwater were recovered from the FEs using vacuum trucks and transferred and stored in frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events.
- As of Friday July 19th, approximately 272,000 gallons of stormwater are being stored onsite in 12 frac tanks, 2 mini frac tanks, and two vacuum trucks onsite.

Week Period July 22 through July 26, 2024:

- **Remediation Activities:**
  - E3 completed the following excavation activities this week:
    - No backfilling activities were conducted this week due to continued rain events and wet conditions.

- **Dust Control and Air Monitoring:**
  - No air and dust monitoring were conducted this week due to the wet conditions and no dust-generating activities being conducted.

- **Soil/Waste Management**
  - No roll-off containers were filled this week. The roll-offs were covered when not actively being loaded.
  - Roll-off containers containing excavated soils were transported to the proper landfill facilities:
    - Eight roll-offs containing Hazardous soil waste were profiled and delivered to the Veolia Gum Springs Facility.
    - One roll-off containing Class 1 non-hazardous soil waste was profiled and delivered to the Republic Services Blue Ridge Facility.
    - Five roll-offs containing Class 2 non-hazardous soil waste were profiled and delivered to the Republic Services McCarty Ridge Facility.

- **Stormwater Management**
  - E3 prepared and maintained stormwater mitigation measures by placing berms and straw wattles around all open excavations and surface drains, covering all roll-offs, and fixing secondary containments blown over by high wind.
  - Approximately 64,000 gallons of stormwater were recovered from focused excavations and secondary containments using vacuum trucks and transferred and stored in frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events (Photo 33-35).
  - As of Friday July 25th, approximately 337,000 gallons of stormwater are being stored onsite in 16 frac tanks and two mini frac tanks.

Week Period July 29 through August 2, 2024:

- **Remediation Activities:**
  - E3 completed the following excavation activities this week:
    - No backfilling activities were conducted this week due to wet conditions.

- **Dust Control and Air Monitoring:**

- Atlas personnel were absent from the site this week due to the absence of dust-generating activities.

- **Soil/Waste Management**
  - No roll-off containers were filled this week. The roll-offs were covered when not actively being loaded.
  - Roll-off containers containing excavated soils were transported to the proper landfill facilities:
    - Two roll-offs containing Hazardous soil waste were profiled and delivered to the Veolia Gum Springs Facility.
    - Seven roll-offs containing Class 1 soil waste were profiled and delivered to the Republic Services Blue Ridge Facility.
    - 15 roll-offs containing Class 2 soil waste were profiled and delivered to the Republic Services McCarty Road Facility.

- **Stormwater Management**
  - E3 prepared and maintained stormwater mitigation measures by maintaining soil berms and straw wattles around all open excavations and surface drains, covering all roll-offs, and fixing secondary containments blown over by high wind.
  - Approximately 44,000 gallons of stormwater were recovered from focused excavations and secondary containments using vacuum trucks and stored in frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events.
  - As of Wednesday 7/31, approximately 381,500 gallons of stormwater are being stored onsite in 17 frac tanks and two mini frac tanks.

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 July 2024 (select photographs from the weekly inspections are provided in Attachment C as Photo Nos 17 through 49):

- The NAPL Collection System Sump 1 (B099/B100 stalls), Sump 2 (B103/B104 stalls), and Sump 3 (B107/B108 stalls) were checked weekly for NAPL using an interface probe. A hoe was used to scrape the bottom of the sumps and recover NAPL, if present, during the weekly inspections. Approximately 0.013 gallons of NAPL were removed from Sump 1 during the inspection on July 17, 2024 (Photo 17). No NAPL was detected or recovered from Sumps 2 and 3 during the July 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 July 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:
  - July 3rd – B099/B100 was measured at 23 inches, B103/B104 was measured at 43 inches, and B107/B108 was measured at 42 inches (Photo 17, 18, and 19).

- July 10th – at 13, 35 and 34 inches (Photo 20, 21, and 22).
- July 17th – at 9, 39, and 38 inches (Photo 23, 25, and 26).
- July 24th – at 0, 36, and 36 inches (Photo 27, 28, and 29).
- July 31st – at 45, 45, and 45 inches (Photo 31, 32, and 33)

- During the July 2024 inspections, the water in Sump 1 was observed to range from dark brown to light brown to brown in color, and the water in Sump 2 and Sump 3 were observed to be brown or light brown. A sheen was observed at Sump 1 during the July 3, 10, 17, and 31, 2024 inspections and Sump 3 during the July 3, 2024 inspection. No odors were reported during the July inspections.
- UPRR remediation contractor E3 pumped down the water in the sumps on July 29, 2024. The recovered water was transferred to frac tank 4189C which was also used to store stormwater as part of the Focused Excavation activities.
- A small amount of tar-like material was observed at stall B107 on the July 24th, 2024 inspection. Approximately 2 cubic inches of tar-like material was removed (Photo 30).

Areas Outside NAPL Collection System Inspections

For areas outside the NAPL Collection System, a small amount of tar-like material was observed on the concrete or asphalt surface at the following locations during the July 2024 weekly inspections. The tar-like material was recovered from these locations when observed:

Seep Observations Outside the NAPL Collection System Area	
Stall Number	**Observation Date(s)**
Track 802	July 3rd (Photo 44), July 10th (Photo 45), July 17th (Photo 46), July 24th (Photo 47), July 31st (Photo 48)

- Tar-like material observed during the weekly inspection events was removed and recovered using a hand tool to scrape up the material. The number of tar-like material seeps observed, and total volume of material recovered during the month of July was less than during the June inspections. The collection volume reduced from 0.08 gallons over 4 inspections to 0.07 gallons over 5 inspections due to the on-going focused excavations at the previous seep locations. The material recovered was placed in a drum staged at the CSA for disposal.
- During the July 2024 inspections, no NAPL seeps were observed at the seven July 2020 test pit locations (stalls A010, A021, A098, B013, B057, B096 and B108) or three other stall numbers B042, B056, and B102 Joint.
- As of the end of July 2024, seeps A010, A022, B042, B056, B057, B096, B100, B102, B105, and RD-14have been excavated. No excavations took place in the month of July.
- There was slight staining between the train tracks near FE-13 (Photo 49).

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, G eologist

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 – July 2024
Attachment C – Dust Control and Air Monitoring Plan Addendum

ATTACHMENT A

Weekly Inspection Photolog

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
1	7/2/2024

Description:

Removal of tar from FE-4.

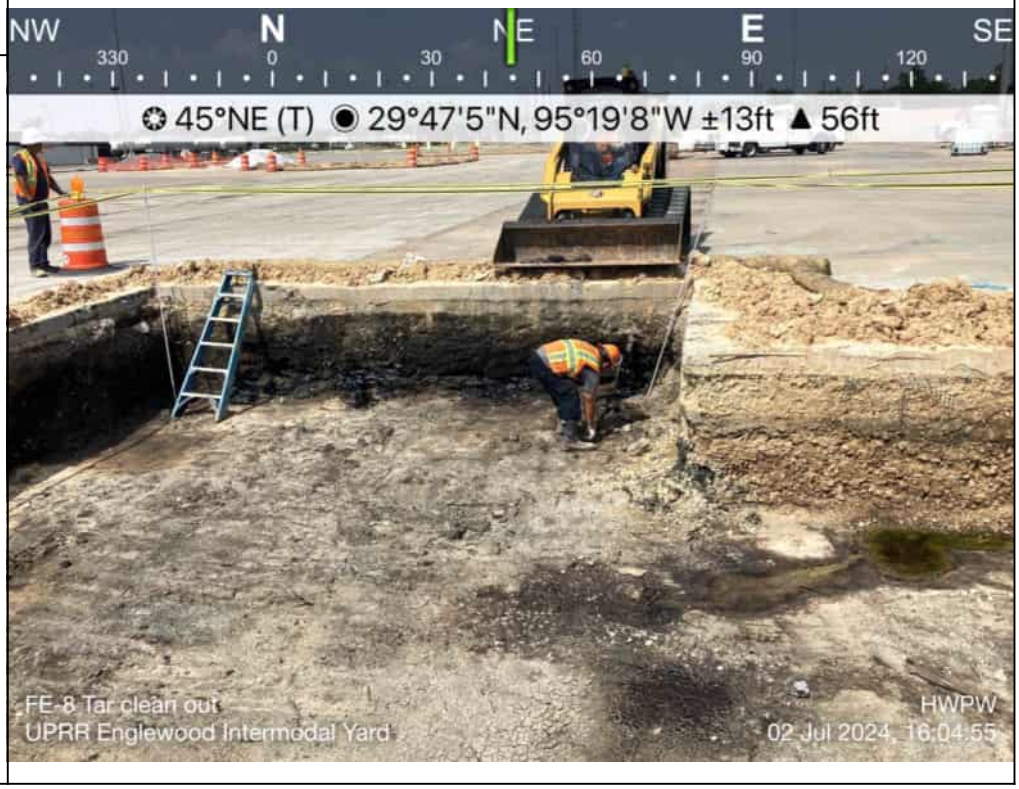
Lat: 29.784722
Long: -95.319444

Photo No.	Inspection Date:
2	7/2/2024

Description:

Removal of tar from FE-8.

Lat: 29.784722
Long: -95.318889



PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
3	7/2/2024

Description:

Removal of tar from FE-1&3.

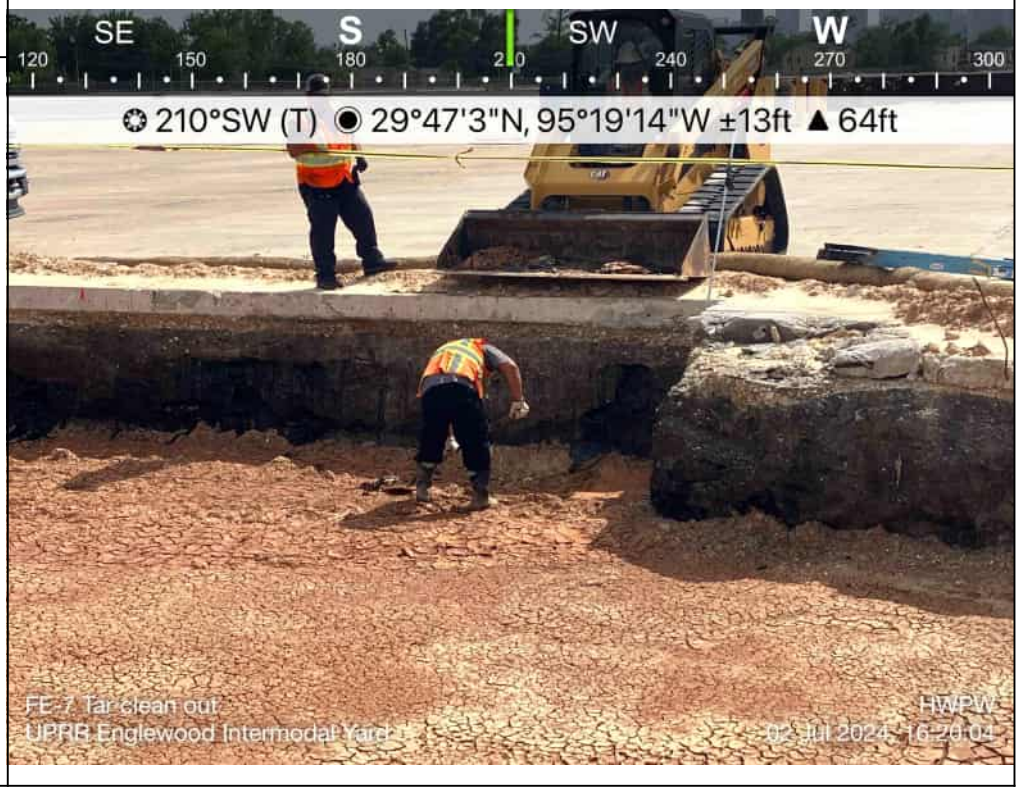
Lat: 29.784167
Long: -95.320833

Photo No.	Inspection Date:
4	7/2/2024

Description:

Removal of tar from FE-7.

Lat: 29.784167
Long: -95.320556



PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
5	7/8/2024

Description:

The stormwater in FE-1&3 resulting from Hurricane Beryl.

Lat: 29.784313
Long: -95.320746

Photo No.	Inspection Date:
6	7/8/2024

Description:

The stormwater in FE-7 resulting from Hurricane Beryl.

Lat: 29.784343
Long: -95.320537

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
7	7/8/2024

Description:

The stormwater in FE-12 resulting from Hurricane Beryl.

Lat: 29.785571
Long: -95.318592

Photo No.	Inspection Date:
8	7/8/2024

Description:

The stormwater in FE-10 resulting from Hurricane Beryl.

Lat: 29.784881
Long: -95.317691

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
9	7/11/2024

Description:

The stormwater removal of FE-1&3.

Lat: 29.784167
Long: -95.320556

Photo No.	Inspection Date:
10	7/16/2024

Description:

The removal of stormwater in FE-2.

Lat: 29.784167
Long: -95.320833

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
11	7/26/2024

Description:

Removal of stormwater from FE-10.

Lat: 29.784722
Long: -95.3175

Photo No.	Inspection Date:
12	7/26/2024

Description:

Removal of stormwater from FE-9.

Lat: 29.785
Long: -95.318333

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
13	7/26/2024

Description:

Removal of stormwater from FE-12.

Lat: 29.785278
Long: -95.318333

Photo No.	Inspection Date:
14	7/29/2024

Description:

Pump down of sumps with vacuum truck.

Lat: 29.784167
Long: -95.320278

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
15	7/30/2024

Description:

Removal of stormwater from FE-11.

Lat: 29.784167
Long: -95.319444

Photo No.	Inspection Date:
16	7/31/2024

Description:

The removal of stormwater from FE-13.

Lat: 29.785
Long: -95.321111

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
17	7/3/2024

Description:

Sump 1 (B099/B100), 23 inches of freeboard in sump. Sheen was observed, and water color was noted as dark brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
18	7/3/2024

Description:

Sump 2 (B103/B104), 43 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as brown.

Lat: 29.7842861
Long: -95.3208611

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
19	7/3/2024

Description:

Sump 3 (B107/B108), 42 inches of freeboard in sump. Sheen was observed, and water color was noted as brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
20	7/10/2024

Description:

Sump 1 (B099/B100), 13 inches of freeboard in sump. Sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
21	7/10/2024

Description:

Sump 2 (B103/B104), 35 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as brown.

Lat: 29.7842861
Long: -95.3208611

Photo No.	Inspection Date:
22	7/10/2024

Description:

Sump 3 (B107/B108), 34 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as brown.

Lat: 29.7844000
Long: -95.3205861

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
23	7/17/2024

Description:

Sump 1 (B099/B100), 9 inches of freeboard in sump. Sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
24	7/17/2024

Description:

NAPL seep at Sump 1 (B099/100); 3 in^3 of tar was removed.

Lat: 29.7844000
Long: -95.3205861

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
25	7/17/2024

Description:

Sump 2 (B103/B104), 39 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as light brown.

Lat: 29.7842861
Long: -95.3208611

Photo No.	Inspection Date:
26	7/17/2024

Description:

Sump 3 (B107/B108), 38 inches of freeboard in sump. Sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
27	7/24/2024

Description:

Sump 1 (B099/B100), 0 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

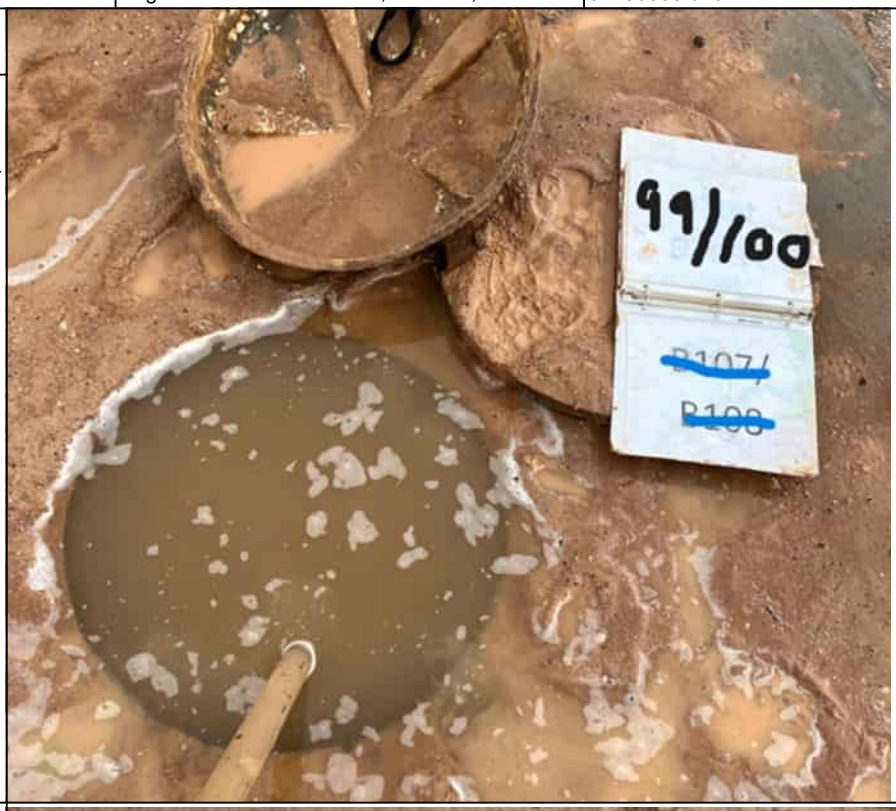


Photo No.	Inspection Date:
28	7/24/2024

Description:

Sump 2 (B103/B104), 36 inches of freeboard in sump. Sheen was observed, and water color was noted as light brown.

Lat: 29.7842861
Long: -95.3208611

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
29	7/24/2024

Description:

Sump 3 (B107/B108), 36 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
30	7/24/2024

Description:

NAPL seep at B107; 2 in^3 of tar was removed.

Lat: 29.7844000
Long: -95.3205861

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
31	7/31/2024

Description:

Sump 1 (B099/B100), 45 inches of freeboard in sump. Sheen was observed, and water color was noted as brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
32	7/31/2024

Description:

Sump 2 (B103/B104), 45 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as light brown.

Lat: 29.7842861
Long: -95.3208611

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
33	7/31/2024

Description:

Sump 3 (B107/B108), 45 inches of freeboard in sump. No odor or sheen was observed, and water color was noted as light brown.

Lat: 29.7844000
Long: -95.3205861

Photo No.	Inspection Date:
34	7/3/2024

Description:

Stall A060. Small cracks in pavement with staining.

Lat: 29.784858
Long: -95.319733

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
35	7/3/2024

Description:

Stall A070. Cracks in pavement with staining surrounding it.

Lat: 29.784858
Long: -95.319733

Photo No.	Inspection Date:
36	7/10/2024

Description:

Stall A060. Small cracks in pavement without staining.

Lat: 29.784858
Long: -95.319733

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
37	7/10/2024

Description:

Stall A070. Cracks in pavement without staining.

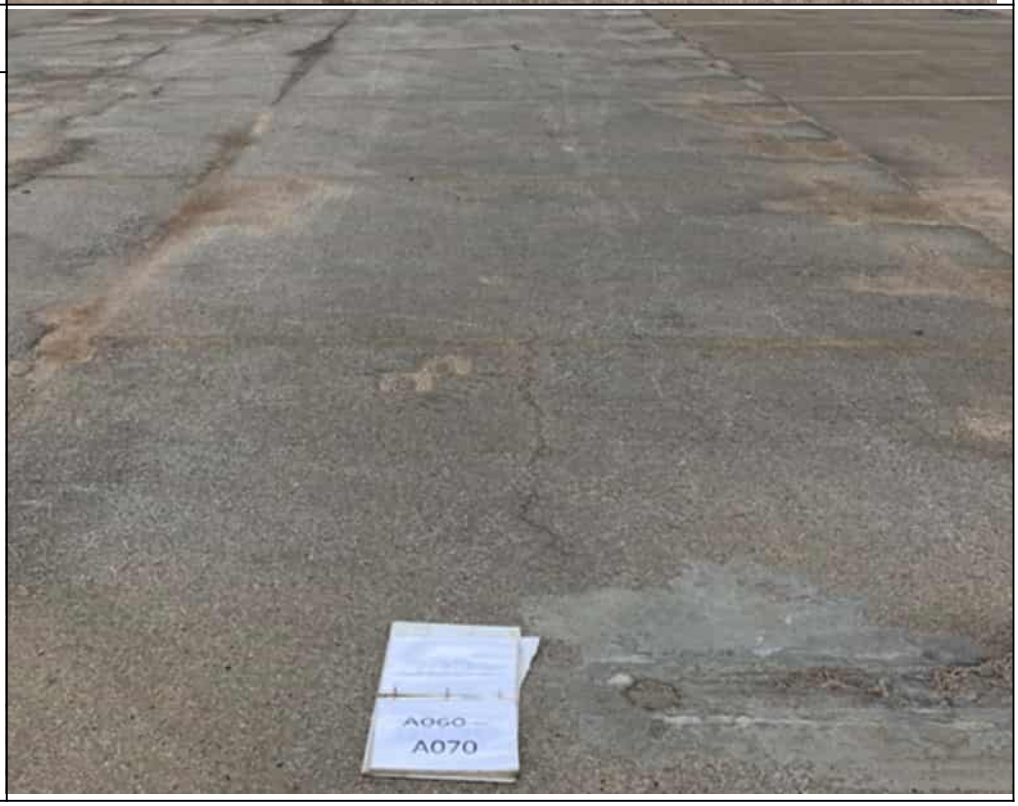
Lat: 29.784858
Long: -95.319733

Photo No.	Inspection Date:
38	7/17/2024

Description:

Stall A060. Small cracks in pavement without staining.

Lat: 29.784858
Long: -95.319733



PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
39	7/17/2024

Description:

Stall A070. Cracks in pavement with minor staining.

Lat: 29.784858
Long: -95.319733

Photo No.	Inspection Date:
40	7/24/2024

Description:

Stall A060. Small cracks in pavement with rainwater.

Lat: 29.784858
Long: -95.319733

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
41	7/24/2024

Description:

Stall A070. Cracks in pavement with rainwater.

Lat: 29.784858
Long: -95.319733

Photo No.	Inspection Date:
42	7/31/2024

Description:

Stall A060. Small cracks in pavement.

Lat: 29.784858
Long: -95.319733

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
43	7/31/2024

Description:

Stall A070. Cracks in pavement with minor staining.

Lat: 29.784858
Long: -95.319733

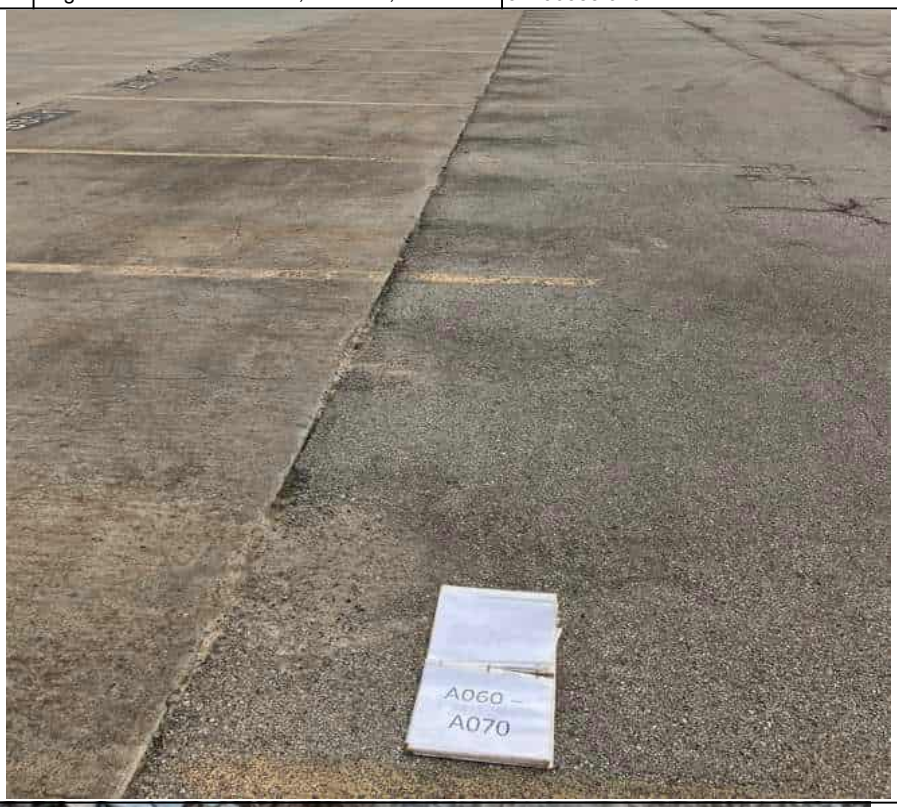


Photo No.	Inspection Date:
44	7/3/2024

Description:

NAPL seep at Track 802; 2 in^3 of tar was removed.

Lat: 29.784947
Long: -95.321214

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
45	7/10/2024

Description:

NAPL seep at Track 802; 4 in^3 of tar was removed.

Lat: 29.784947
Long: -95.321214

Photo No.	Inspection Date:
46	7/17/2024

Description:

Ongoing NAPL seep at Track 802; no recoverable tar.

Lat: 29.784947
Long: -95.321214

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
47	7/24/2024

Description:

NAPL seep at Track 802; 3 in^3 of tar was removed.

Lat: 29.784947
Long: -95.321214

Photo No.	Inspection Date:
48	7/31/2024

Description:

NAPL seep at Track 802; 3 in^3 of tar was removed.

Lat: 29.784947
Long: -95.321214

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Union Pacific Railroad	Englewood Intermodal Yard, Houston, Texas	31406585.016

Photo No.	Inspection Date:
49	7/31/2024

Description:

Staining in area between train tracks near FE-13.

Lat: 29.7858303
Long: -95.3194947

ATTACHMENT B

Air Monitoring Monthly Report – July 2024

Union Pacific Railroad
Houston Wood Preserving Works Site
Focused Excavation Project

Air Monitoring Monthly Report
July 2024

Houston, Texas

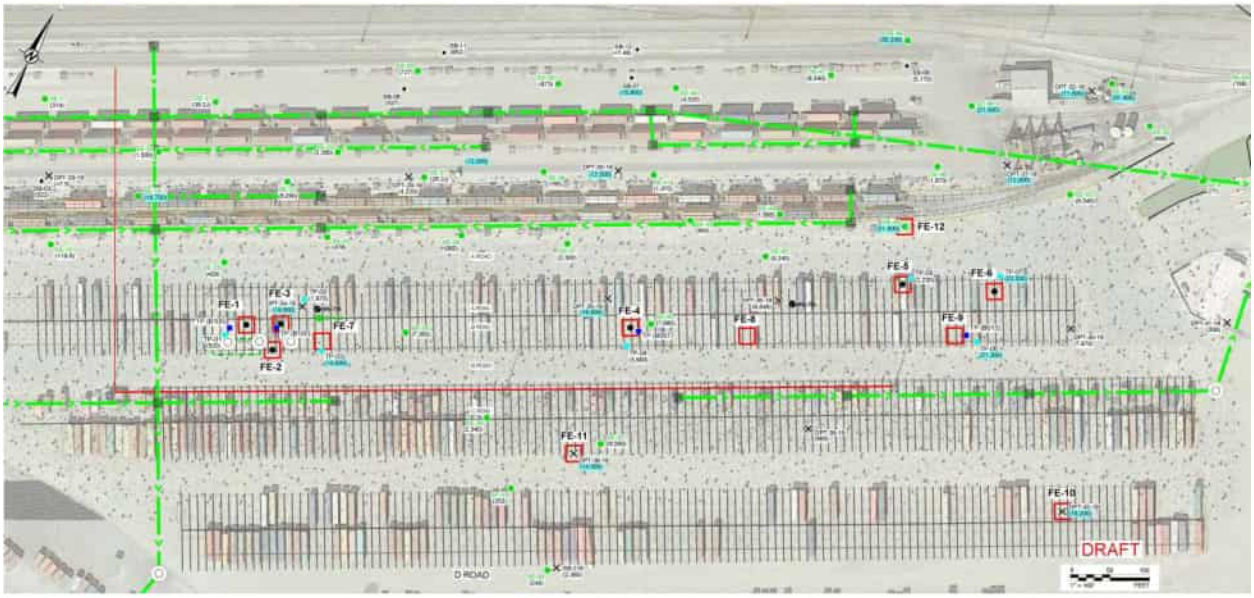
TABLE OF CONTENTS

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 PM_{10} 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 PM_{10} air monitoring. $PM_{2.5}$ and PM_{10} 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.

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 PM_{10} 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
- PM_{10} (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 PM_{10} 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

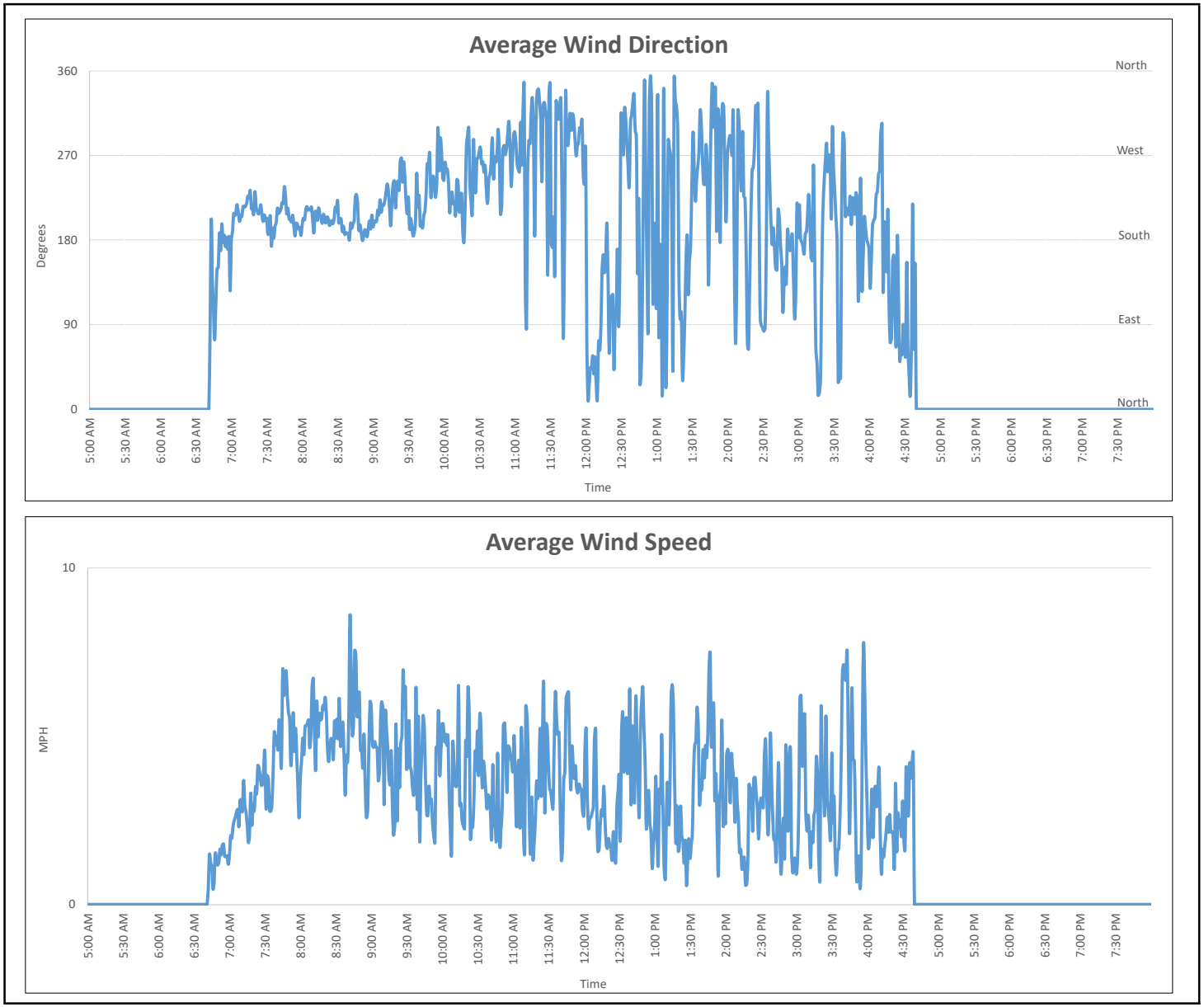
Rolling 30 minute averages of $PM_{2.5}$ and PM_{10} are calculated by each monitor on each sampling day during the excavation activities. Both $PM_{2.5}$ and PM_{10} are measured by the monitor every two

(2) minutes during the sampling period. The concentration shown on the graphs below represent the average $PM_{2.5}$ and PM_{10} concentration at the end of the 30 minute period.

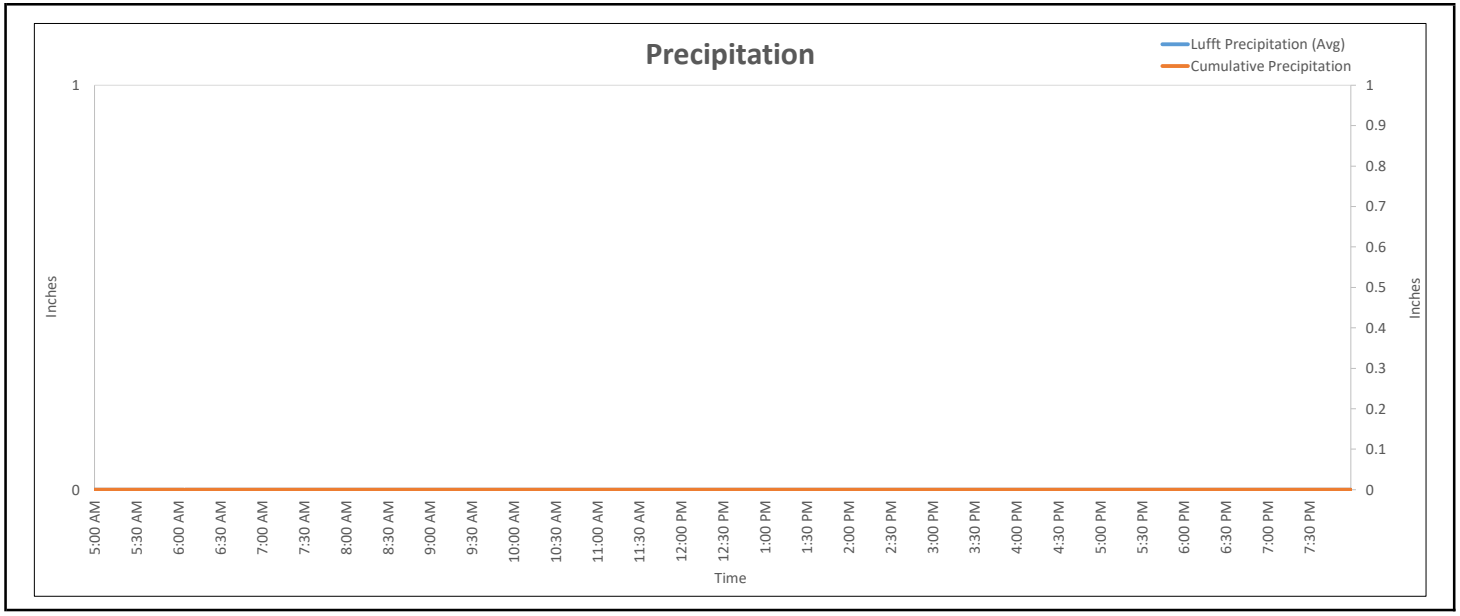
The maximum, minimum and average monitored value per day for each air monitor is presented in Table 5. Due to Hurricane Beryl and subsequent weather, excavation activities only occurred the first week of July. Additionally, no excavation activities occurred on July 4th, due to the holiday.

Monitoring levels did not reach the Stop Work threshold during the month of July.

Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, July 1, 2024



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, July 1, 2024



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
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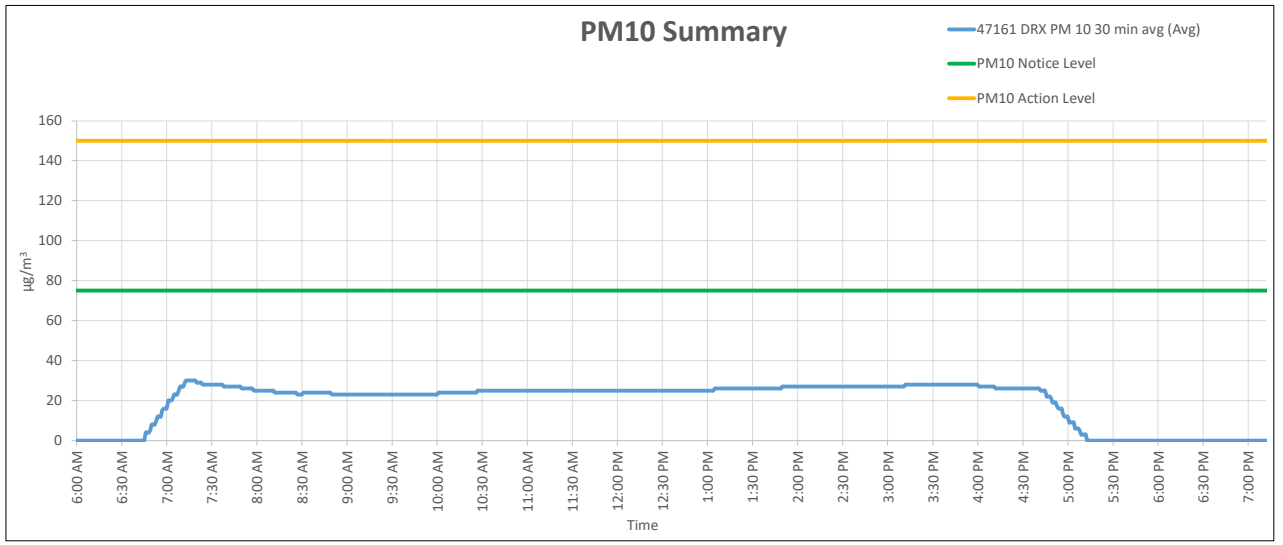
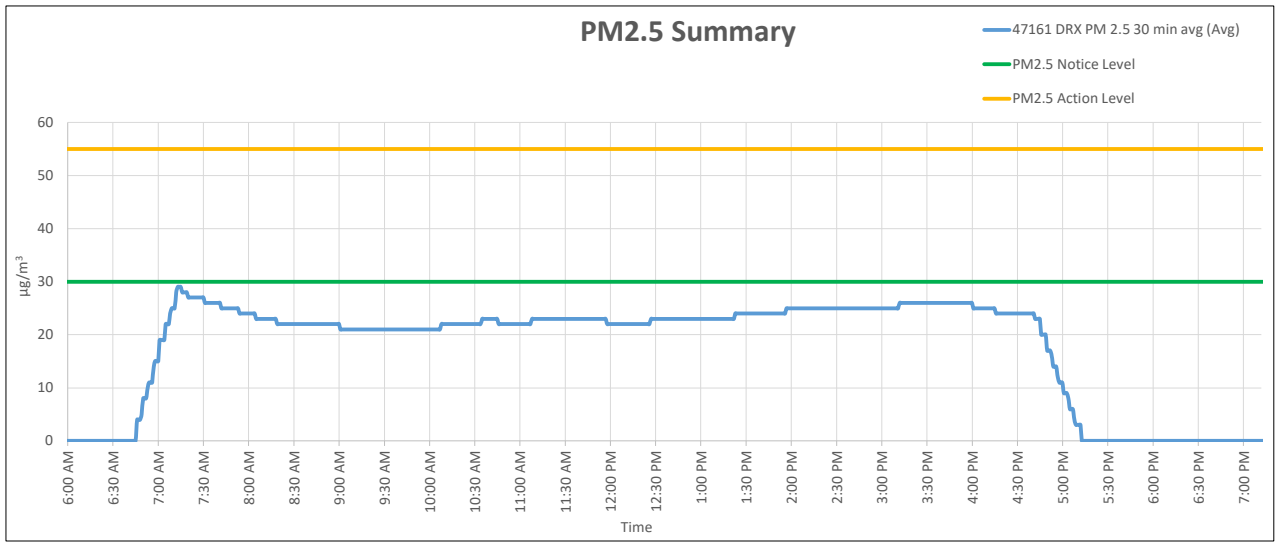
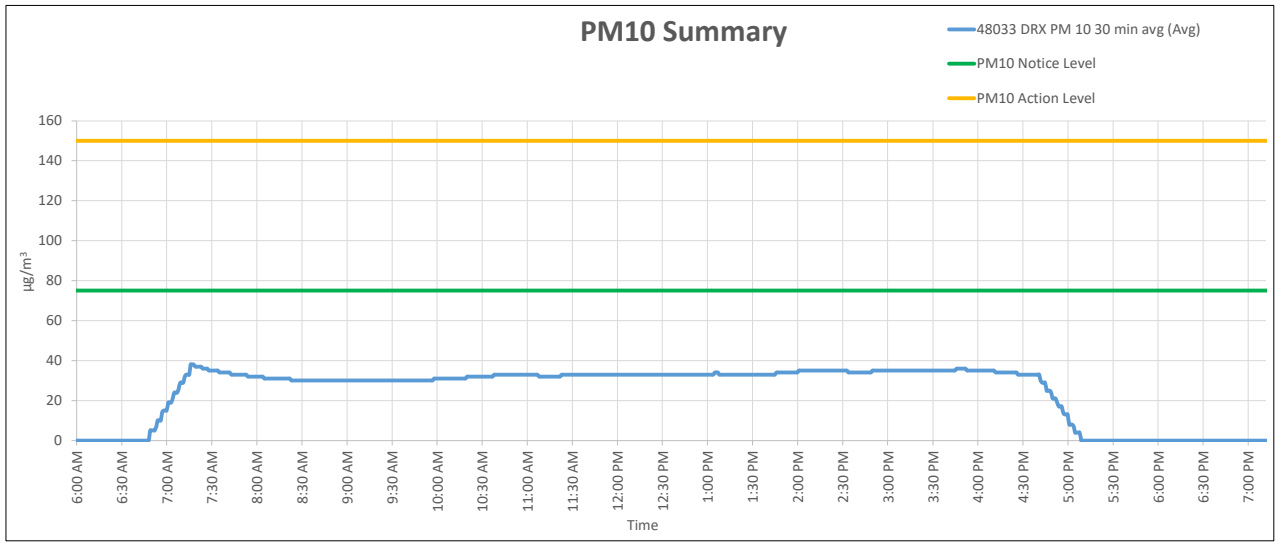
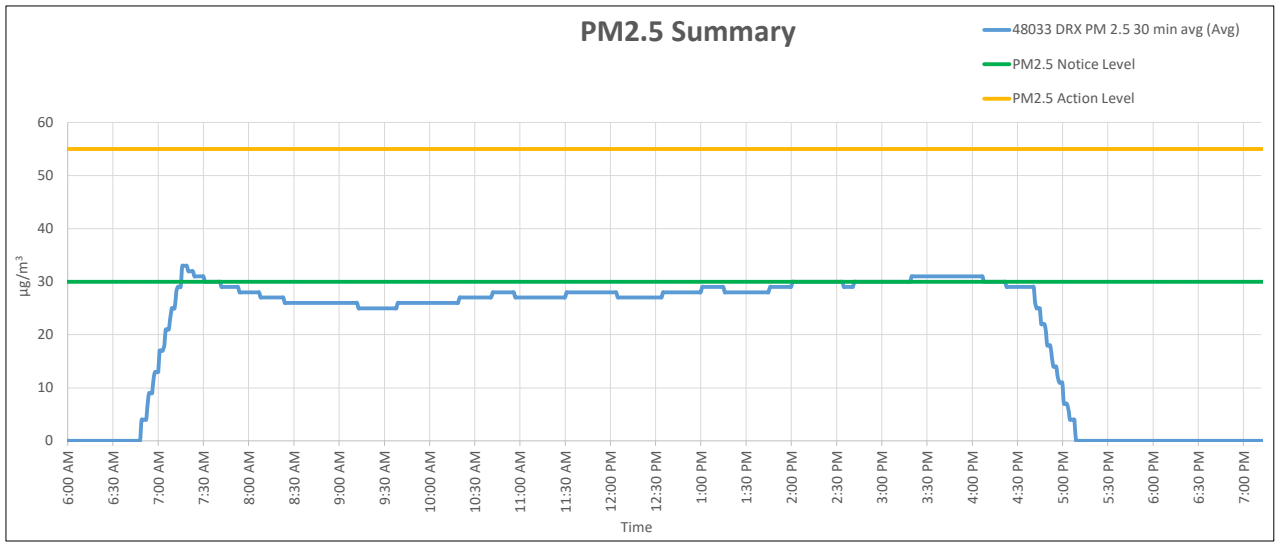




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

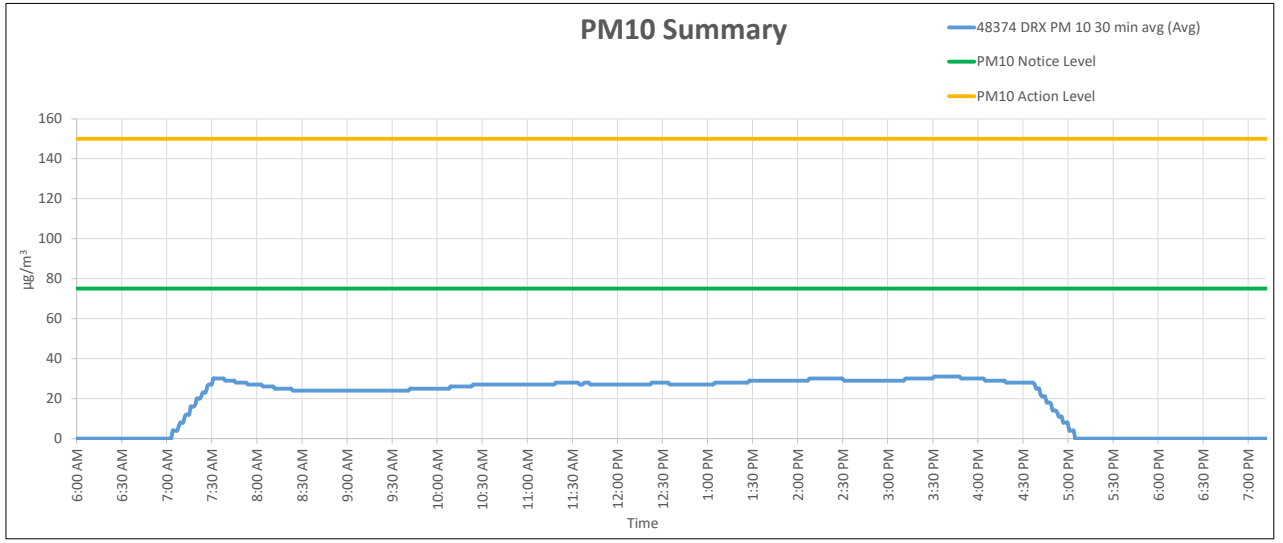
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48033	6:49 AM	5:08 PM	31.59	38.00	27.08	33.00

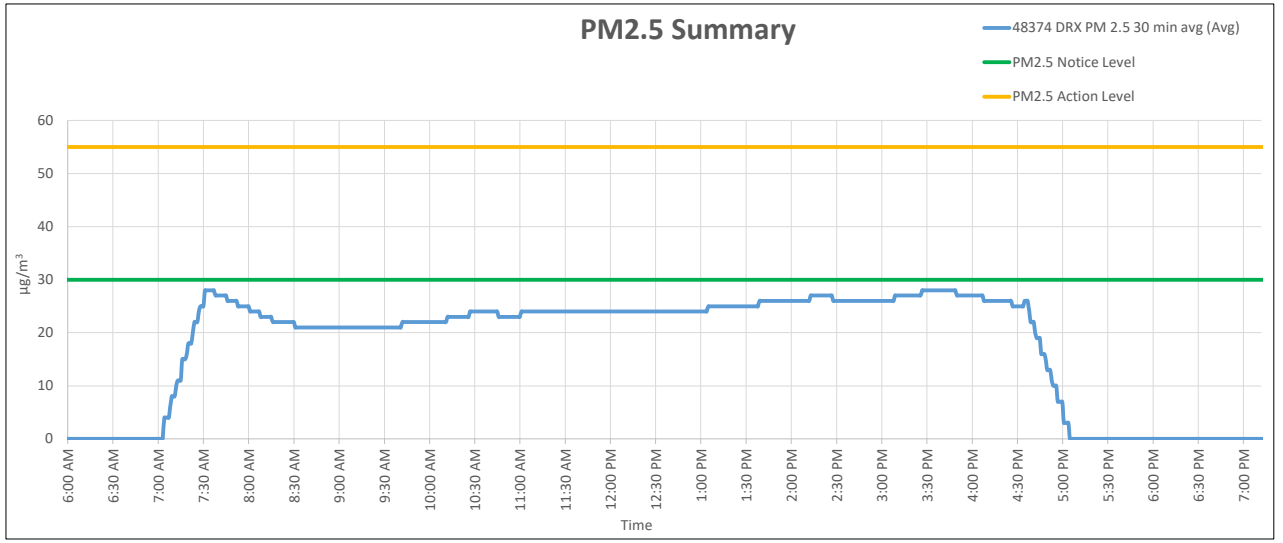




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

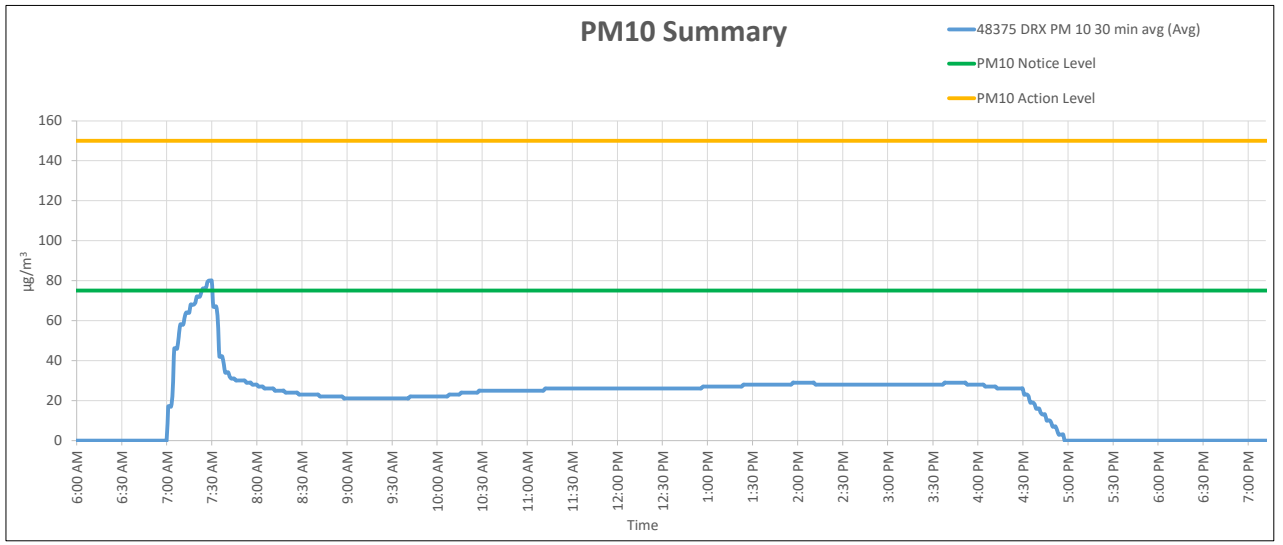
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48374	7:04 AM	5:04 PM	26.29	31.00	23.43	28.00

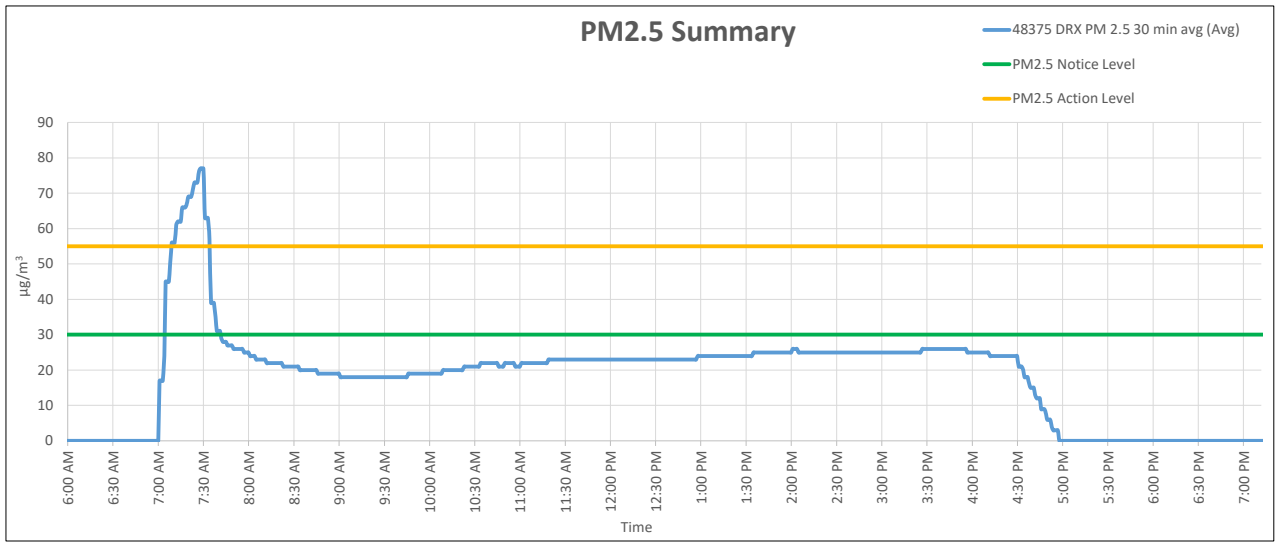




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

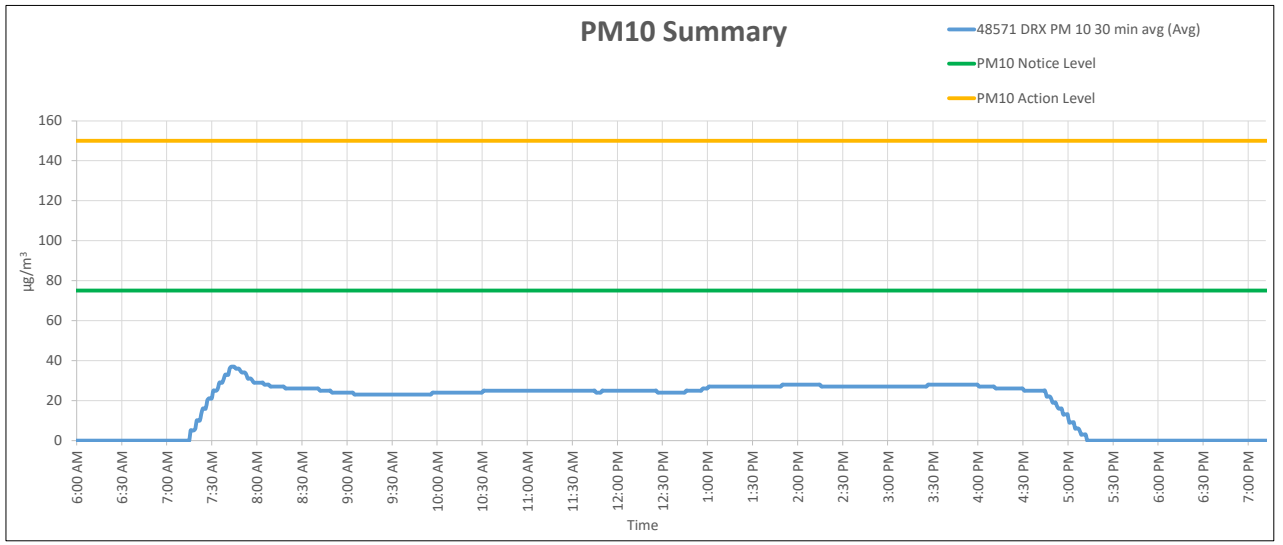
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48375	7:01 AM	4:57 PM	27.37	80.00	24.50	77.00

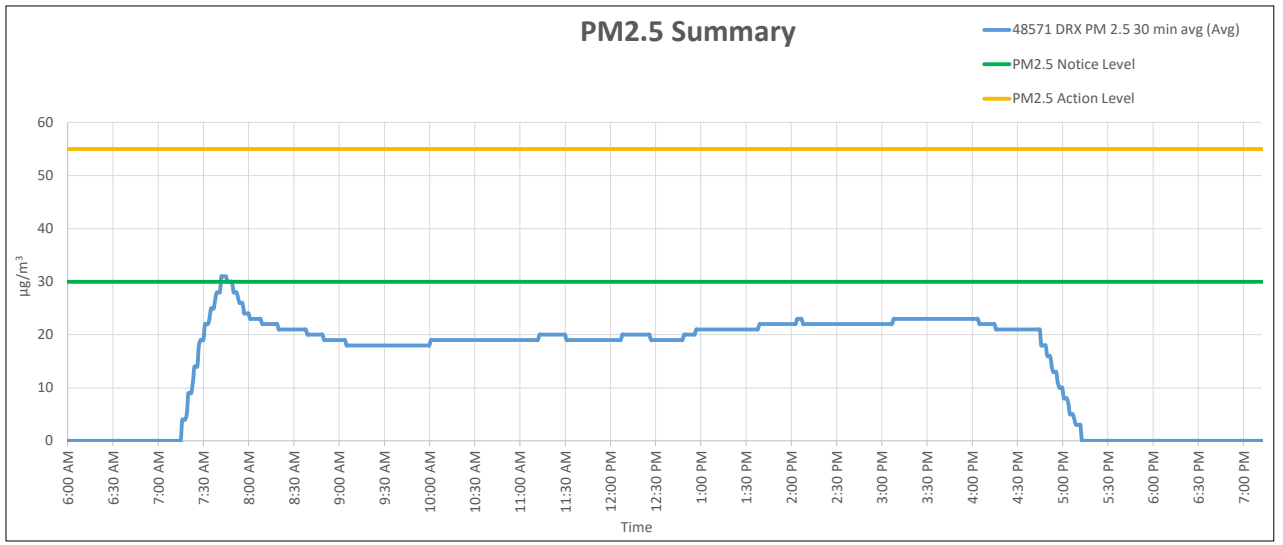




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

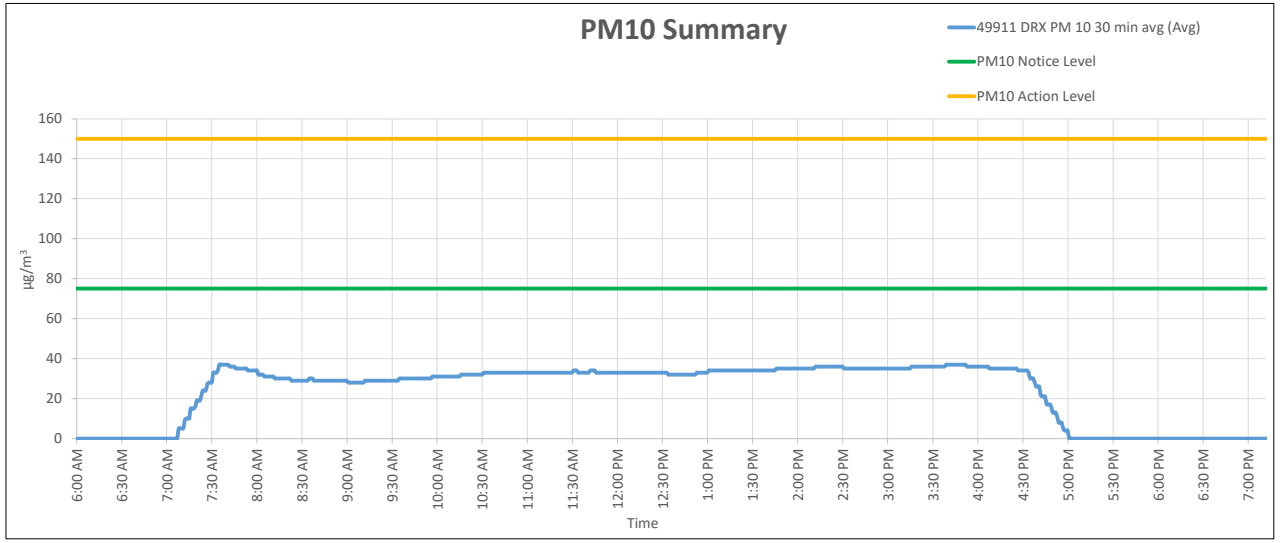
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48571	7:16 AM	5:12 PM	25.07	37.00	20.11	31.00

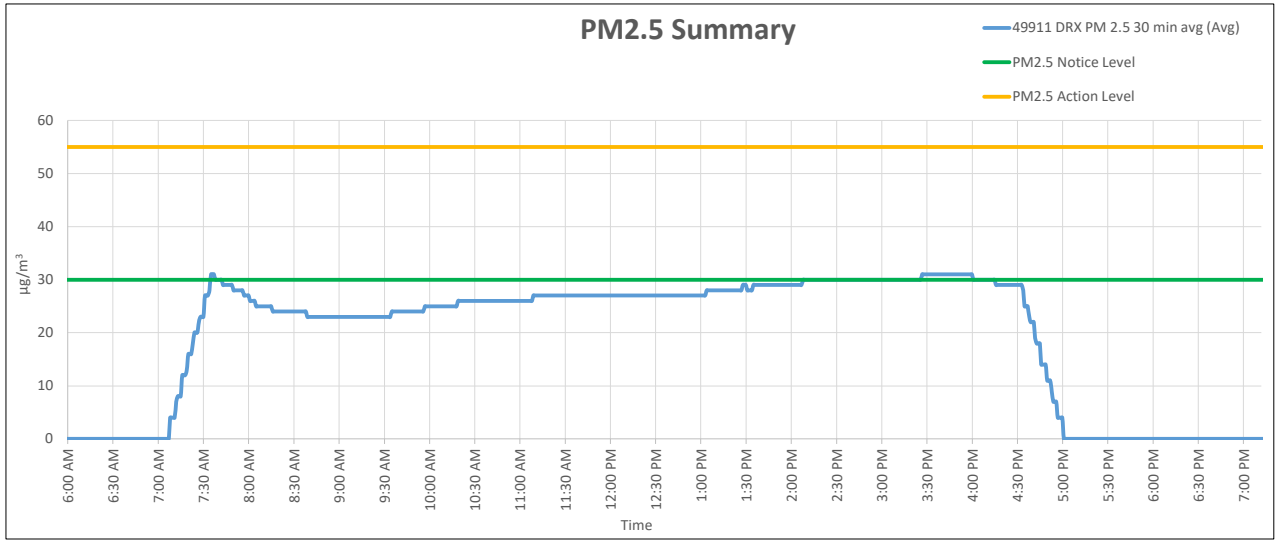




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

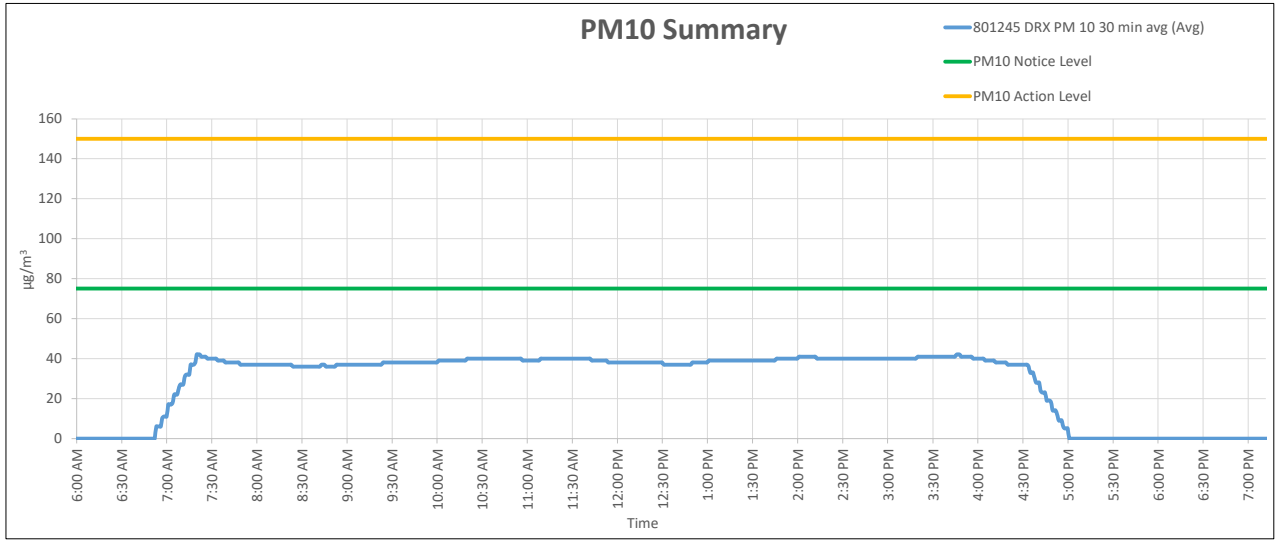
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
49911	7:08 AM	5:00 PM	31.73	37.00	26.13	31.00

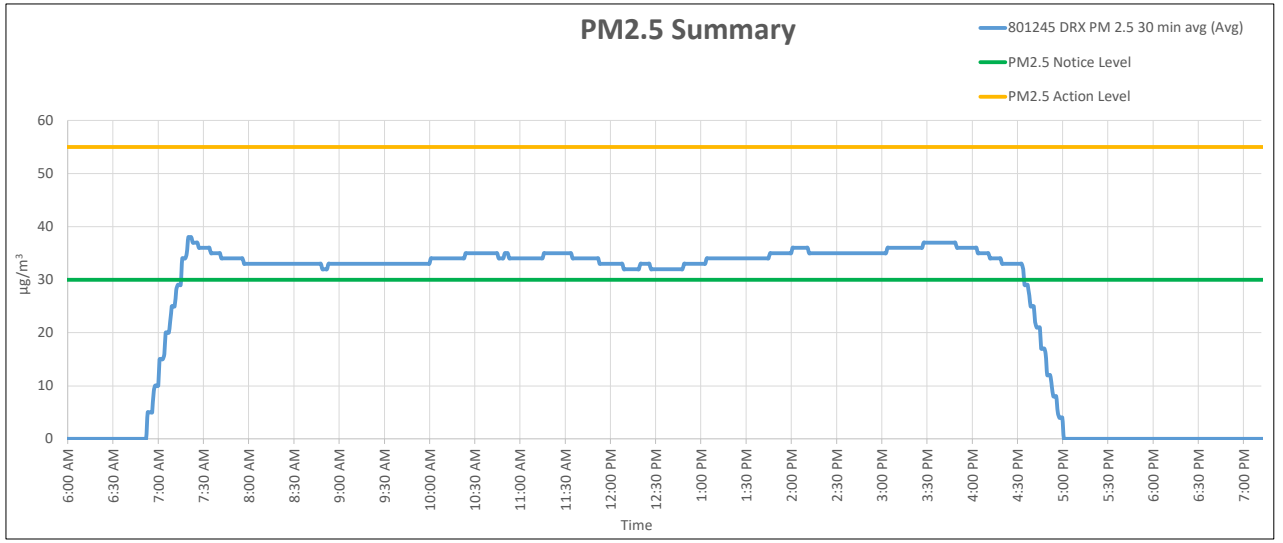




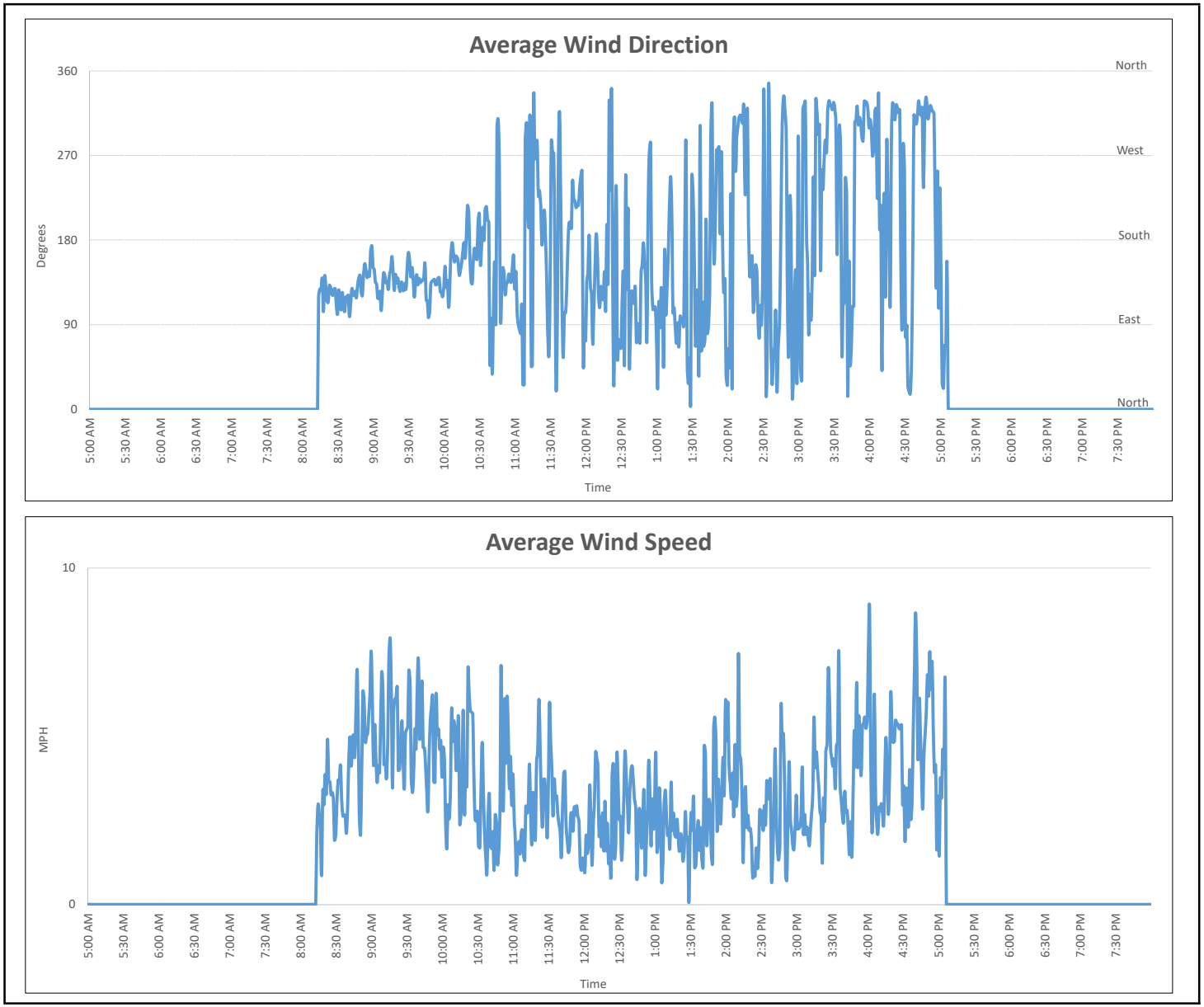
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, July 1, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
801245	6:53 AM	5:00 PM	37.19	42.00	32.75	38.00

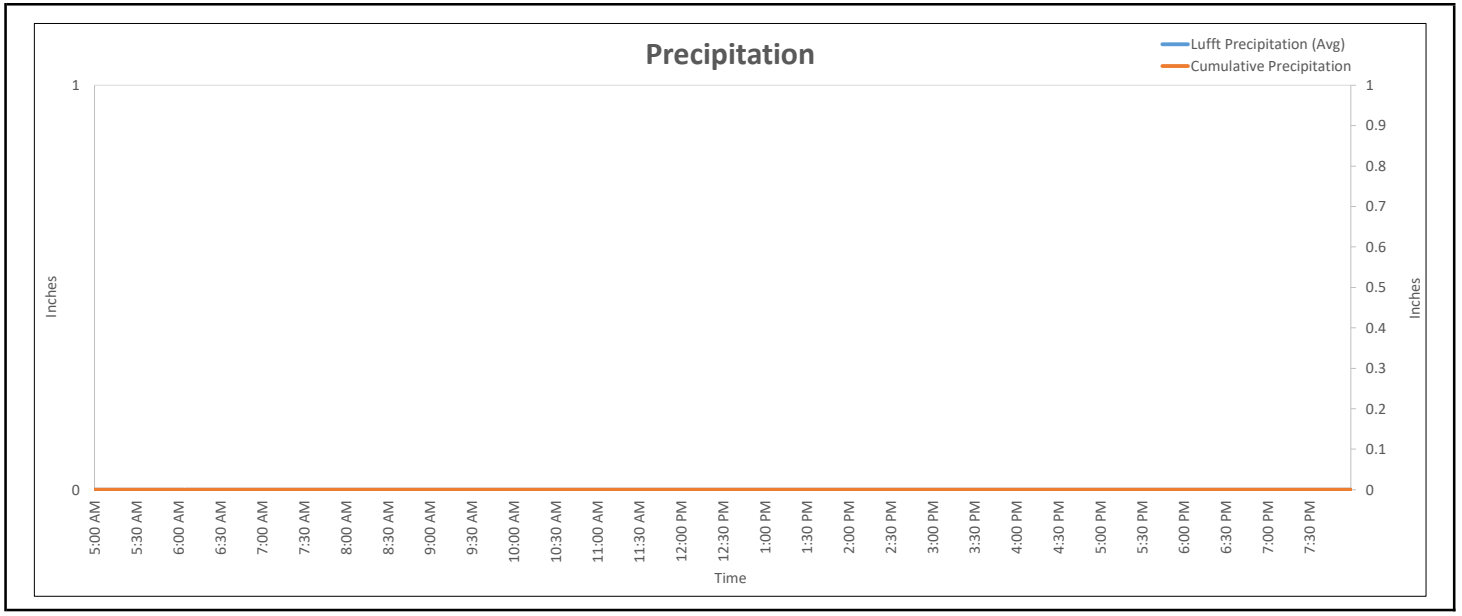




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Tuesday, July 2, 2024

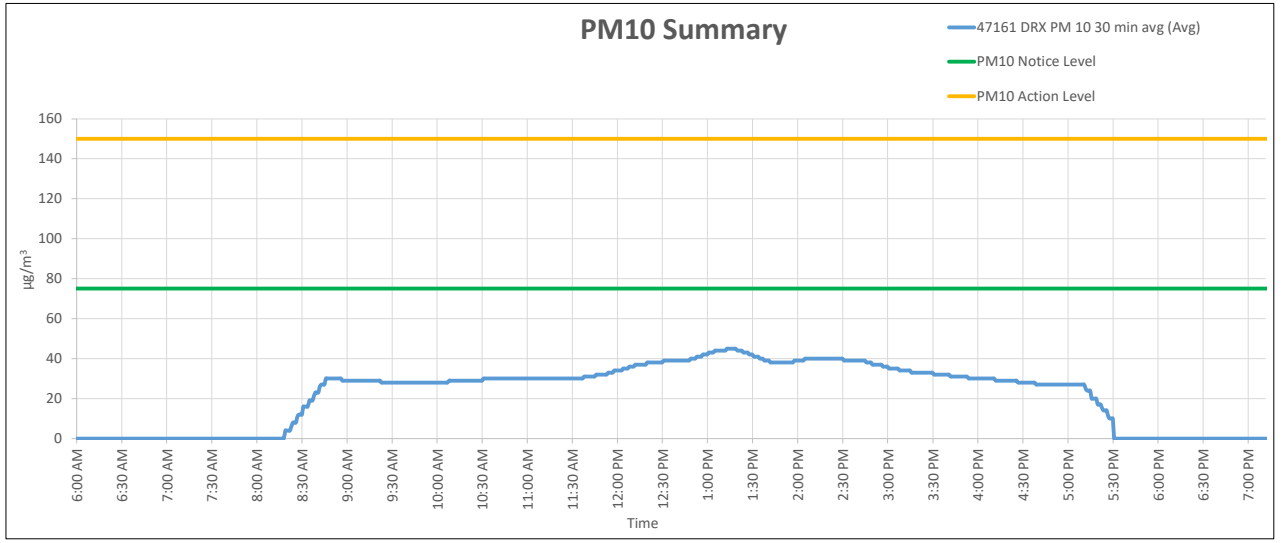


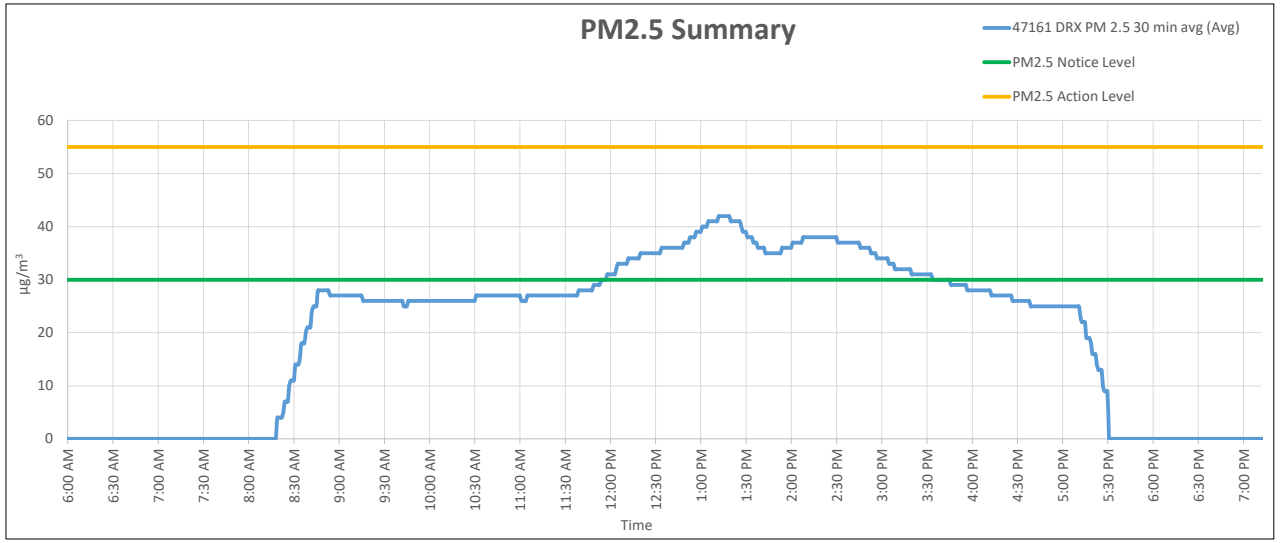
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Tuesday, July 2, 2024



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Tuesday, July 2, 2024

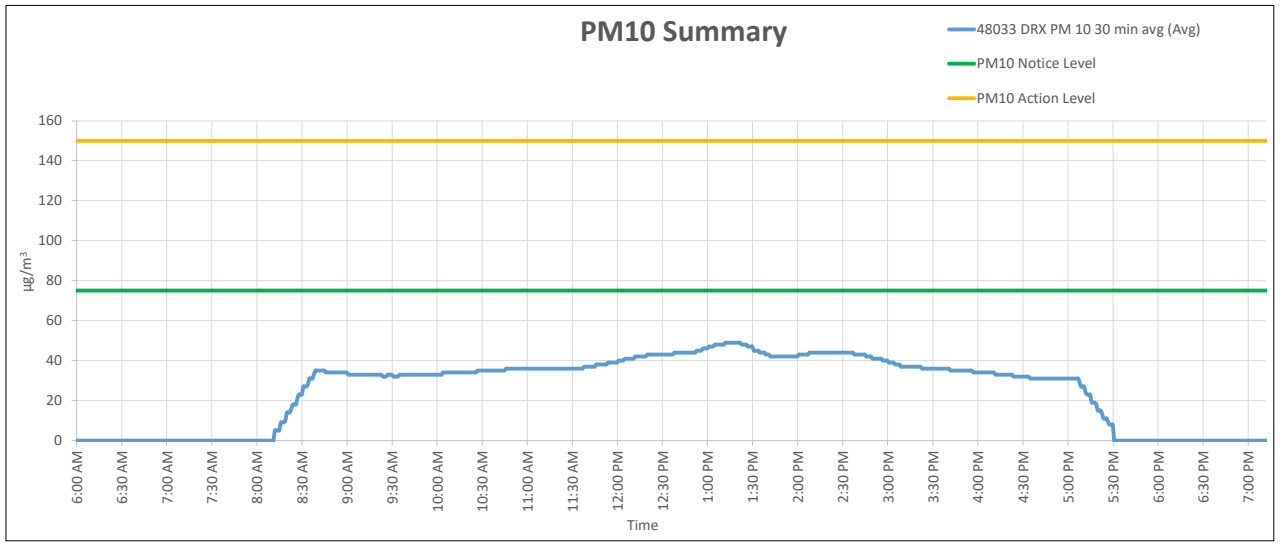
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
47161	8:19 AM	5:30 PM	31.78	45.00	29.43	42.00

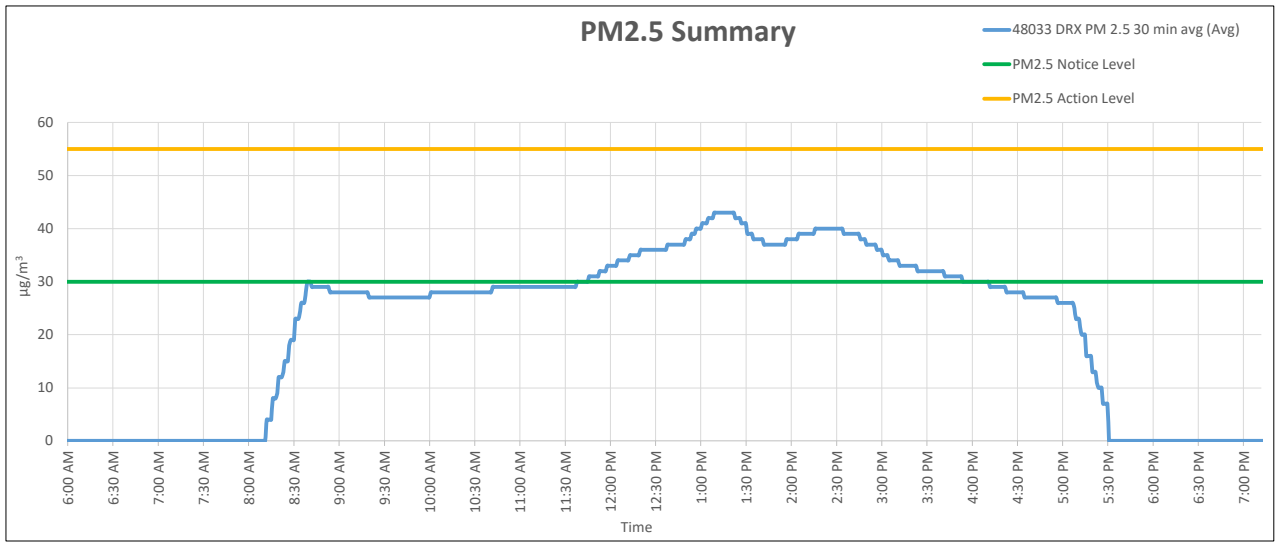




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Tuesday, July 2, 2024

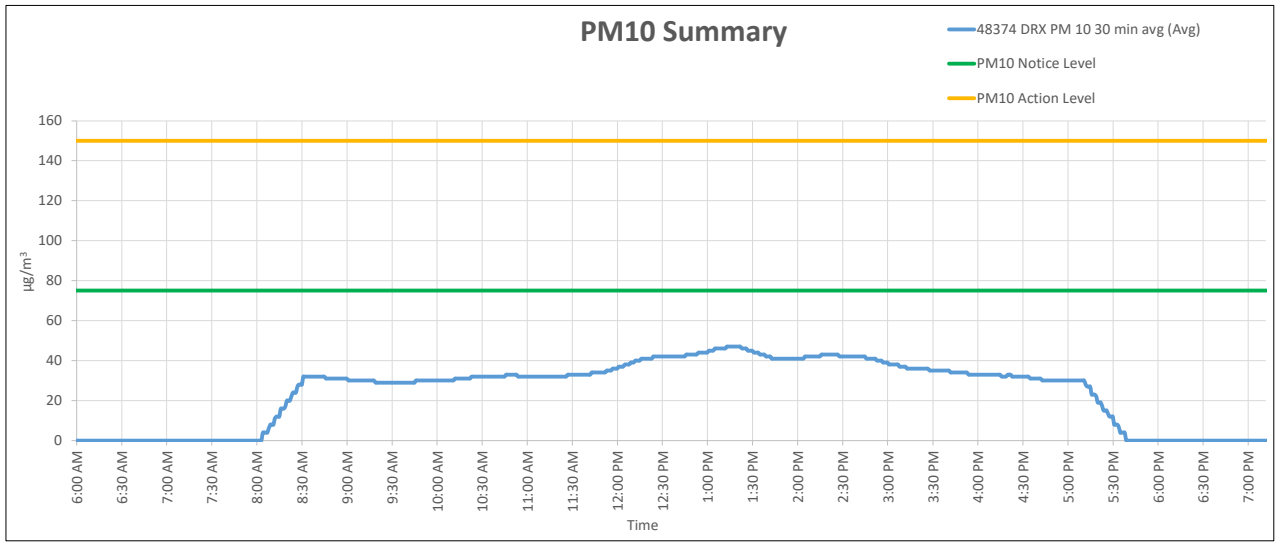
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48033	8:12 AM	5:30 PM	35.99	49.00	30.79	43.00

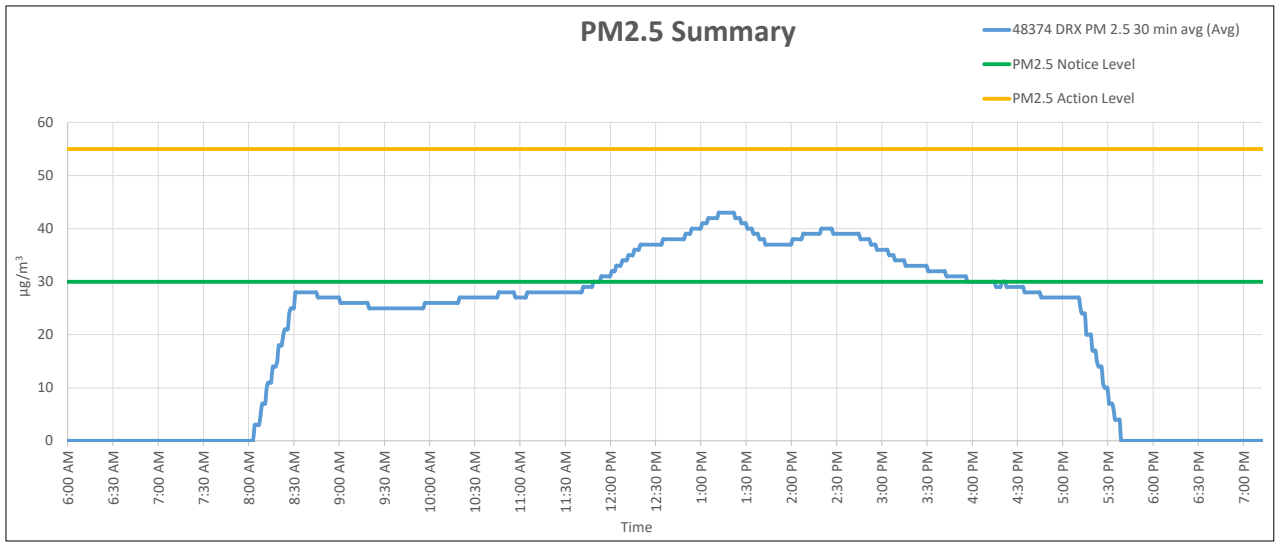




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Tuesday, July 2, 2024

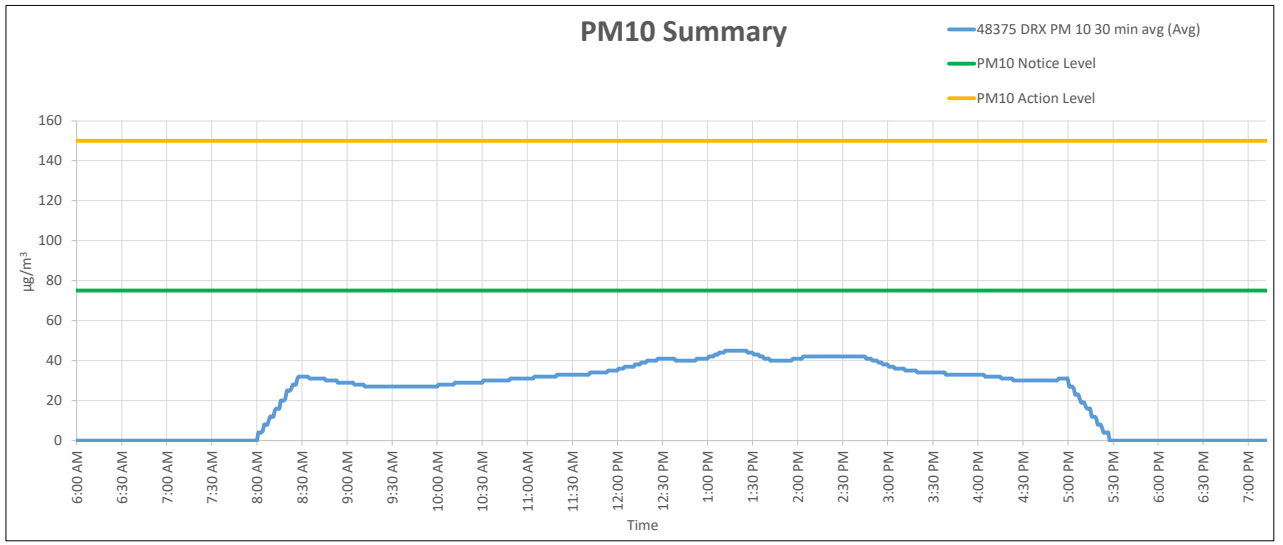
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48374	8:04 AM	5:38 PM	33.73	47.00	30.10	43.00

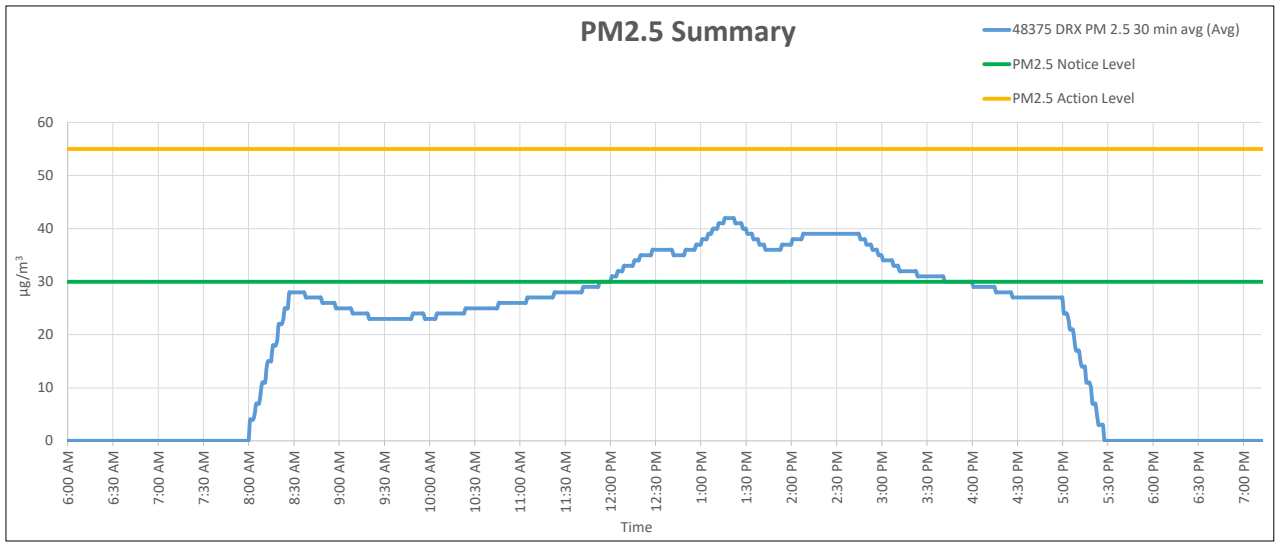




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Tuesday, July 2, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48375	8:01 AM	5:27 PM	32.73	45.00	29.08	42.00





Union Pacific Railroad
Houston Wood Preserving Works Site
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Air Monitoring Values
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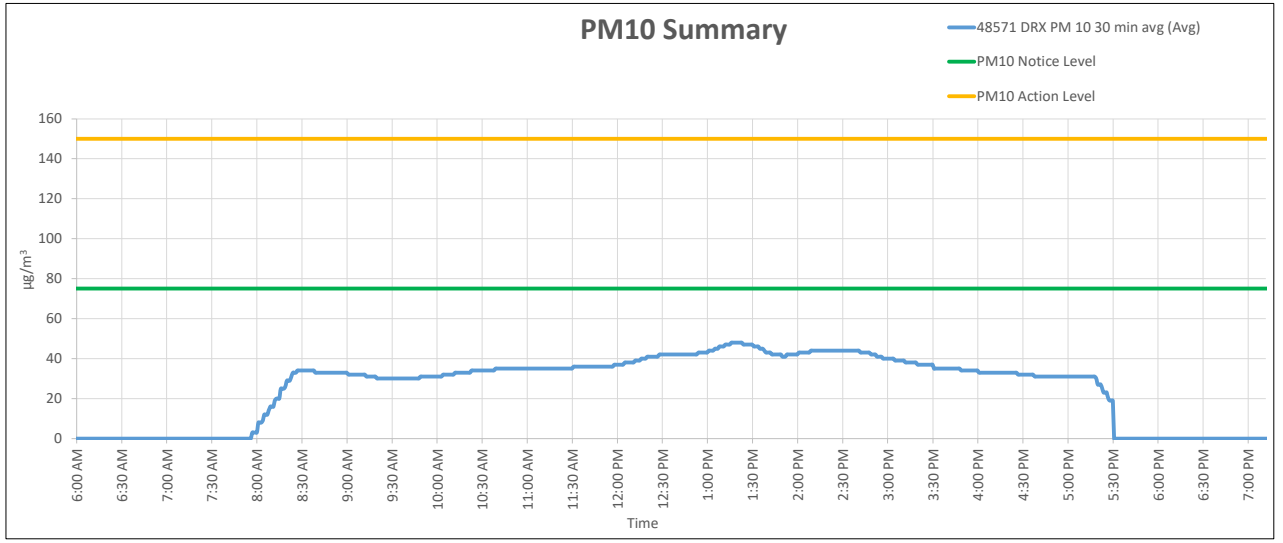
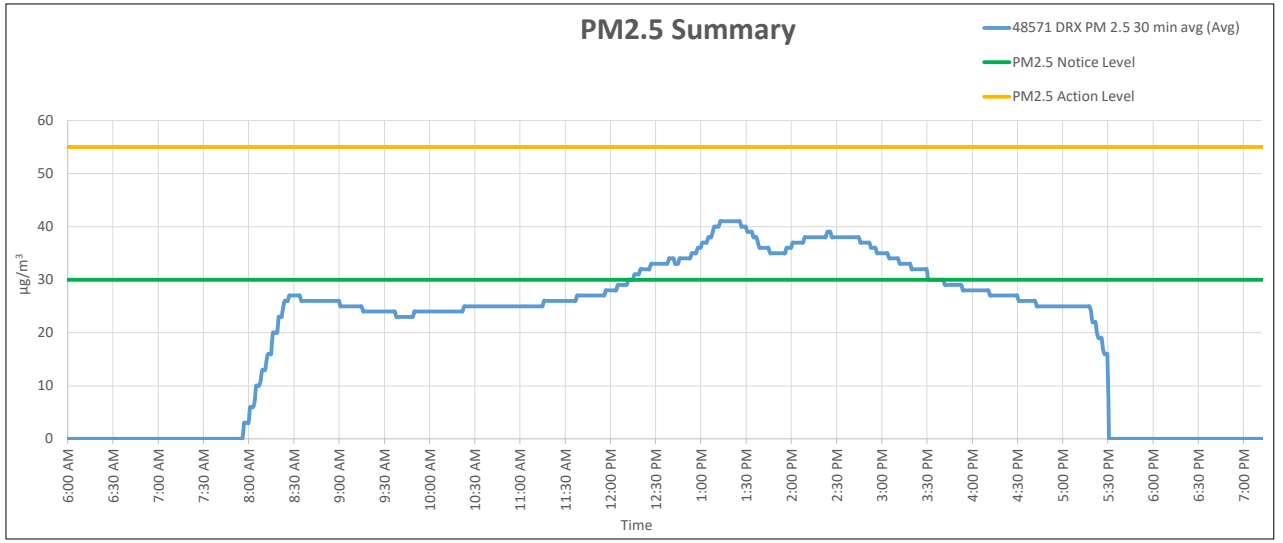
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48571	7:57 AM	5:30 PM	35.44	48.00	28.60	41.00





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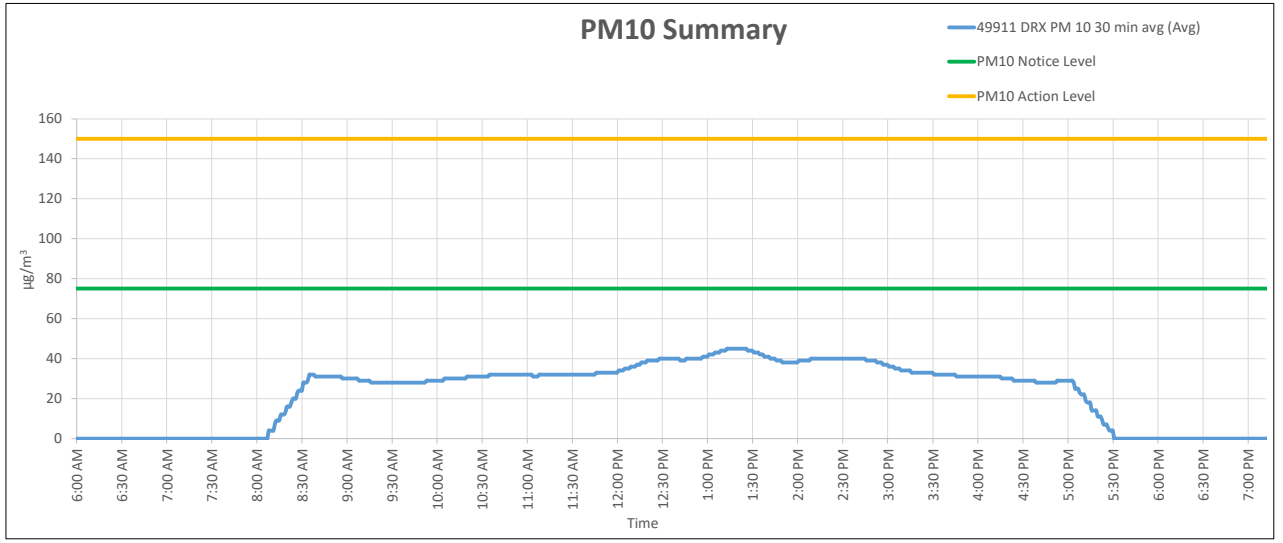
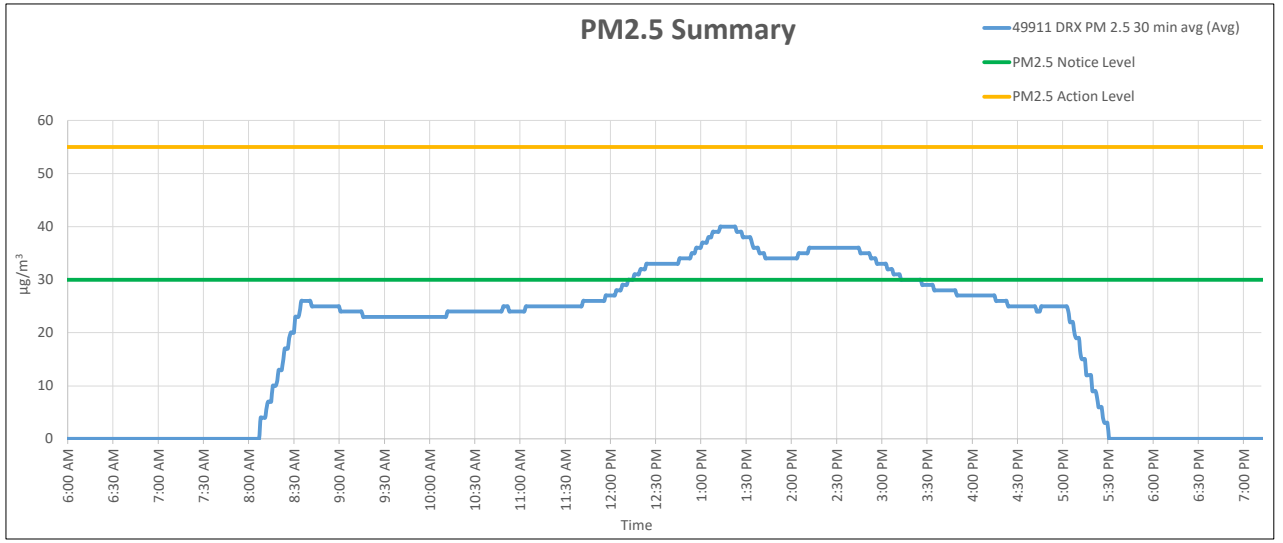
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
49911	8:08 AM	5:30 PM	32.25	45.00	27.23	40.00





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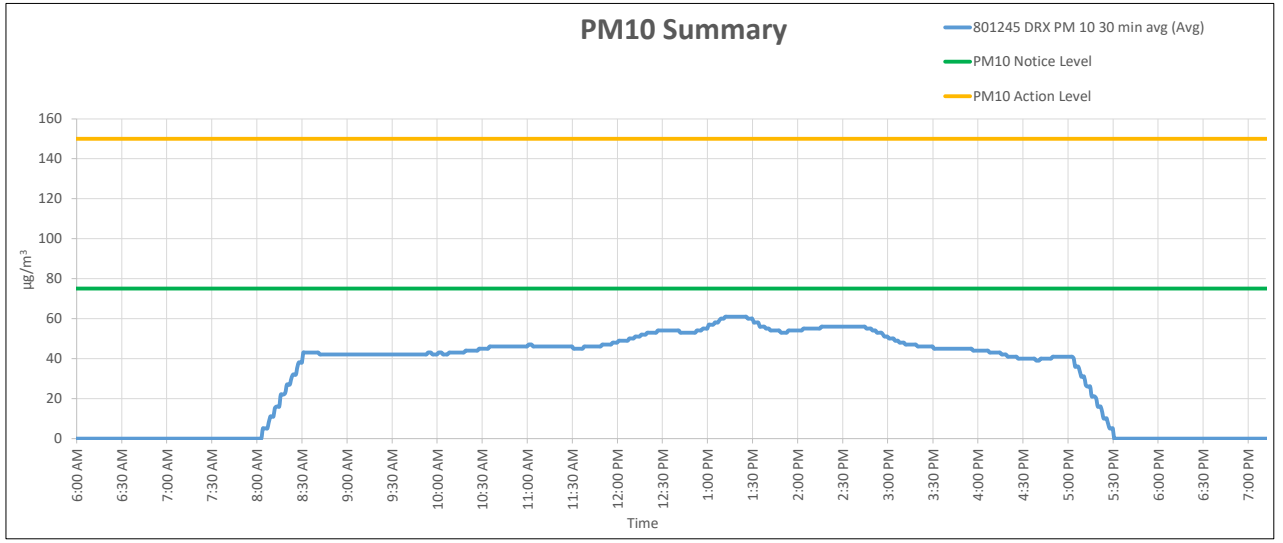
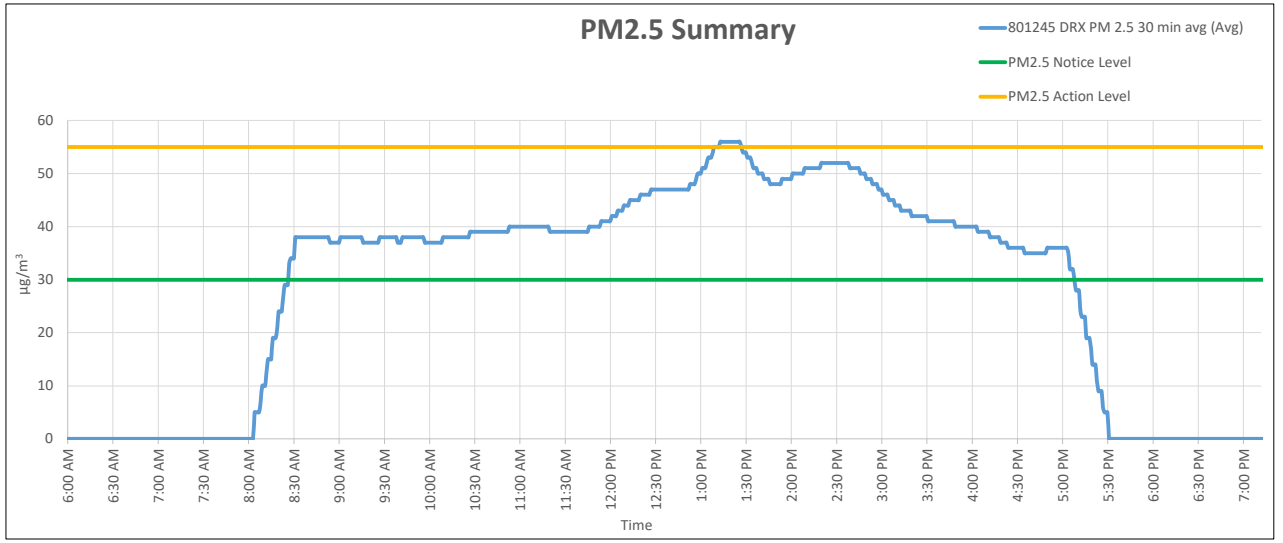
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
801245	8:04 AM	5:30 PM	45.23	61.00	40.34	56.00





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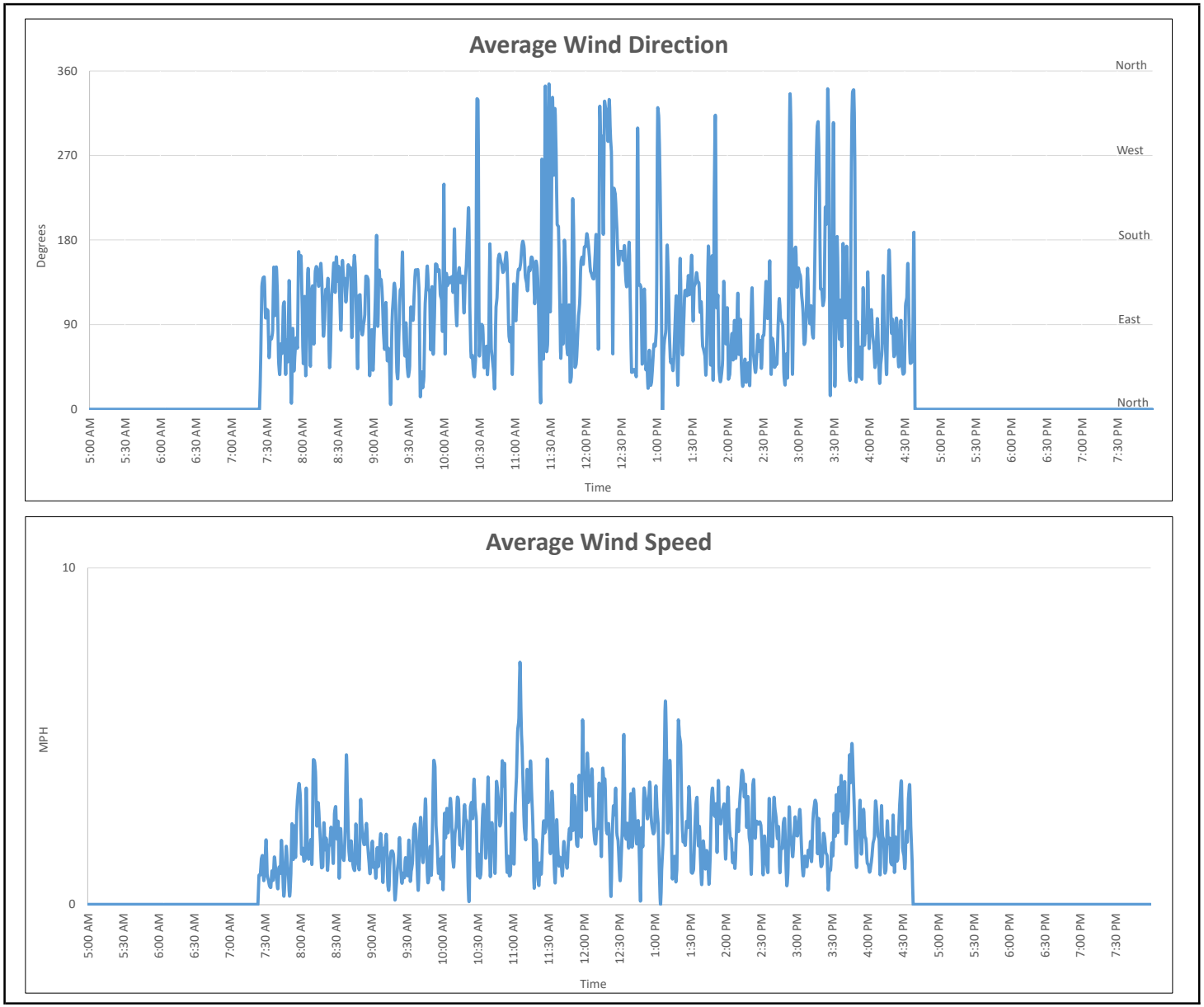

Union Pacific Railroad
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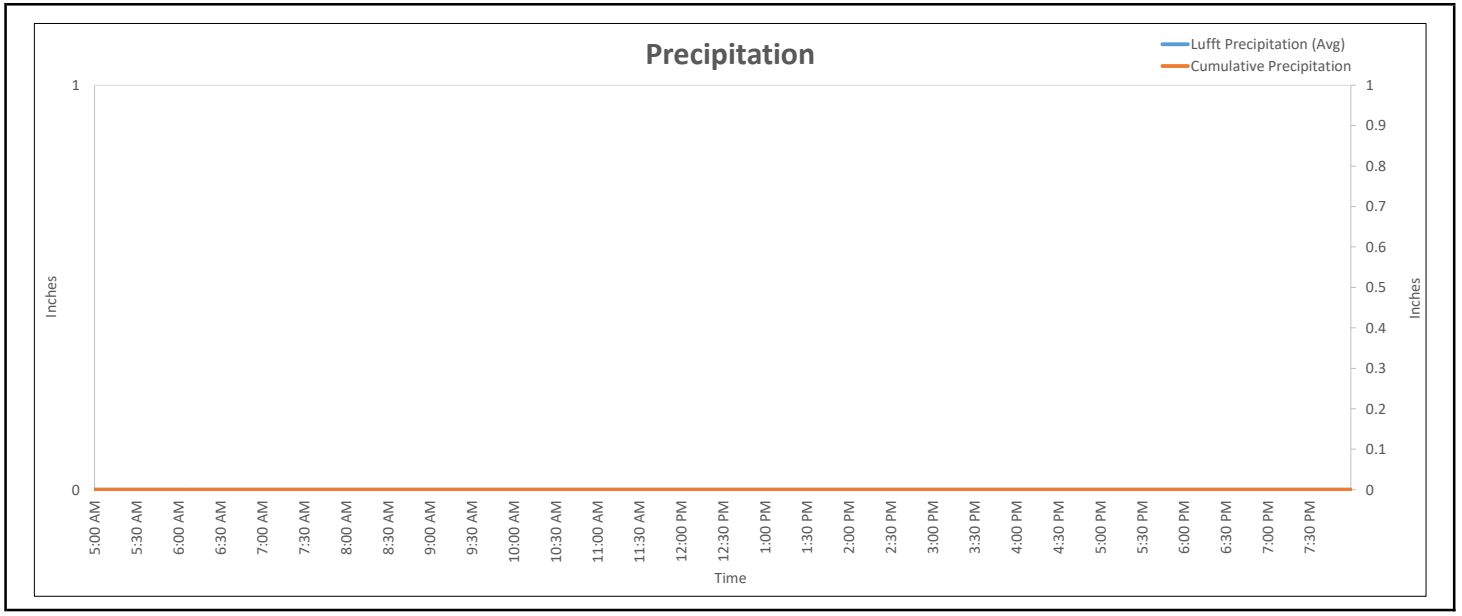

Union Pacific Railroad
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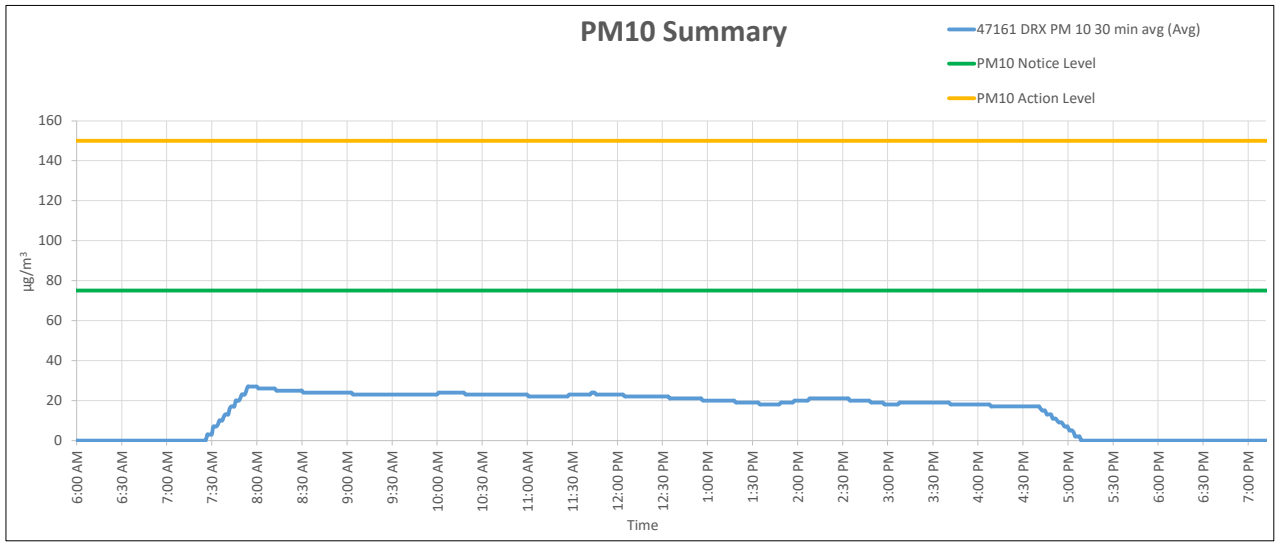
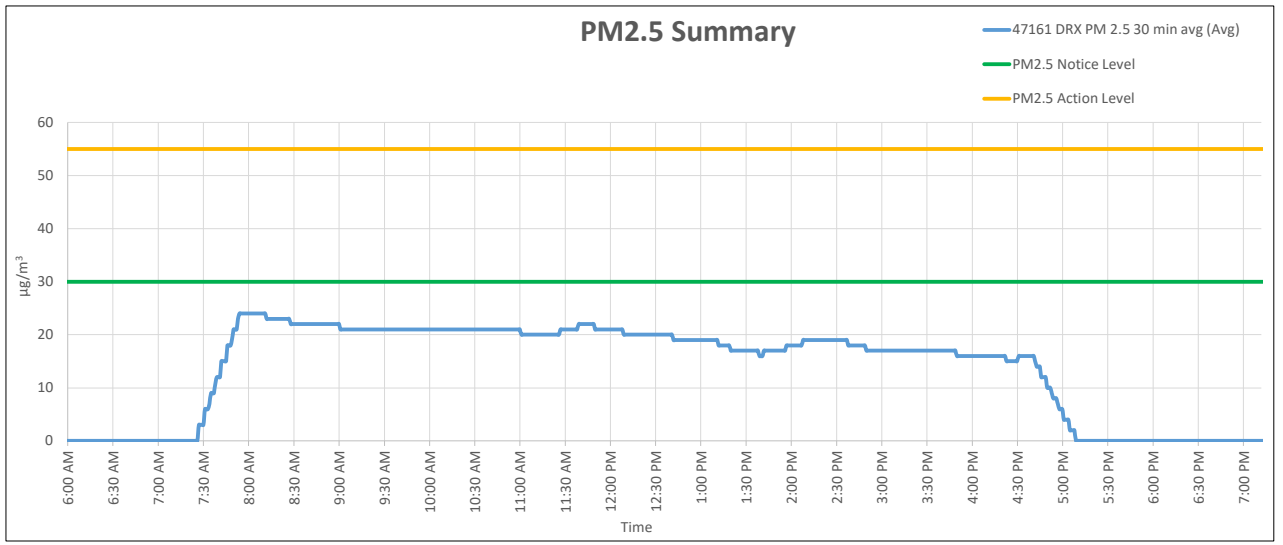
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
47161	7:27 AM	5:08 PM	20.42	27.00	18.62	24.00





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Air Monitoring Values
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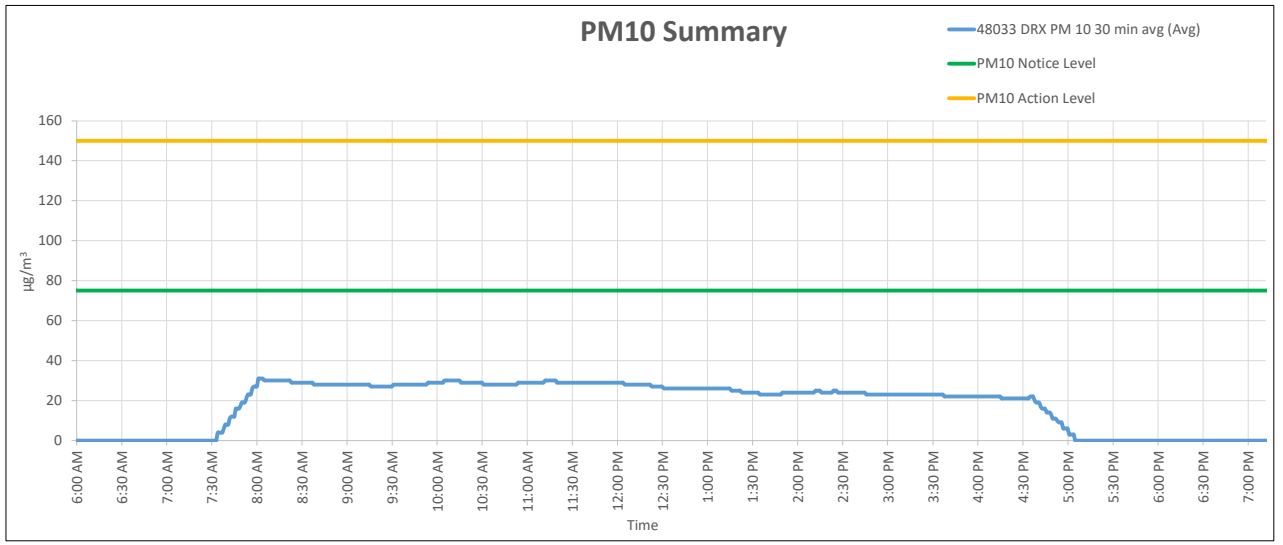
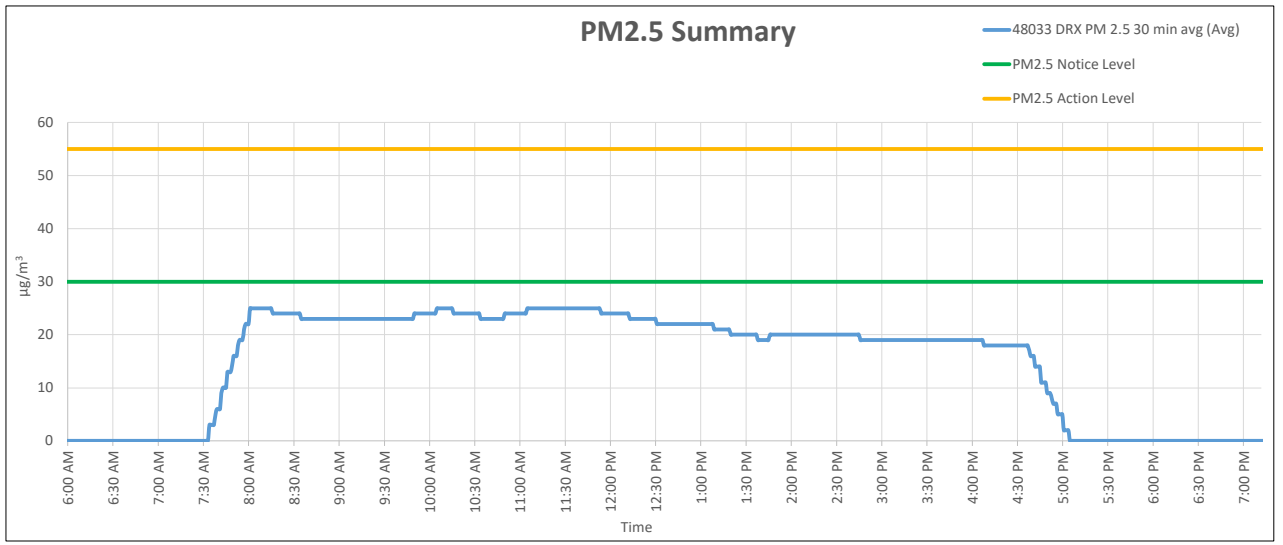
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48033	7:34 AM	5:04 PM	24.99	31.00	20.86	25.00





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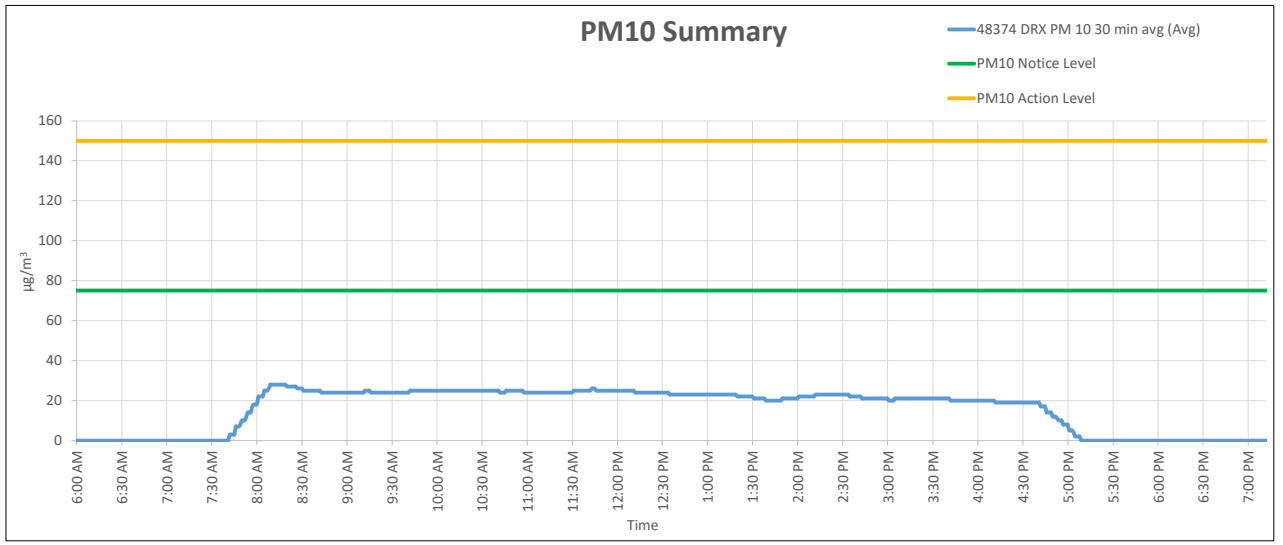
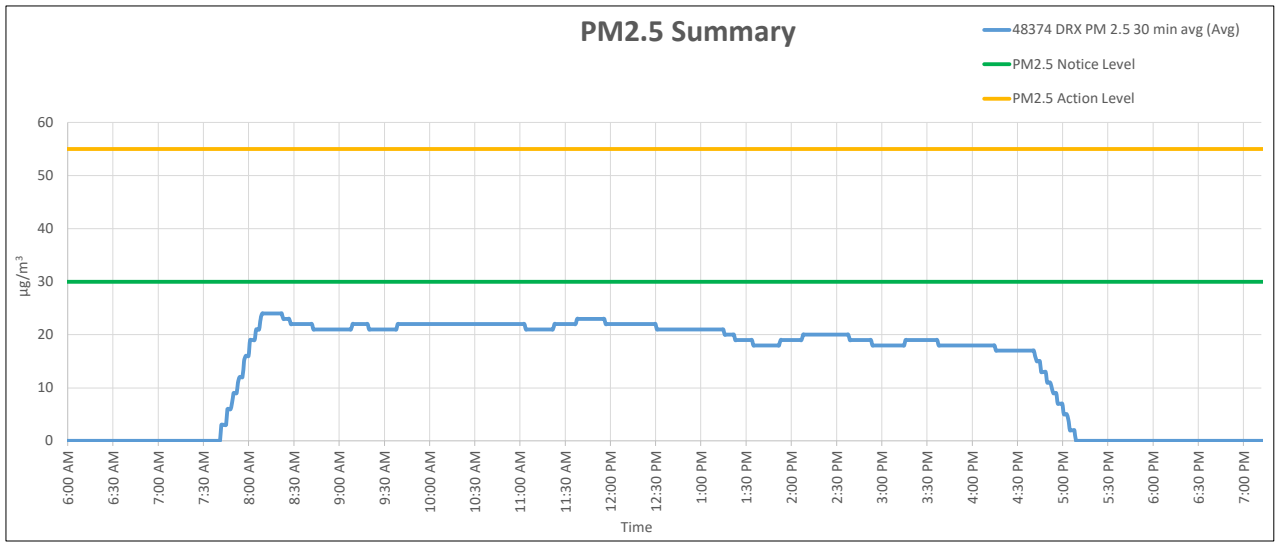
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48374	7:42 AM	5:08 PM	22.01	28.00	19.56	24.00





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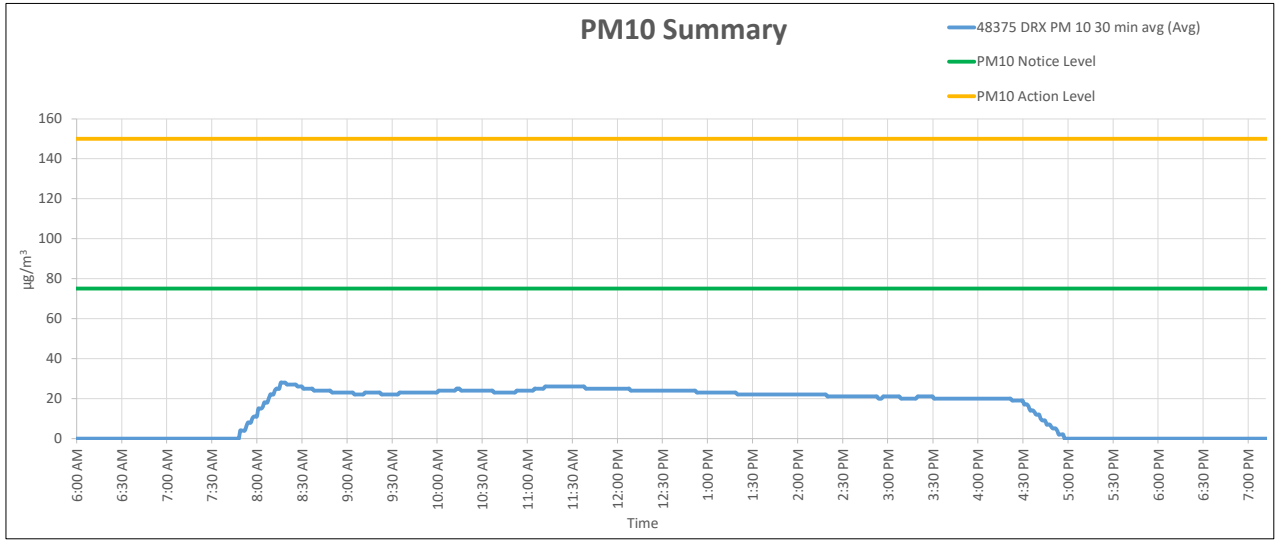
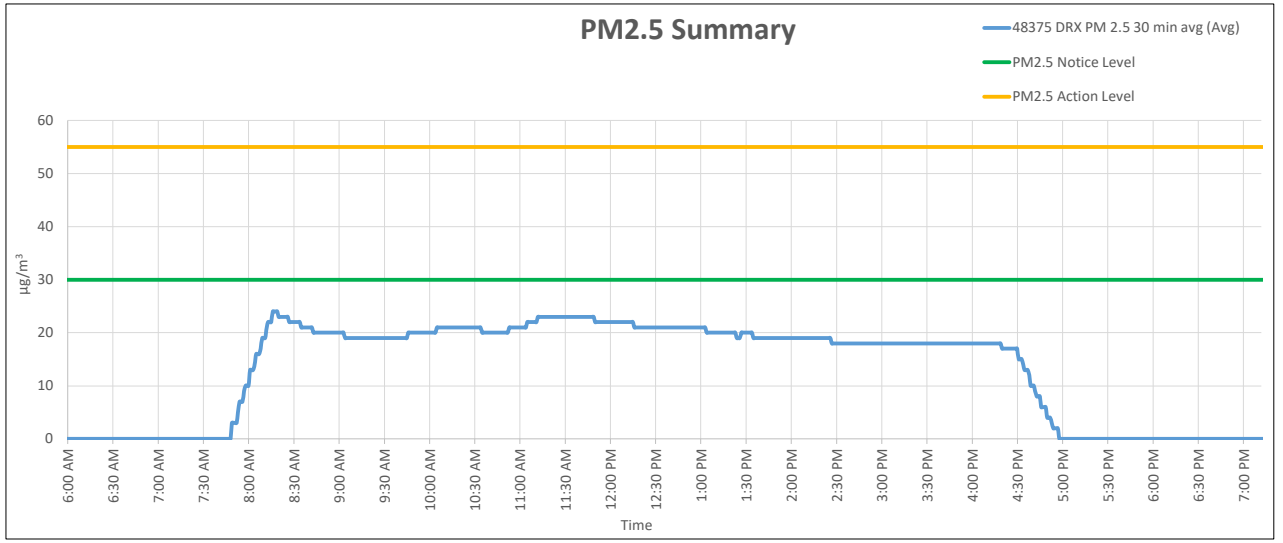
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48375	7:49 AM	4:57 PM	21.74	28.00	19.01	24.00





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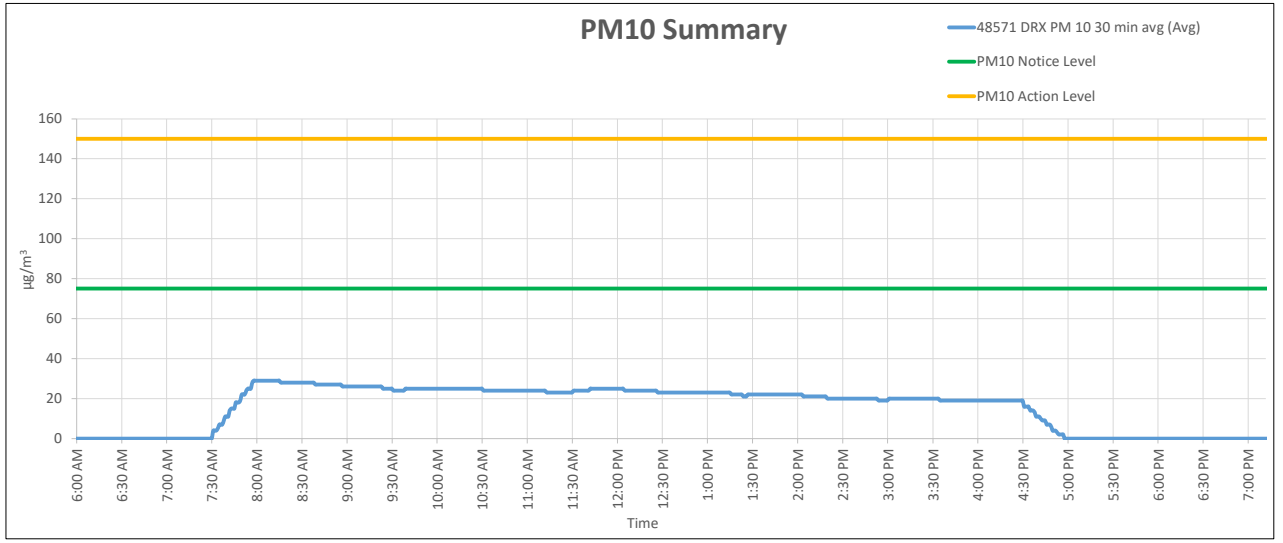
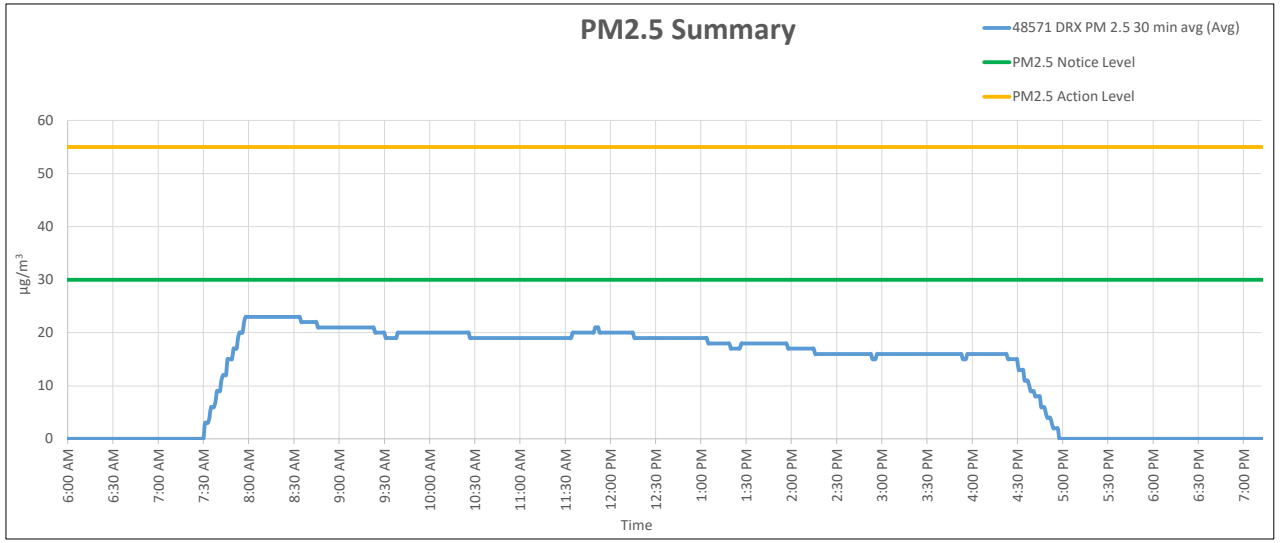
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48571	7:31 AM	4:57 PM	22.09	29.00	17.84	23.00





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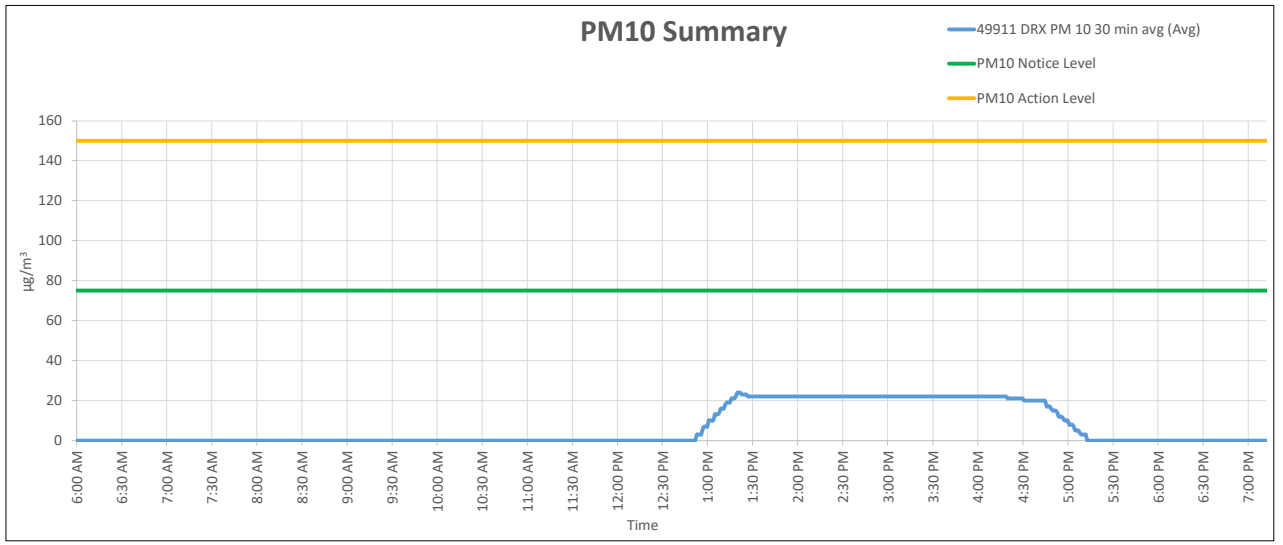
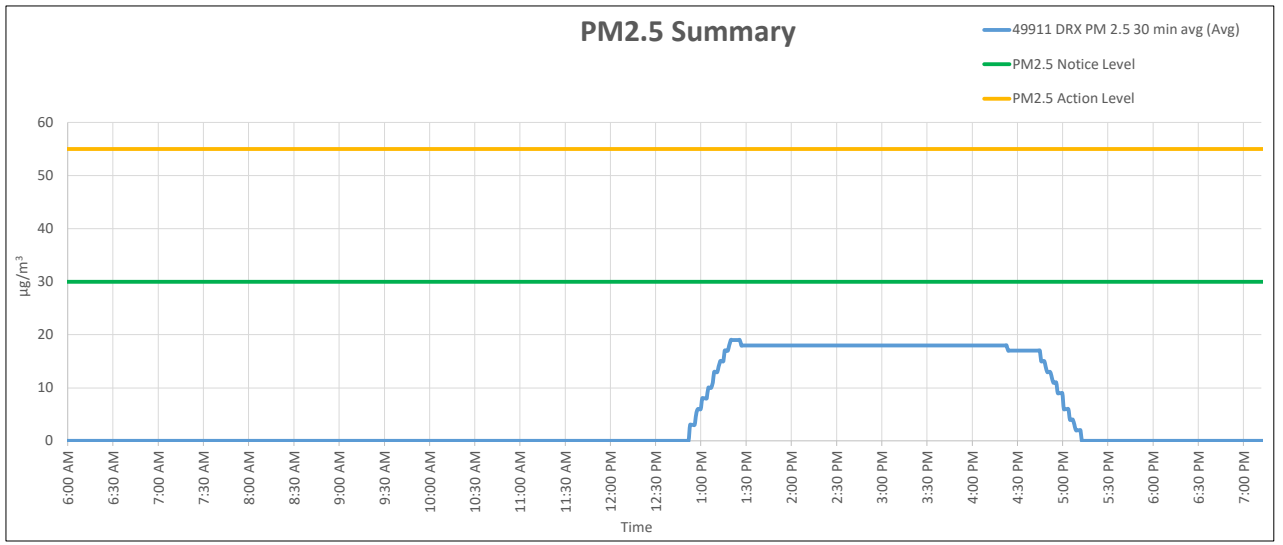
Wednesday, July 3, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
49911	12:53 PM	5:12 PM	19.64	24.00	16.13	19.00





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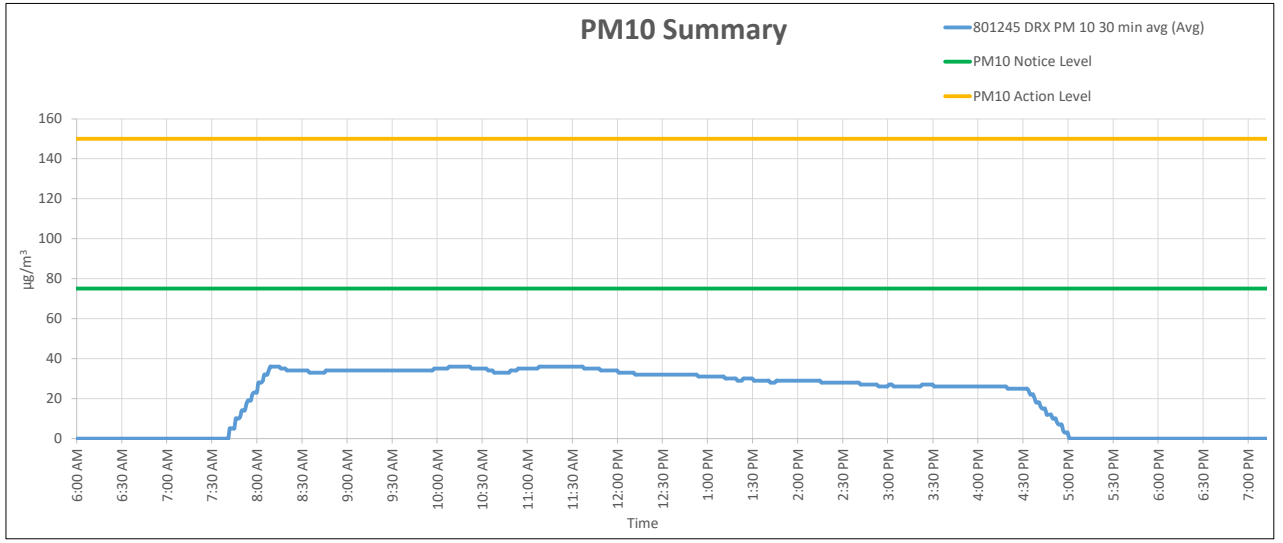
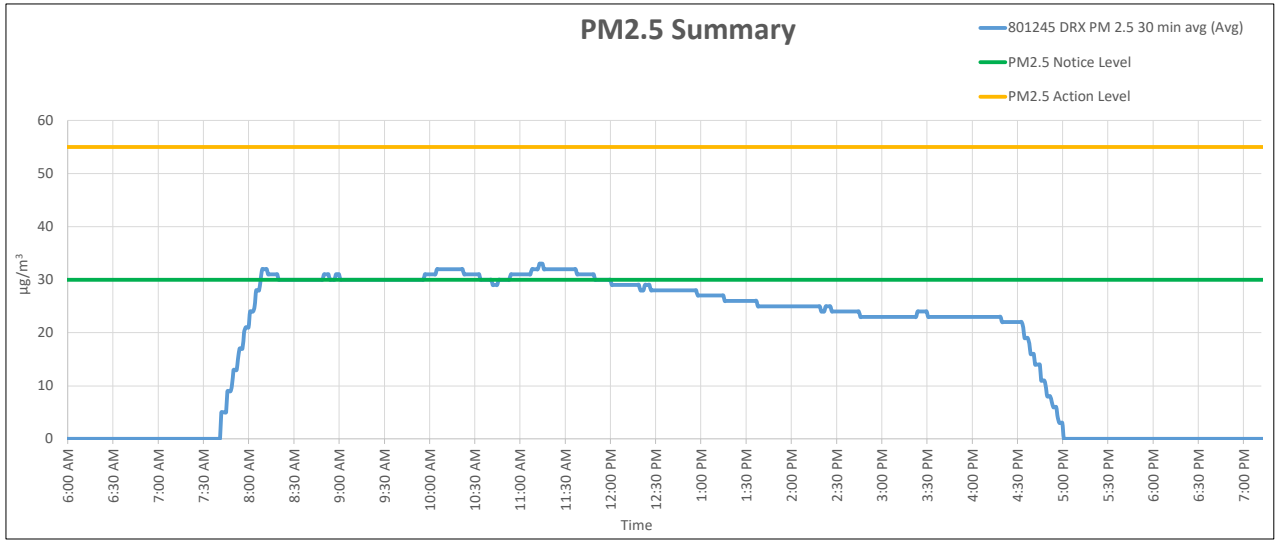
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
801245	7:42 AM	5:00 PM	29.80	36.00	26.32	33.00





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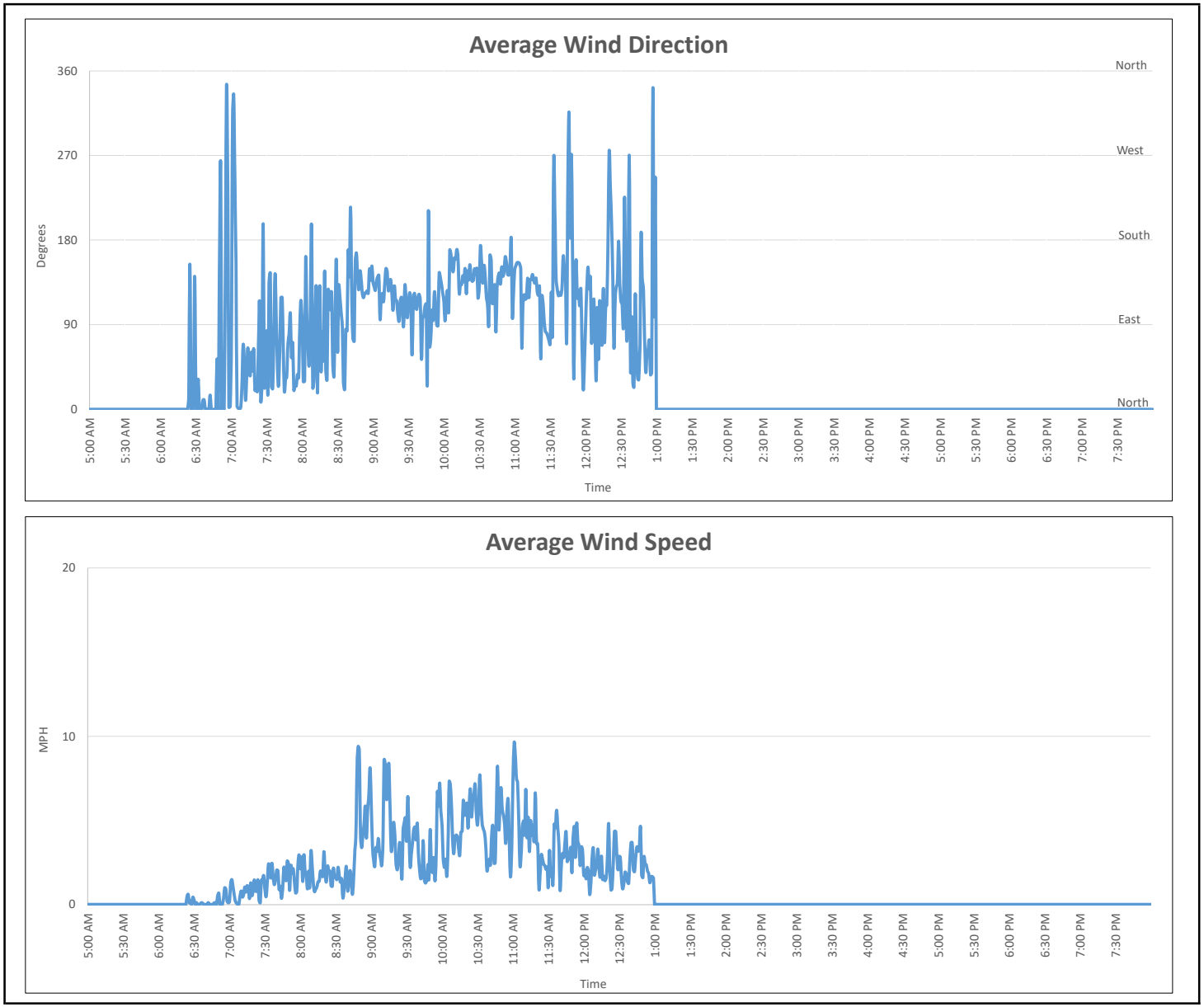

Union Pacific Railroad
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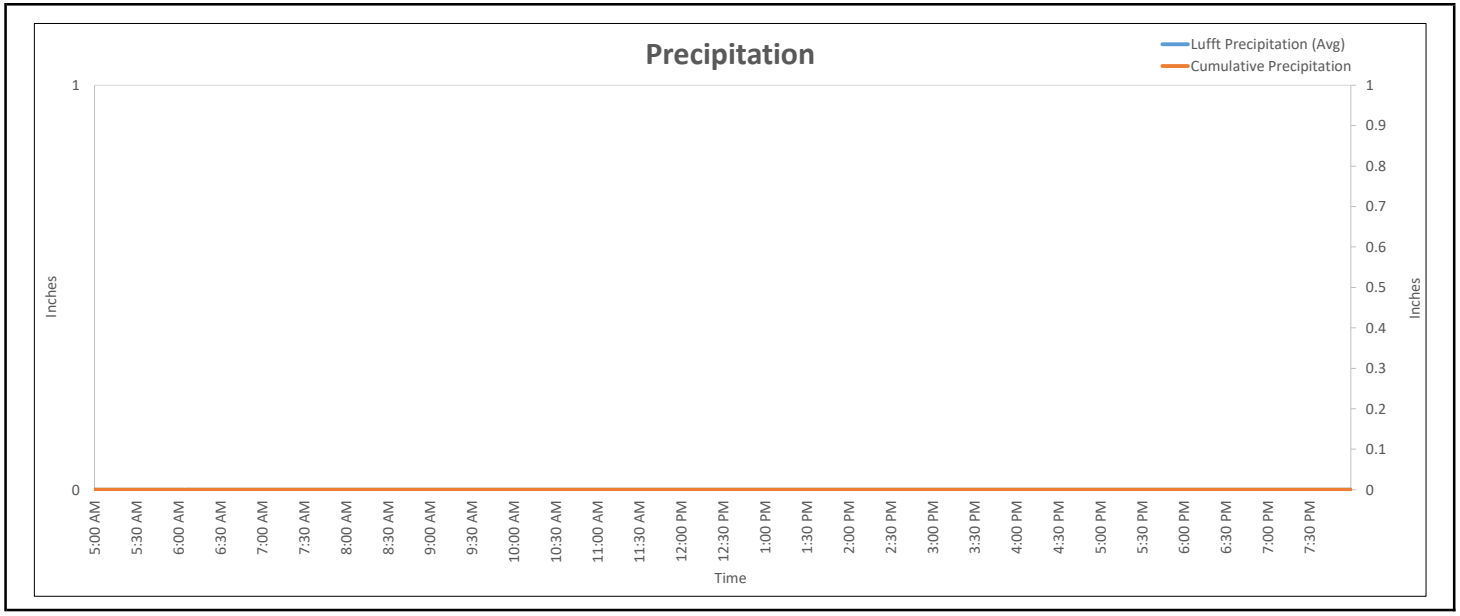
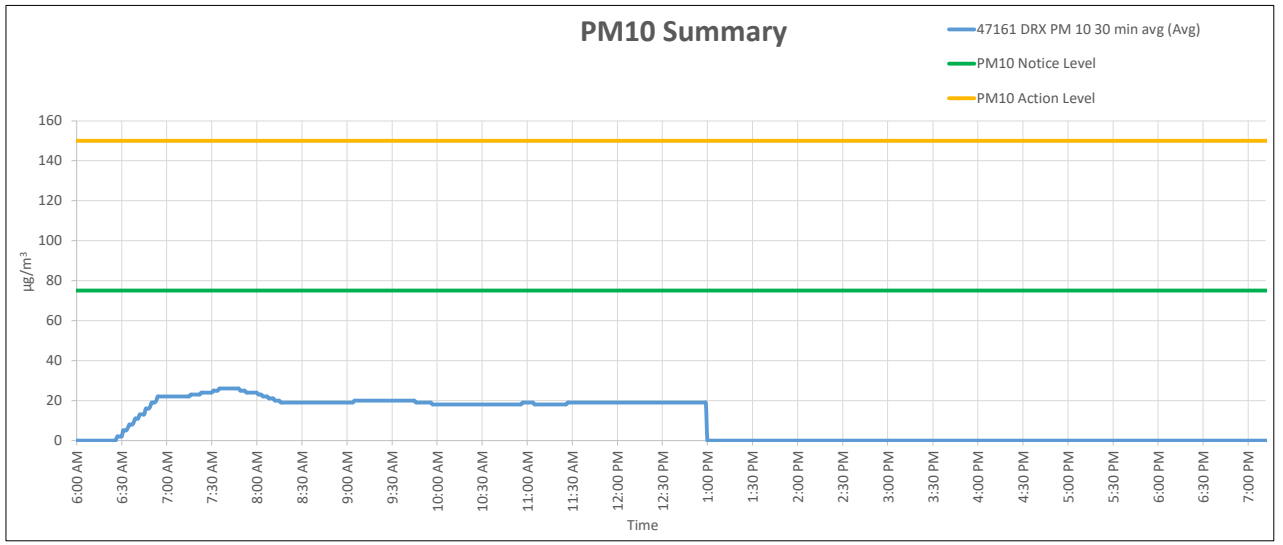
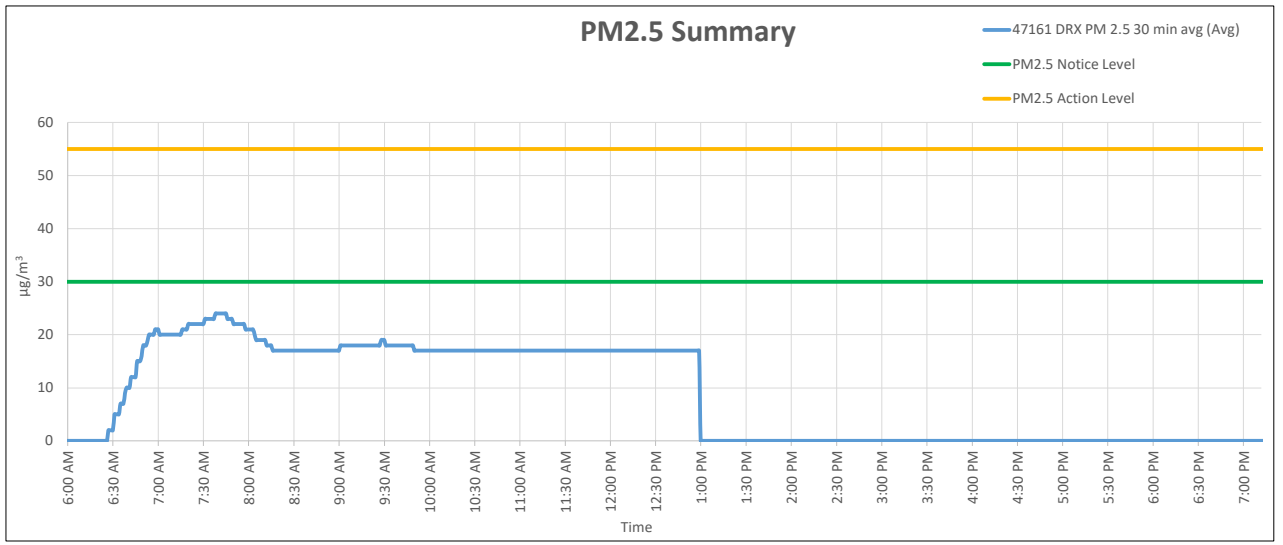


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
47161	6:27 AM	12:59 PM	19.23	26.00	17.53	24.00





Union Pacific Railroad
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Air Monitoring Values
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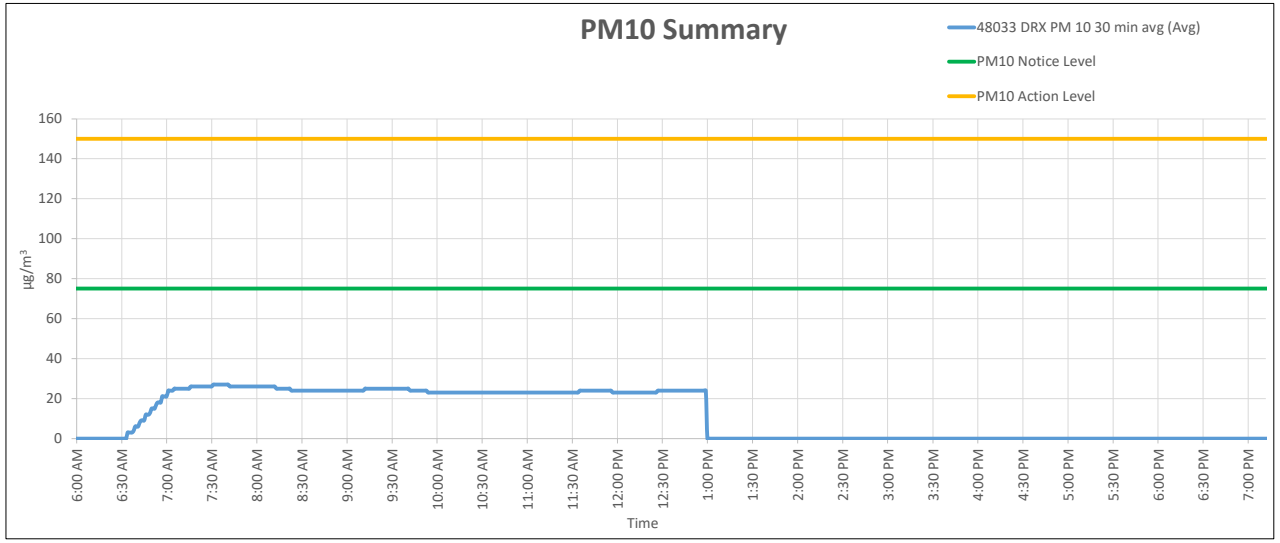
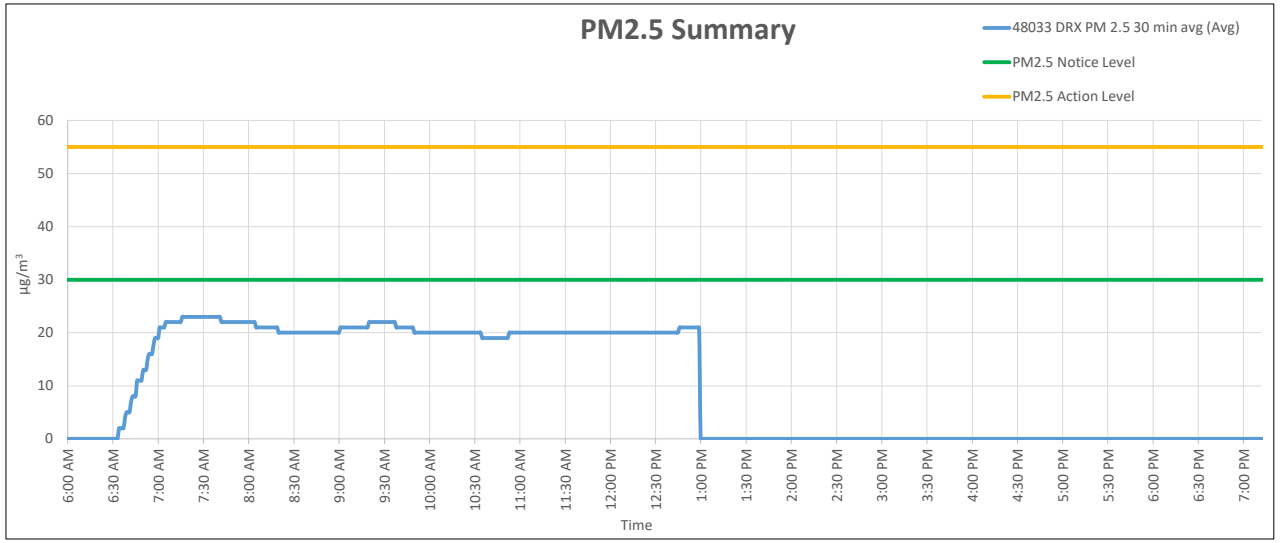
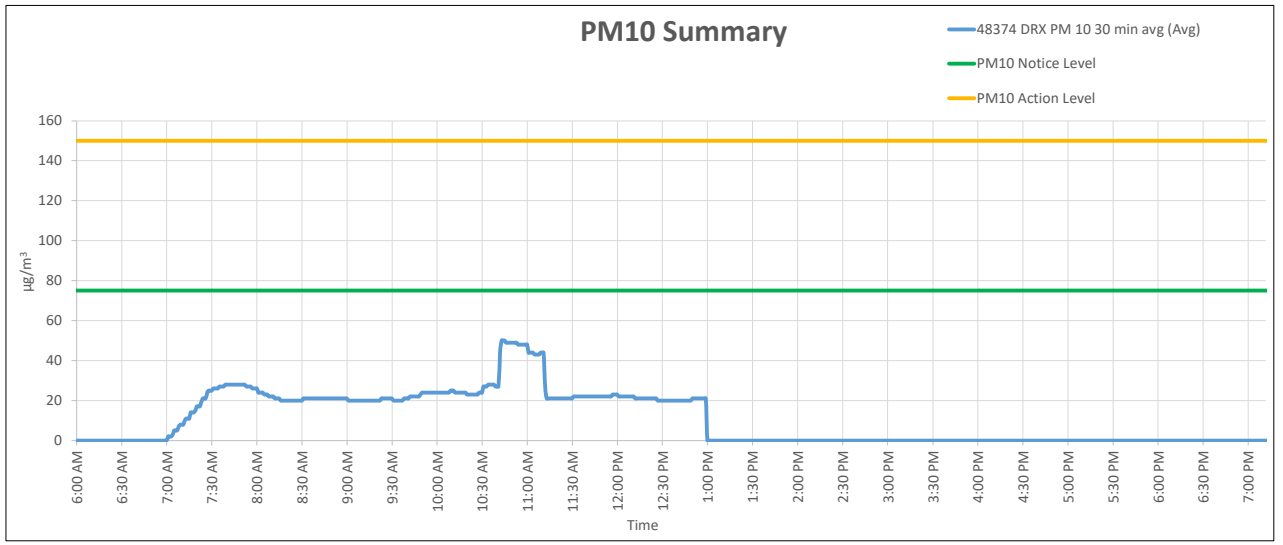
Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48033	6:34 AM	12:59 PM	23.26	27.00	19.91	23.00

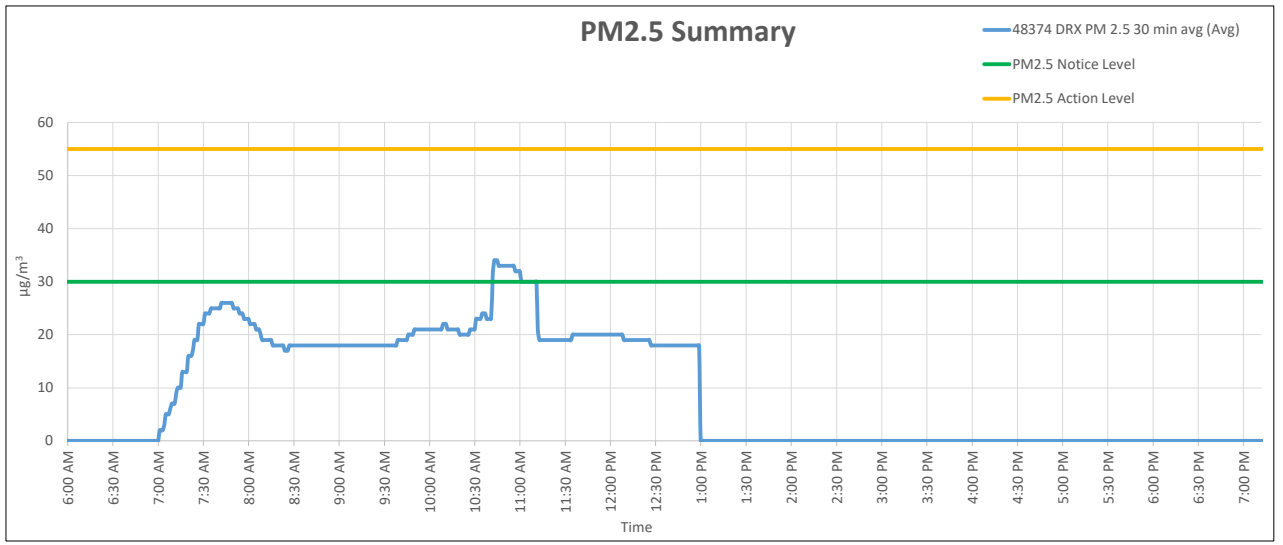




Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48374	7:01 AM	12:59 PM	23.56	50.00	20.13	34.00





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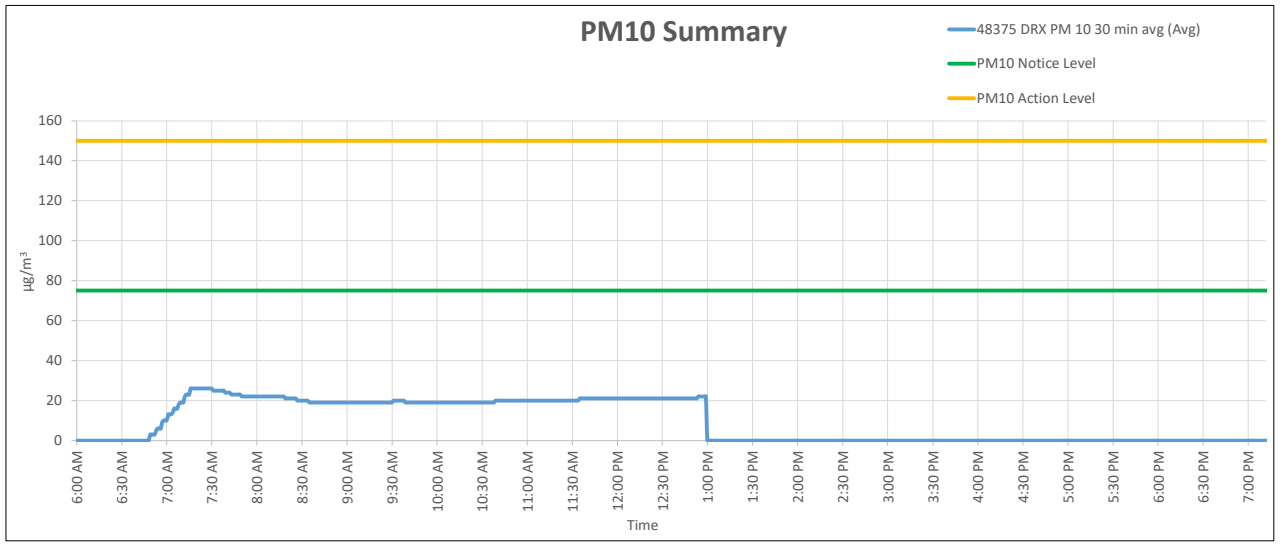
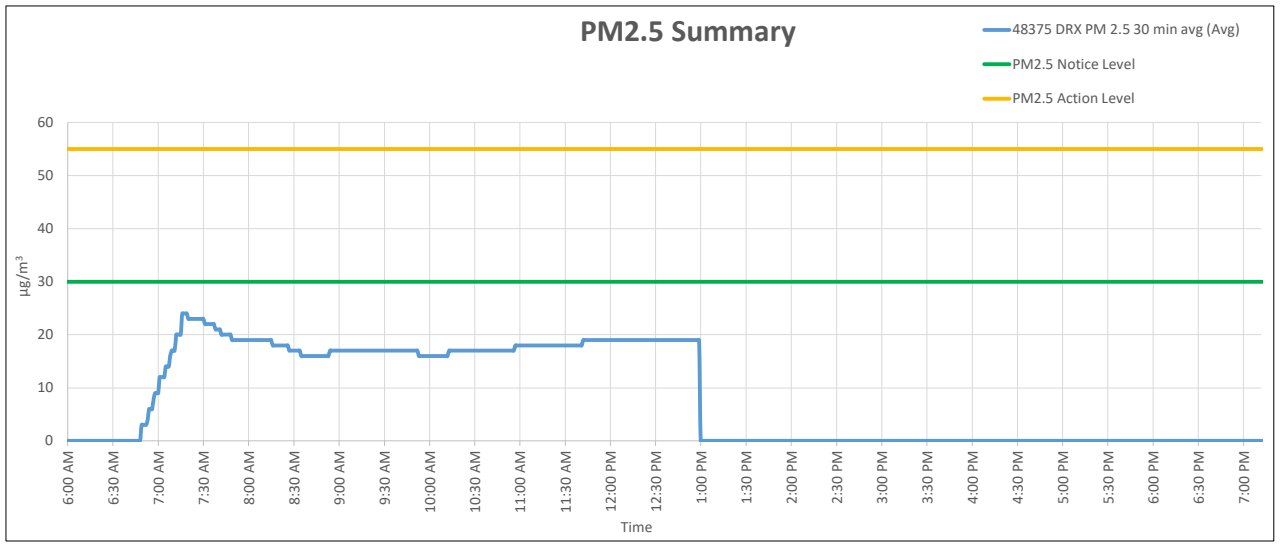
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48375	6:49 AM	12:59 PM	20.02	26.00	17.65	24.00





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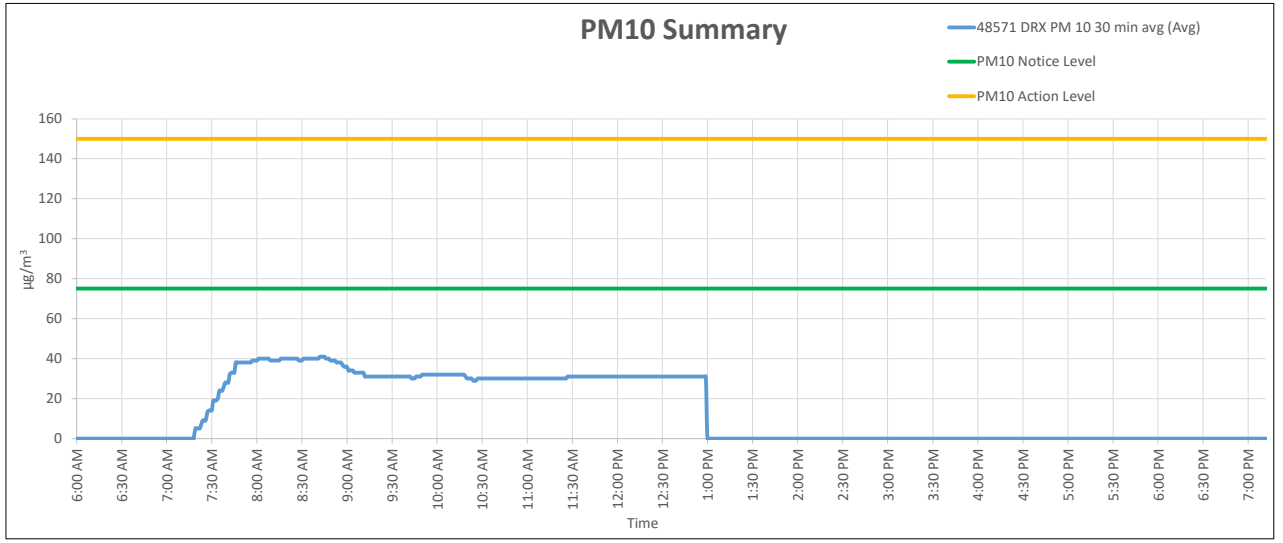
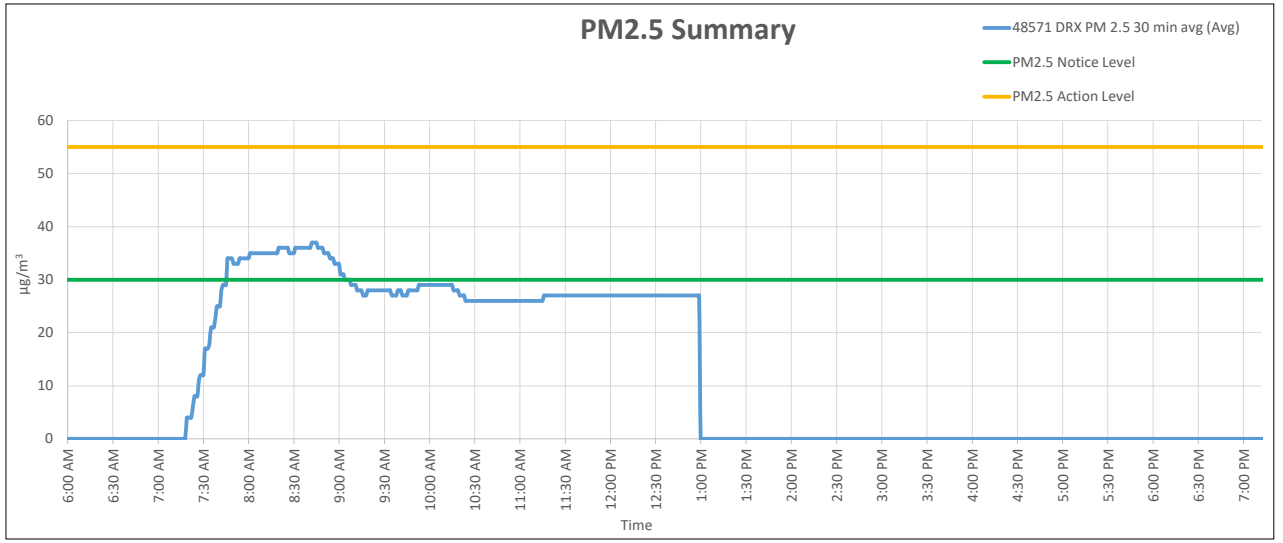
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
48571	7:19 AM	12:59 PM	31.76	41.00	28.08	37.00





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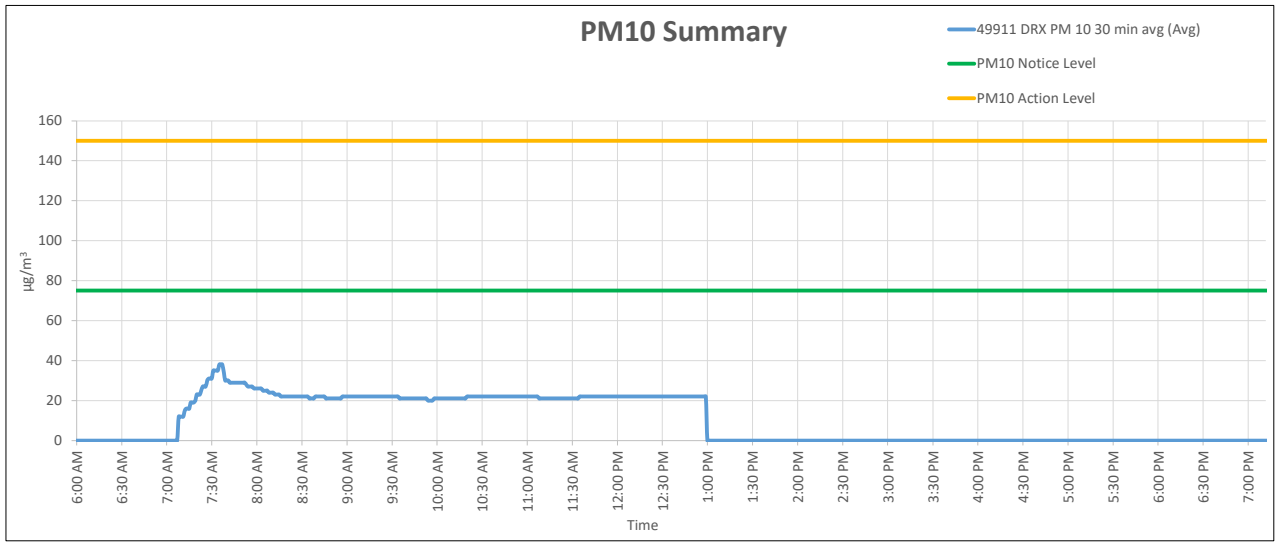
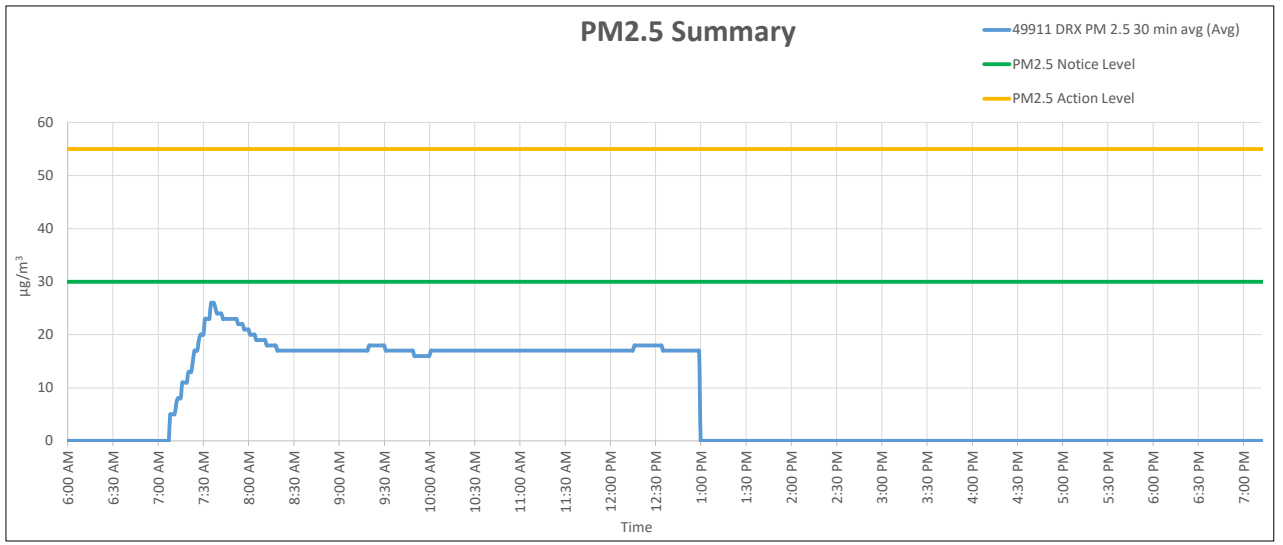
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
49911	7:08 AM	12:59 PM	22.50	38.00	17.35	26.00





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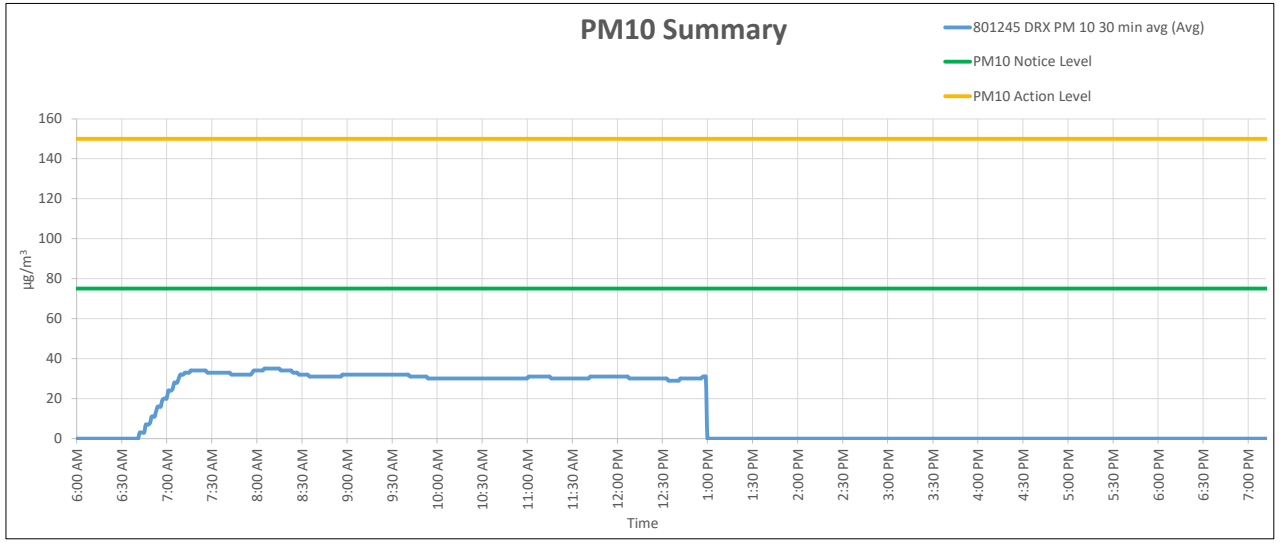
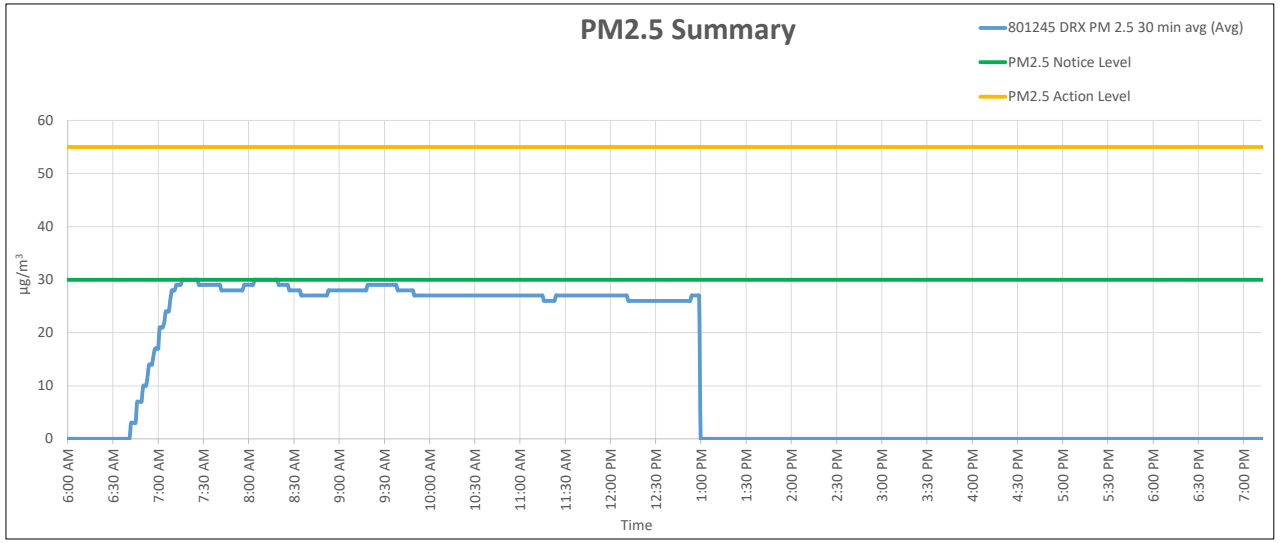
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, July 5, 2024

Monitor Number	Start	Stop	Daily PM_{10} Average ($\mu g/m^3$)	Daily PM_{10} Maximum ($\mu g/m^3$)	Daily $PM_{2.5}$ Average ($\mu g/m^3$)	Daily $PM_{2.5}$ Maximum ($\mu g/m^3$)
801245	6:42 AM	12:59 PM	30.15	35.00	26.59	30.00





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 (µg/m³)	Long-Term AMCV (µg/m³)
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

Table 5 – TCEQ AMCV for Arsenic and PAH Union Pacific Houston Wood Preserving Works Houston, Texas		
Analyte	**Short-Term AMCV ($\mu g/m^3$)**	**Long-Term AMCV ($\mu g/m^3$)**
Phenanthrene	8	0.8
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 µg/m3 as a 3-month average concentration.

Integrated air samples were not taken during the week of June 17th due to weather, therefore two (2) samples were taken during the week of June 24th. Both PAH samples were extracted past the recommended hold times due to a laboratory error. The lead and arsenic samples were analyzed within the recommended hold times.

Integrated air samples were not taken during the first week of July due to weather and the holiday.

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Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-02	June 24, 2024	8:03 AM	4:04 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS02-06242024	Acenaphthene	0.41	0.11 µg/m3	100 µg/m^3	10 µg/m^3
	Acenaphthylene	ND	0.11 µg/m3	100 µg/m^3	10 µg/m^3
	Anthracene	ND	0.11 µg/m3	1 µg/m^3	0.067 µg/m^3
	Benzo(a)anthracene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(a)pyrene	ND	0.11 µg/m3	NE	0.017 µg/m^3
	Benzo(b)fluoranthene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(e)pyrene	ND	0.11 µg/m3	NE	NE
	Benzo(g,h,i)perylene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(k)fluoranthene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Chrysene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Dibenz(a,h)anthracene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluoranthene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluorene	0.40	0.11 µg/m3	10 µg/m^3	1 µg/m^3
	Indeno(1,2,3-cd)pyrene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	1-Methylnaphthalene	0.36 µg/m3	0.11 µg/m3	NE	NE
	2-Methylnaphthalene	0.68 µg/m3	0.11 µg/m3	NE	NE
	Naphthalene	2.3 µg/m3	0.25 µg/m3	500 µg/m^3	50 µg/m^3
	Perylene	ND	0.11 µg/m3	NE	NE
	Phenanthrene	0.49 µg/m3	0.11 µg/m3	8 µg/m^3	0.8 µg/m^3
	Pyrene	ND	0.11 µg/m3	0.5 µg/m^3	0.05 µg/m^3

Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-04	June 24, 2024	8:03 AM	4:04 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS04-06242024	Acenaphthene	ND	0.20 µg/m3	100 µg/m^3	10 µg/m^3
	Acenaphthylene	ND	0.20 µg/m3	100 µg/m^3	10 µg/m^3
	Anthracene	ND	0.20 µg/m3	1 µg/m^3	0.067 µg/m^3
	Benzo(a)anthracene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(a)pyrene	ND	0.20 µg/m3	NE	0.017 µg/m^3
	Benzo(b)fluoranthene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(e)pyrene	ND	0.20 µg/m3	NE	NE
	Benzo(g,h,i)perylene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(k)fluoranthene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Chrysene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Dibenz(a,h)anthracene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluoranthene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluorene	ND	0.20 µg/m3	10 µg/m^3	1 µg/m^3
	Indeno(1,2,3-cd)pyrene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	1-Methylnaphthalene	ND	0.20 µg/m3	NE	NE
	2-Methylnaphthalene	ND	0.20 µg/m3	NE	NE
	Naphthalene	ND	0.50 µg/m3	500 µg/m^3	50 µg/m^3
	Perylene	ND	0.20 µg/m3	NE	NE
	Phenanthrene	ND	0.20 µg/m3	8 µg/m^3	0.8 µg/m^3
	Pyrene	ND	0.20 µg/m3	0.5 µg/m^3	0.05 µg/m^3

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Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-01	June 24, 2024	8:03 AM	4:04 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA-1620-AS01-06242024	Arsenic	ND	1.3 µg/m3
	Lead	ND	1.3 µg/m3

Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-03	June 24, 2024	8:03 AM	4:04 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA-1620-AS03-06242024	Arsenic	ND	1.2 µg/m3
	Lead	<1.2 µg/m3	1.2 µg/m3

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Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-06	June 25, 2024	8:07 AM	4:08 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS06-06252024	Acenaphthene	0.10 µg/m3	0.10 µg/m3	100 µg/m^3	10 µg/m^3
	Acenaphthylene	ND	0.10 µg/m3	100 µg/m^3	10 µg/m^3
	Anthracene	ND	0.10 µg/m3	1 µg/m^3	0.067 µg/m^3
	Benzo(a)anthracene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(a)pyrene	ND	0.10 µg/m3	NE	0.017 µg/m^3
	Benzo(b)fluoranthene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(e)pyrene	ND	0.10 µg/m3	NE	NE
	Benzo(g,h,i)perylene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Benzo(k)fluoranthene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Chrysene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Dibenz(a,h)anthracene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluoranthene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	Fluorene	ND	0.10 µg/m3	10 µg/m^3	1 µg/m^3
	Indeno(1,2,3-cd)pyrene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3
	1-Methylnaphthalene	ND	0.10 µg/m3	NE	NE
	2-Methylnaphthalene	0.14 µg/m3	0.10 µg/m3	NE	NE
	Naphthalene	0.33 µg/m3	0.25 µg/m3	500 µg/m^3	50 µg/m^3
	Perylene	ND	0.10 µg/m3	NE	NE
	Phenanthrene	0.13 µg/m3	0.10 µg/m3	8 µg/m^3	0.8 µg/m^3
	Pyrene	ND	0.10 µg/m3	0.5 µg/m^3	0.05 µg/m^3

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Sample ID	Sample Date	Start Time	End Time	Sample Location
24G0604-05	June 25, 2024	8:07 AM	4:08 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA-1620-AS05-06252024	Arsenic	ND	1.3 µg/m3
	Lead	ND	1.3 µg/m3