



October 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 September 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 September 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 September 2024:

Week Period September 2 through September 8, 2024:

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

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- E3 installed the geosynthetic clay liner (GCL), 60-mil thick HDPE geomembrane, and woven Mirafi 500X geotextile system at FE-1&3, FE-2, and FE-7.
 - E3 applied and compacted base material at FE-2 and FE-7.
 - E3 covered the bottom of the remaining focused excavations with 20-mil thick polyethylene liners to protect the compacted clay backfill from the rain; however, some rain water came into contact with the backfilled soil.
 - To expedite the backfill process following rain events, E3 excavated the wet, clean backfill soil from focused excavations FE-1&3, FE-2, FE-4, FE-5, FE-6, FE-7, and FE-8. The excavated clean backfill was placed in eight roll-off containers, sampled for the soil management parameters listed in the Revised IMWP, and covered and staged on-site pending profiling and disposal.
- **Dust Control and Air Monitoring**
 - Atlas conducted real time air and dust monitoring at the Site on September 6th 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 September 6th (Appendix B).
- **Soil/Waste Management**
 - Eight roll-off containers of excavated clean backfill material were generated this week. Roll-off containers staged at the Site were kept covered.
 - E3 transported three roll-offs containing Class 2 non-hazardous asphalt and concrete to the HPP Baytown North Facility.
- **Stormwater Management**
 - Following rain events, stormwater was recovered from the tops of the polyethylene liners covering the focused excavations using vacuum trucks. The recovered stormwater was stored in frac tanks located on Site pending characterization and disposal. BMPs were checked before and after the rain events.
 - As of September 8, approximately 408,000 gallons of stormwater are being stored onsite pending profiling, transportation, and disposal. The stormwater is stored in twenty large (21,000 gallon) frac tanks, and two mini (10,000 gallon) frac tanks located on-site.

Week Period September 9 through September 13, 2024:

- **Remediation Activities**
 - E3 conducted the following activities this week (Photos 1 – 10):
 - E3 installed the GCL/HDPE/geotextile liner system at focused excavations FE-4, FE-5, FE-6, FE-8, and FE-13.
 - E3 applied and compacted base material at FE-2, FE-4, FE-5, FE-6, FE-7, FE-9, FE-10, and FE-11.
 - E3's concrete contractor, Ashton, cut back the existing concrete and asphalt around focused excavations to prepare for new concrete and asphalt installation.
 - Ashton prepared expansion joints and installed concrete dowels and rebar in the focused excavations.

- **Dust Control and Air Monitoring**

- Atlas conducted real time air and dust monitoring at the Site this week on behalf of UPRR in accordance with the DCAM Plan provided in the Revised IMWP. The Stop-Work Level Threshold was not exceeded during the remediation activities on September 9th through 13th (Appendix B). The Action Level Threshold was exceeded during remediation activities on September 13th. Atlas indicates that this was due to excessive morning haze which decreased by mid-morning, and poor air quality in the Houston area that day.

- **Soil/Waste Management**

- One roll-off container of concrete/asphalt was generated this week. Roll-off containers staged at the Site were kept covered.
- Samples were collected from eight roll-offs containing soil and sent to ALS for analysis.
- E3 transported roll-off containers to the following facilities based on waste profiles:
 - Eleven roll-offs containing Class 1 non-hazardous soil waste were transported to the Republic Services Blue Ridge Facility.
 - Seven roll-offs containing Class 2 non-hazardous soil waste were transported to the Republic Services McCarty Road Facility.
 - One roll-off containing metal debris was transported to the Republic Services Blue Ridge Facility.

- **Stormwater Management**

- Following rain events, stormwater was recovered from the focused excavations 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 September 13, approximately 423,000 gallons of stormwater are being stored onsite pending profiling, transportation, and disposal. The stormwater is stored in twenty-two large (21,000 gallon) frac tanks and two mini (10,000 gallon) frac tanks located onsite.

Week Period September 16 through September 20, 2024:

- **Remediation Activities**

- E3 conducted the following activities this week (Photos 11 – 16):
 - E3 conducted site maintenance and cleaned around focused excavations.
 - Ashton cut back existing concrete and asphalt around focused excavations to prepare for concrete and asphalt installation. Ashton continued to prepare expansion joints and install concrete dowels and rebar at the focused excavations.
 - E3 loaded concrete and asphalt into roll-offs pending sampling, profiling, and disposal.
 - Ashton completed the concrete cover at the following focused excavations: FE-8, FE-10, FE-11, and FE-12.
 - Ashton completed the asphalt cover at the following focused excavations: FE-4, FE-6, and FE-7.

- **Dust Control and Air Monitoring**

- Atlas conducted real time air and dust monitoring at the Site this week on behalf of UPRR in accordance with the DCAM Plan provided in the Revised IMWP. The Stop-Work Level Threshold was not exceeded during the remediation activities on September 16th through 20th (Appendix B).

- Atlas collected two integrated air samples on September 19th in accordance with the DCAM Plan. Samples were submitted to the laboratory for lead, arsenic, and PAHs analyses. Arsenic and lead concentrations were not detected above laboratory method detection limits (MDLs). Laboratory analytical results are included in Atlas' monthly summary provided in Appendix B.
- **Soil/Waste Management**
 - Seven roll-off containers of concrete/asphalt were generated this week. Roll-off containers staged at the Site were kept covered.
 - E3 transported two roll-offs containing Class 1 non-hazardous soil waste to the Republic Services Blue Ridge Facility.
- **Stormwater Management**
 - No additional stormwater was recovered from the Site this week. Approximately 423,000 gallons of stormwater are being stored onsite pending profiling, transportation, and disposal.

Week Period September 23 through September 27, 2024:

- **Remediation Activities**
 - E3 conducted the following activities this week (Photos 17 – 22):
 - E3 conducted site maintenance and cleaned around focused excavations.
 - Ashton continued to cut back existing concrete and asphalt around focused excavations to prepare for concrete and asphalt installation.
 - E3 loaded concrete and asphalt into roll-offs pending sampling, profiling, and disposal.
 - Ashton prepared the expansion joints and installed concrete dowels and rebar at the focused excavations.
 - Ashton completed the concrete cover at the following focused excavations: FE-2, FE-5, FE-6, FE-9, and FE-13; and completed the asphalt cap at FE-1&3.
- **Dust Control and Air Monitoring**
 - Atlas conducted real time air and dust monitoring at the Site this week on behalf of UPRR in accordance with the DCAM Plan provided in the Revised IMWP. No Target Dust Control Levels were exceeded during the remediation activities on September 23rd through 27th (Appendix B).
- **Soil/Waste Management**
 - Two roll-off containers of concrete/asphalt were generated this week. Roll-off containers staged at the Site were kept covered.
 - Samples were collected from ten roll-offs containing asphalt/concrete and sent to ALS for analysis.
 - No roll-off containers were transported off site this week.
- **Stormwater Management**
 - No additional stormwater was recovered from the Site this week. Approximately 423,000 gallons of stormwater are being stored onsite pending profiling, transportation, and disposal.

Week Period September 30, 2024:

- **Remediation Activities**
 - No remediation activities were conducted.
- **Dust Control and Air Monitoring**
 - No dust generating activities took place. Therefore, air monitoring was not conducted this week.
- **Soil/Waste Management**
 - No roll-off containers were filled this day. 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 423,000 gallons of stormwater are being stored onsite pending profiling, transportation, and disposal. UPRR is evaluating disposal options for the stormwater.

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 September 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. WSP personnel uses a hoe 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 September 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 September 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:
 - September 4th – B099/B100 was measured at 8 inches, B103/B104 was measured at 41 inches, and B107/B108 was measured at 40 inches (Photo 23, 24 and 25).
 - September 12th – at 5.5, 39 and 38.5 inches (Photo 26, 27 and 28).
 - September 18th – at 7, 38.5, and 38 inches (Photo 29, 30 and 31).
 - September 26th – at 9.5, 40, and 39 inches (Photo 32, 33 and 34).
- During the September 2024 inspections, the water in Sump 1 was observed to be clear or light tan in color. The water in Sump 2 was observed to be tan, turbid gray, and brown in color. The water in Sump 3 was observed to be light tan to brown in color. A sheen was observed at Sump 1 during the September 4th, 12th, 18th and 26th inspections (Photos 23, 26, 29 and 32). No odors were reported during the September inspections.

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 September 12th (Photo 35) and September 18th (Photo 36).
- 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 a tar material seep is observed (Track 802). For this location, the tar-like material seep activity during the month of September was lower compared to the August inspections. The material recovered was placed in a drum staged at the CSA for disposal.
- During the September 2024 inspections, no NAPL seeps were observed at the seven August 2020 test pit locations (stalls A010, A021, A098, B013, B057, B096 and B108) or three other stall numbers B042, B056, and B102 Joint.
- 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.
- There was no brown water staining observed during the month of September.

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, Geologist



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 – September 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	
9/30/2020	1	10	9	Not measurable	
10/8/2020	4	12	11.5	Not measurable	

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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
10/15/2020	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	
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	

TABLE 1
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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
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	
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

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
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.
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.

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
10/18/2023	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 measureable	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 measureable	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 measureable	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 measureable	No sheen observed in any of the sumps. Water color light brown on B099/B100 and clear on B103/B104 and B107/B108.
3/27/2024	0	7	6	Not measureable	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 measureable	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.

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
4/10/2024	0	0	0	Not measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	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 measureable	Brown water color and no sheen observed at B099/B100. Brown/cloudy water color and no sheen observed at B103/B104 and B107/B108.
8/14/2024	24	42.5	41.5	Not measureable	Brown water color and sheen observed at B099/B100. Gray water color and no sheen observed at B103/B104. Light brown and no sheen observed at B107/B108.
8/21/2024	22.5	42.5	41.5	Not measureable	Brown water color and no sheen observed at B099/B100, B103/B104 and at 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
8/28/2024	20	42	41.5	Not measureable	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.

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
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Photo No. 1	Inspection Date: 9/9/2024
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Description:
Compaction of base materials at FE-11.

Lat: 29.784340
Long: -95.319427



Photo No. 2	Inspection Date: 9/9/2024
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Description:
Installation of geosynthetic clay liner (GCL) at FE-4.

Lat: 29.784829
Long: -95.319657





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
3

Inspection Date:
9/9/2024

Description:

Installation of 60-mil thick HDPE Geomembrane at FE-4.

Lat: 29.785023
Long: -95.319619

West Elevation

☉ 123°E (T) • 29.785023, -95.319619 ±33ft ▲ -40ft



Geofabric liner Install FE 4

HWPW
09 Sep 2024, 11:21:43

Photo No.
4

Inspection Date:
9/9/2024

Description:

Installation of GCL at FE-8.

Lat: 29.784990
Long: -95.319225

2665 Harlem St, Houston, TX 77020, USA

☉ 67°NE (T) • 29.78499, -95.319225 ±22ft ▲ -40ft



GCL Install FE 8

HWPW
09 Sep 2024, 11:50:11



PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
5

Inspection Date:
9/9/2024

Description:

Installation of HDPE Geomembrane at FE-8.

Lat: 29.784983
Long: -95.319202

2665 Harlem St, Houston, TX 77020, USA

72°NE (T) • 29.784983, -95.319202 ±14ft ▲ -48ft



Photo No.
6

Inspection Date:
9/9/2024

Description:

Compaction of base materials at FE-4.

Lat: 29.784876
Long: -95.319529

5110 Terry St, Houston, TX 77009, USA

84°E (T) • 29.784876, -95.319529 ±12ft ▲ -47ft





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
7

Inspection Date:
9/9/2024

Description:
Installation of GCL at FE-6.

Lat: 29.785585
Long: -95.318367

2665 Harlem St, Houston, TX 77020, USA

☉ 154°SE (T) • 29.785585, -95.318367 ±35ft ▲ -20ft



Photo No.
8

Inspection Date:
9/9/2024

Description:
Installation of HDPE Geomembrane at FE-6.

Lat: 29.785455
Long: -95.318212





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
9

Inspection Date:
9/10/2024

Description:

Compaction test of base materials at FE-13.

Lat: 29.784976

Long: -95.321249

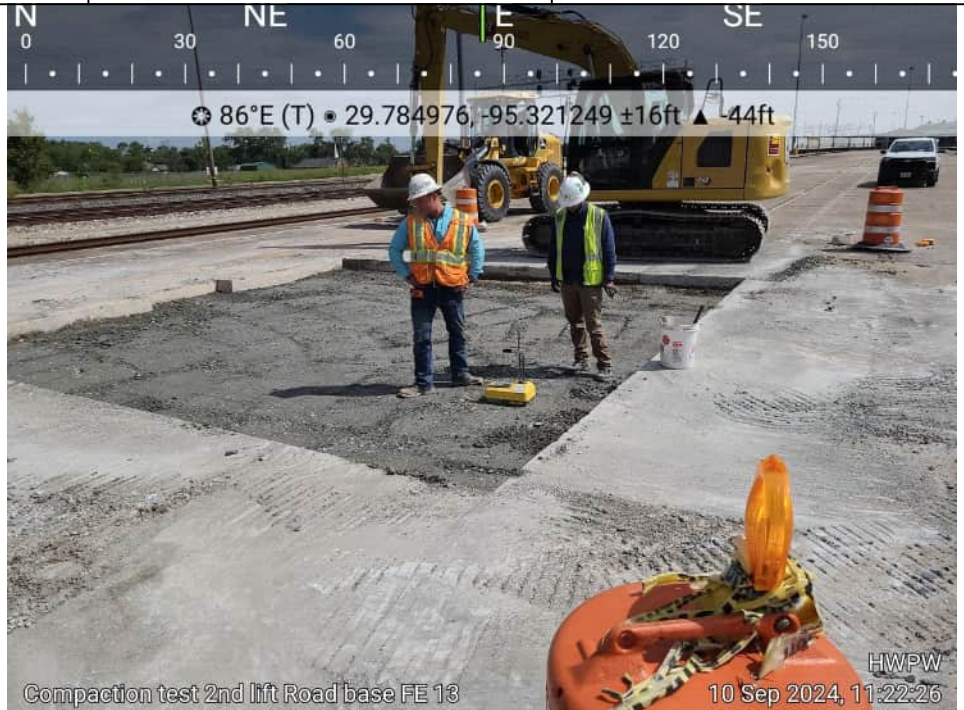


Photo No.
10

Inspection Date:
9/12/2024

Description:

Compaction of base materials at FE-2.

Lat: 29.784104

Long: -95.320857





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
11

Inspection Date:
9/19/2024

Description:
Finished concrete cap at FE-10.

Lat: 29.785013
Long: -95.317590

North East Elevation

☉ 241°SW (T) • 29.785013, -95.31759 ±17ft ▲ -44ft



Finished concrete at FE 10

HWPW
19 Sep 2024, 12:38:54

Photo No.
12

Inspection Date:
9/19/2024

Description:
Finished asphalt cap at FE-4.

Lat: 29.784802
Long: -95.319734

West Elevation

☉ 95°E (T) • 29.784802, -95.319734 ±15ft ▲ -39ft



Finished asphalt at FE 4

HWPW
19 Sep 2024, 16:12:52



PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
13

Inspection Date:
9/19/2024

Description:
Compaction of asphalt cap at FE-6.

Lat: 29.785579
Long: -95.318286



Photo No.
14

Inspection Date:
9/19/2024

Description:
Finished asphalt cap at FE-6.

Lat: 29.785380
Long: -95.318199





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
15

Inspection Date:
9/20/2024

Description:
Working and finishing concrete cap at FE-8.

Lat: 29.784981
Long: -95.319019

North West Elevation

☉ 148°SE (T) • 29.784981, -95.319019 ±15ft ▲ -45ft



Photo No.
16

Inspection Date:
9/20/2024

Description:
Finished concrete cap at FE-11.

Lat: 29.784304
Long: -95.319589

West Elevation

☉ 82°E (T) • 29.784304, -95.319589 ±25ft ▲ -42ft





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
17

Inspection Date:
9/23/2024

Description:

Removal of additional concrete and asphalt at FE-5 to repair potholes in cap.

Lat: 29.785473

Long: -95.318558

North West Elevation

☉ 161°SE (T) • 29.785473, -95.318558 ±14ft ▲ -38ft



Removing the additional 30X10 concrete
from FE 5

HWPW
23 Sep 2024, 10:42:13

Photo No.
18

Inspection Date:
9/23/2024

Description:

Pouring and working concrete cap at FE-9.

Lat: 29.785136

Long: -95.318363

East Elevation

☉ 285°W (T) • 29.785136, -95.318363 ±44ft ▲ -39ft



Finishing the pour at FE 9

HWPW
23 Sep 2024, 11:00:26



PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.

19

Inspection Date:

9/23/2024

Description:

Pouring and working asphalt cap at FE-1&3.

Lat: 29.784183

Long: -95.321033

West Elevation

☉ 89°E (T) • 29.784183, -95.321033 ±27ft ▲ -44ft



Installing lift 2 Hot mix asphalt at FE 1&3

HWPW

23 Sep 2024, 14:27:39

Photo No.

20

Inspection Date:

9/24/2024

Description:

Pouring and working concrete cap at FE-7.

Lat: 29.784175

Long: -95.320603

South Elevation

☉ 9°N (T) • 29.784175, -95.320603 ±35ft ▲ -39ft



Finishing the 5th concrete pour at FE 7

HWPW

24 Sep 2024, 9:25:07



PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
21

Inspection Date:
9/24/2024

Description:

Finishing the concrete cap at FE-13.

Lat: 29.785051

Long: -95.321381

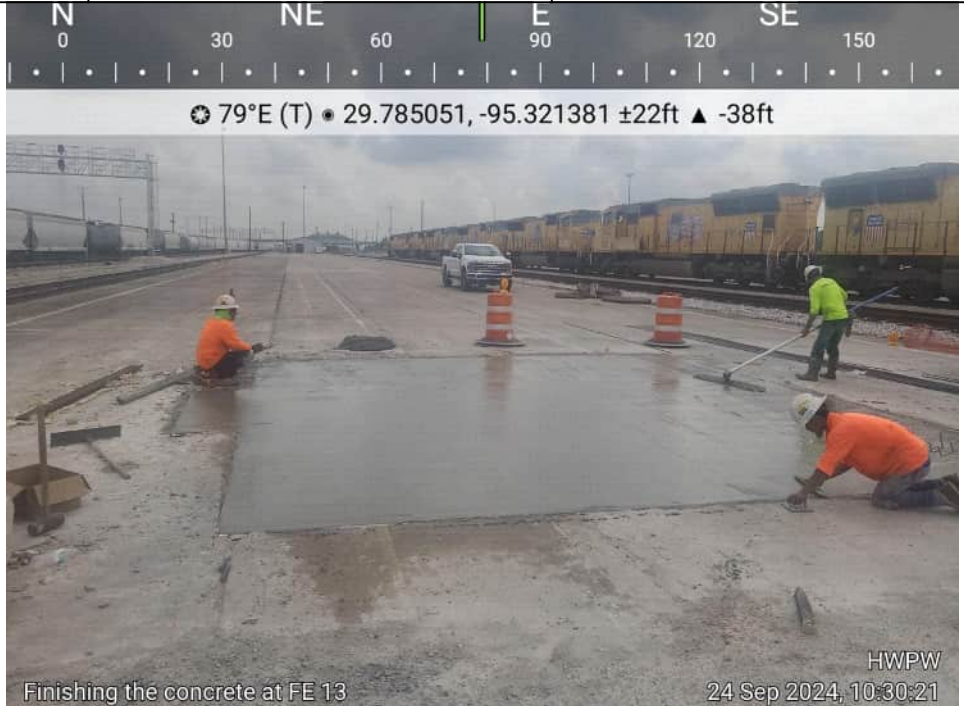


Photo No.
22

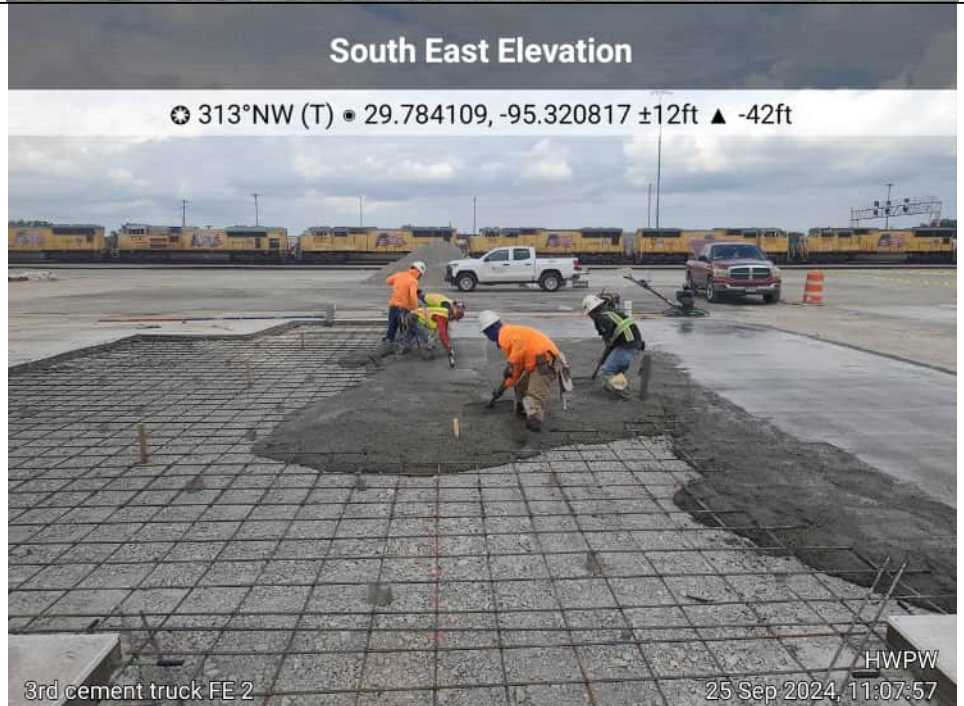
Inspection Date:
9/25/2024

Description:

Working on concrete cap at FE-2.

Lat: 29.784109

Long: -95.320817





PHOTOGRAPHIC LOG

Client Name: Union Pacific Railroad		Site Location: Englewood Intermodal Yard, Houston, Texas	Project No. 31406585.016
Photo No. 23	Inspection Date: 9/4/2024		
Description: Sump 1 (B99/B100), 8 inches of freeboard in sump. Color is tan, and no odor observed. Sheen observed on the surface. Lat: 29.784275 Long: -95.320844			
Photo No. 24	Inspection Date: 9/4/2024		
Description: Sump 2 (B103/B104), 41 inches of freeboard in sump. Color is tan, and no sheen or odor observed. Lat: 29.784202 Long: -95.320939			



PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
25

Inspection Date:
9/4/2024

Description:

Sump 3 (B107/B108), 40 inches of freeboard in sump. Color is tan, and no sheen or odor observed.

Lat: 29.784207

Long: -95.321050



Photo No.
26

Inspection Date:
9/12/2024

Description:

Sump 1 (B99/B100), 5.5 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface.

Lat: 29.784275

Long: -95.320844





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
27

Inspection Date:
9/12/2024

Description:

Sump 2 (B103/B104), 39 inches of freeboard in sump. Color is brown, and no sheen or odor observed.

Lat: 29.784202

Long: -95.320939



Photo No.
28

Inspection Date:
9/12/2024

Description:

Sump 3 (B107/B108), 38.5 inches of freeboard in sump. Color is tan, and no sheen or odor observed.

Lat: 29.784207

Long: -95.321050





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
29

Inspection Date:
9/18/2024

Description:

Sump 1 (B99/B100), 7 inches of freeboard in sump. Color is light tan, and no odor observed. Sheen observed on the surface.

Lat: 29.784275

Long: -95.320844



Photo No.
30

Inspection Date:
9/18/2024

Description:

Sump 2 (B103/B104), 38.5 inches of freeboard in sump. Color is tan, and no sheen or odor observed.

Lat: 29.784202

Long: -95.320939





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.
31

Inspection Date:
9/18/2024

Description:

Sump 3 (B107/B108), 38 inches of freeboard in sump. Color is light tan, and no sheen or odor observed.

Lat: 29.784207

Long: -95.321050



Photo No.
32

Inspection Date:
9/26/2024

Description:

Sump 1 (B99/B100), 9.5 inches of freeboard in sump. Color is clear, and no odor observed. Sheen observed on the surface.

Lat: 29.784275

Long: -95.320844





PHOTOGRAPHIC LOG

Client Name:
Union Pacific Railroad

Site Location:
Englewood Intermodal Yard, Houston, Texas

Project No.
31406585.016

Photo No.

33

Inspection Date:

9/26/2024

Description:

Sump 2 (B103/B104), 40 inches of freeboard in sump. Color is turbid grey, and no sheen or odor observed.

Lat: 29.784202

Long: -95.320939

South West Elevation

☉ 37°NE (T) • 29.784202, -95.320939 ±10ft ▲ -50ft



Photo No.

34

Inspection Date:

9/26/2024

Description:

Sump 3 (B107/B108), 39 inches of freeboard in sump. Color is transparent brown, and no sheen or odor observed.

Lat: 29.784207

Long: -95.321050

South West Elevation

☉ 60°NE (T) • 29.784207, -95.32105 ±10ft ▲ -43ft





PHOTOGRAPHIC LOG

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

Photo No. 35	Inspection Date: 9/12/2024
------------------------	--------------------------------------

Description:
NAPL seep at Track 802. ~9 in³ of tar removed.

Lat: 29.784972
Long: -95.321246



Photo No. 36	Inspection Date: 9/18/2024
------------------------	--------------------------------------

Description:
NAPL seep at Track 802. ~9 in³ of tar removed.

Lat: 29.784972
Long: -95.321246





ATTACHMENT B

Air Monitoring Monthly Report – September 2024



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

**Air Monitoring Monthly Report
September 2024**

Houston, Texas

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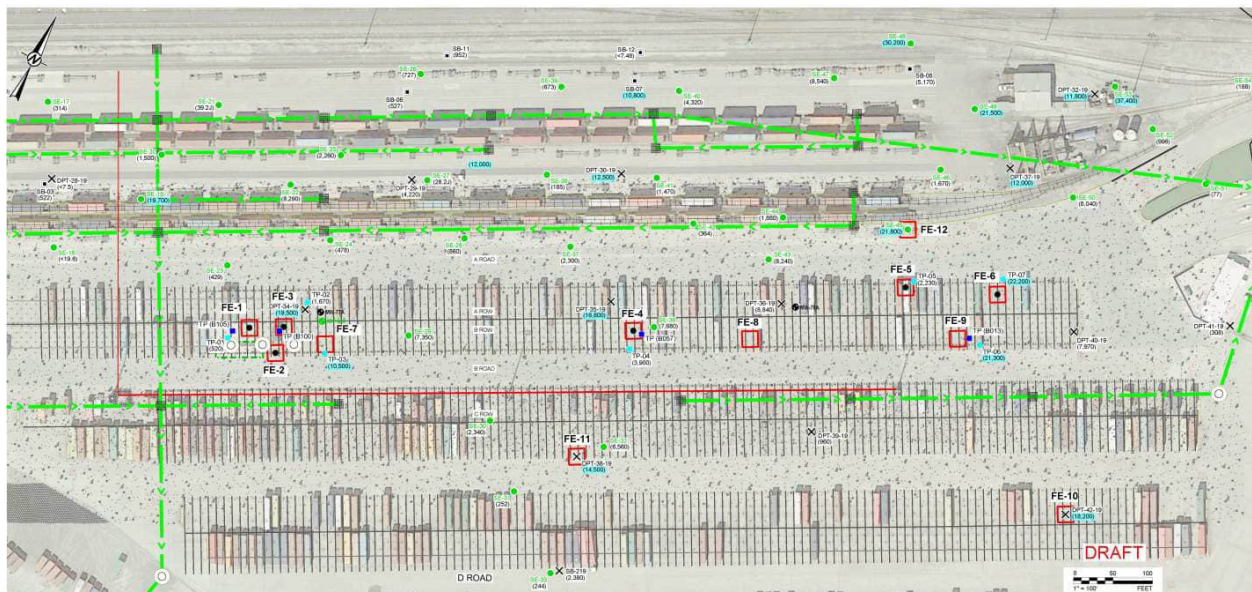
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SECTION 1 INTRODUCTION

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

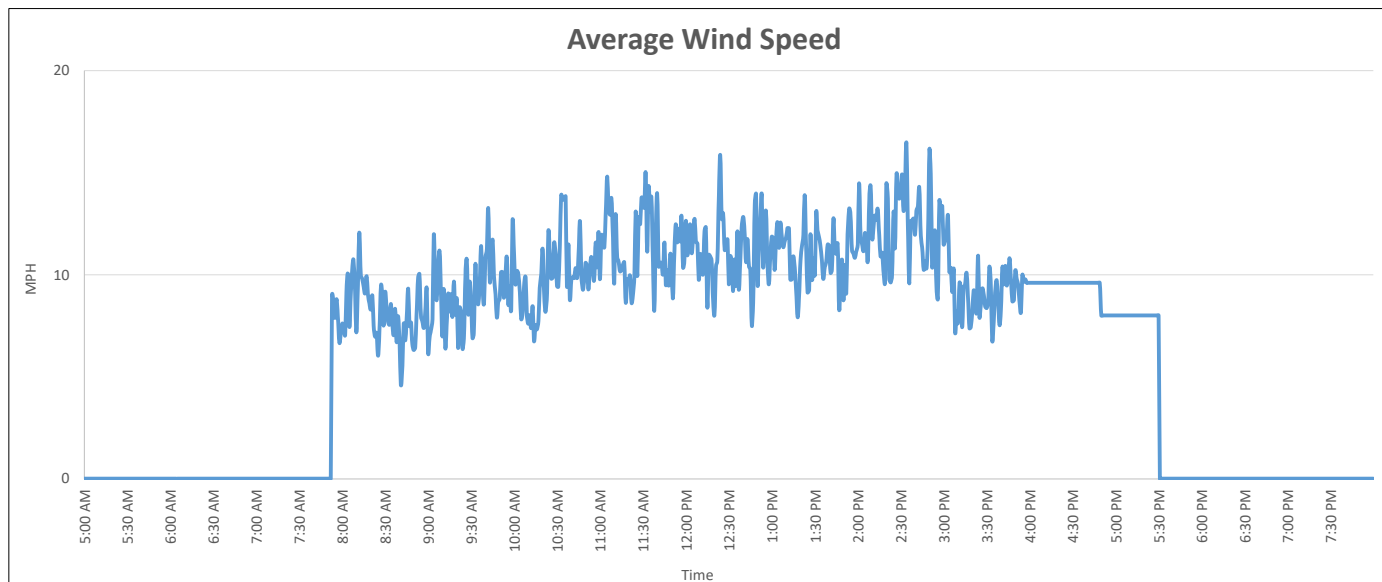
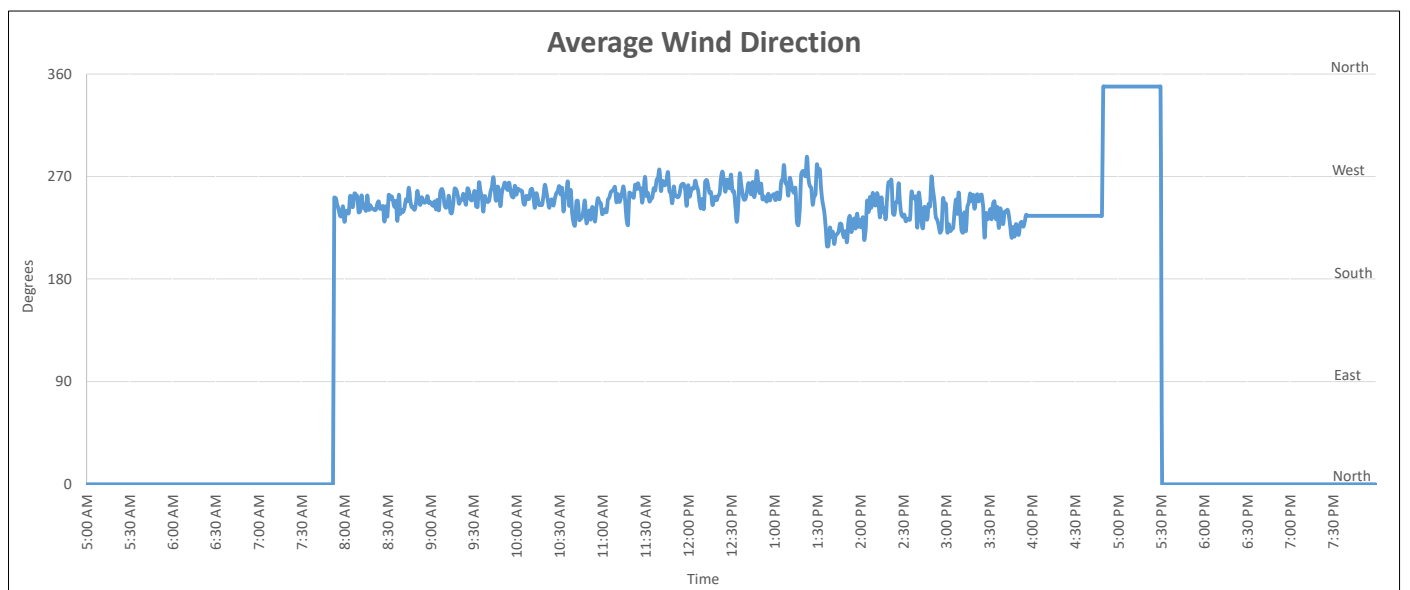
SECTION 2

(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.

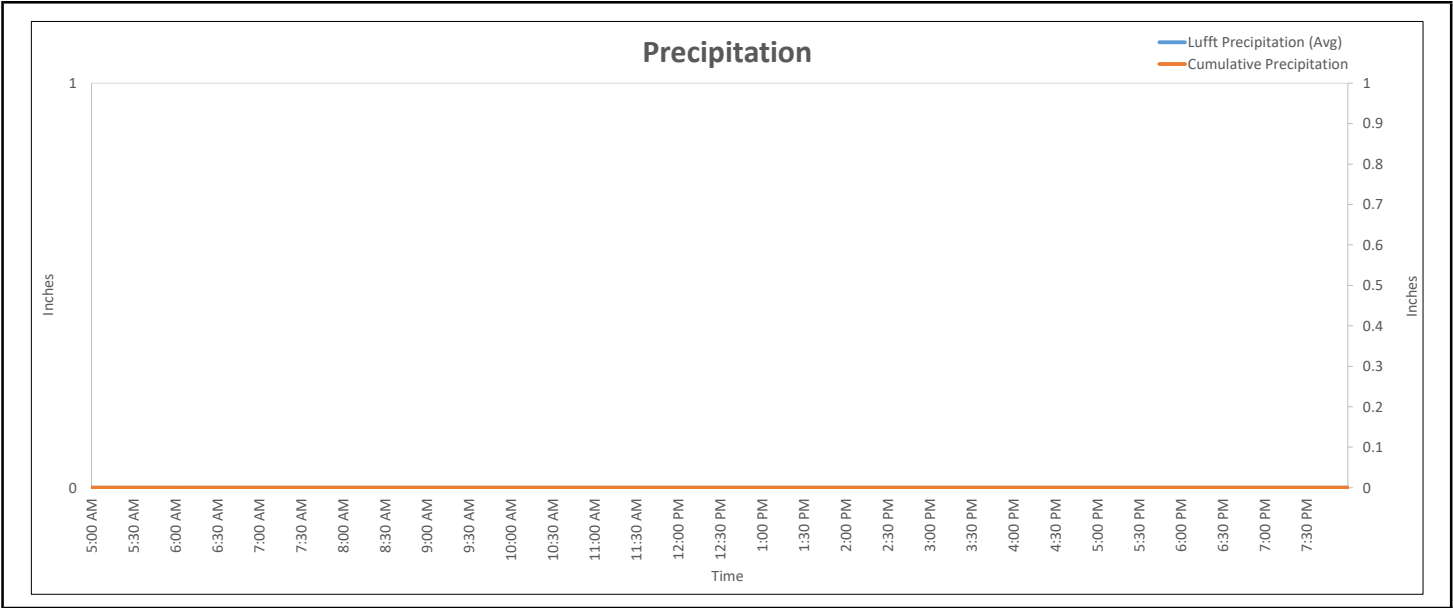
The maximum, minimum and average monitored value per day for each air monitor is presented in Table 5.

Monitoring levels did not reach the Stop Work threshold during the month of September. On September 13 ambient air quality levels were elevated in the Houston area. Field staff noted a haze in the air before the monitors were set up for the day. Field staff noted that the haze began to decrease at approximately 9:40 am.

Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Friday, September 6, 2024

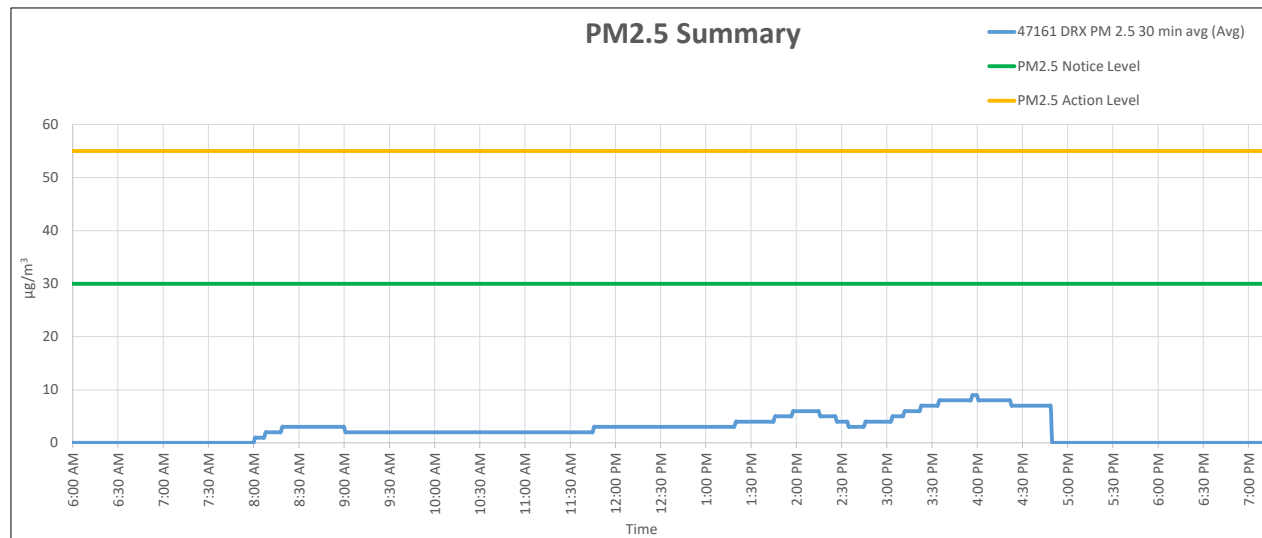
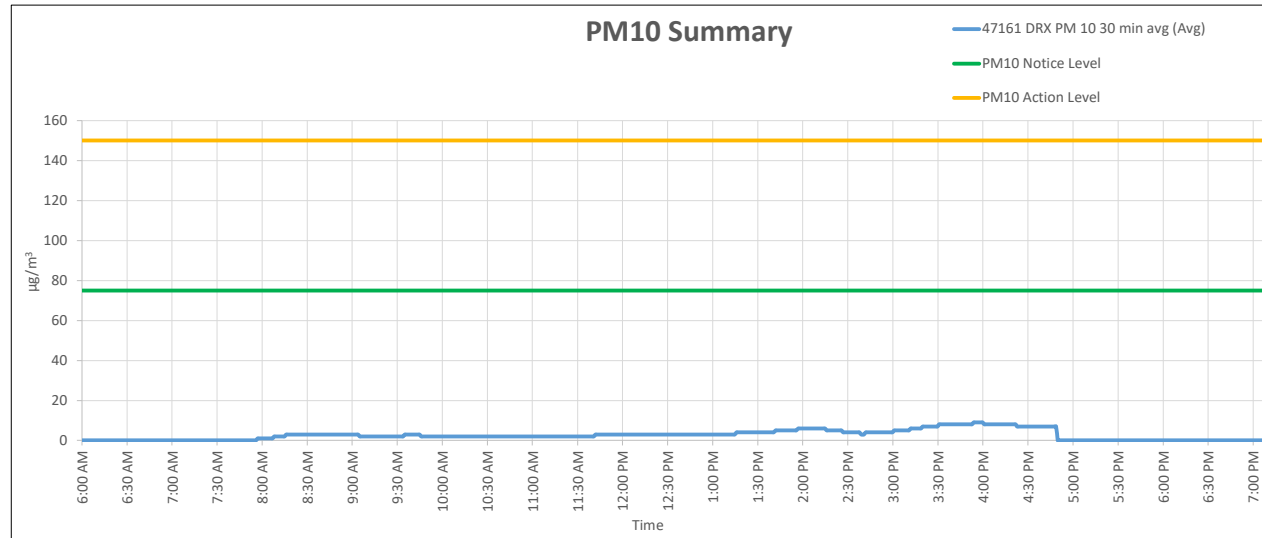


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Friday, September 6, 2024



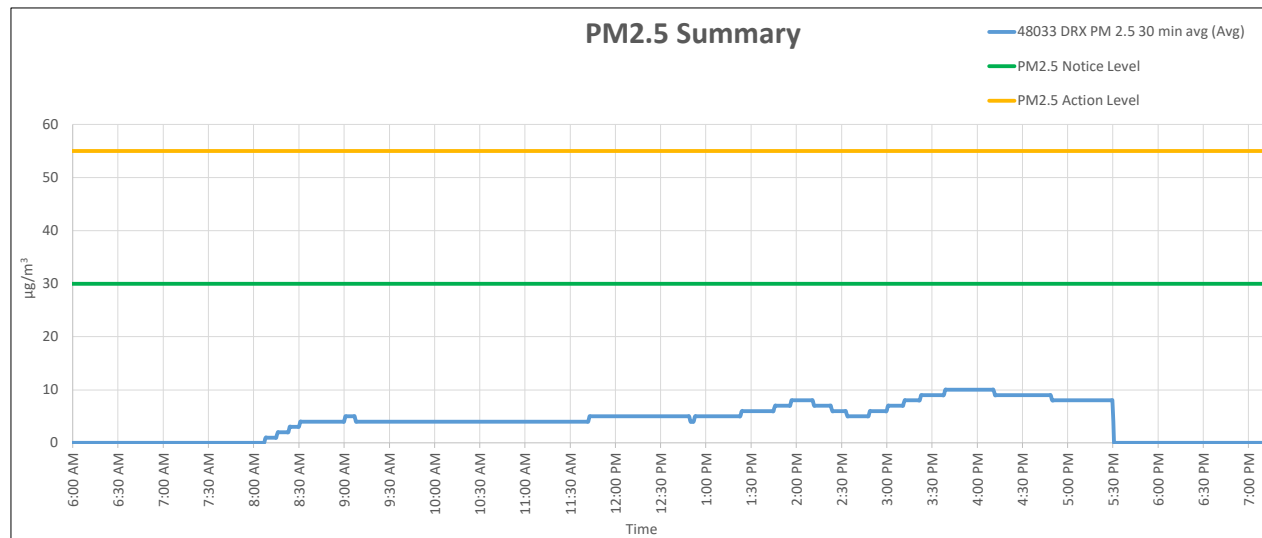
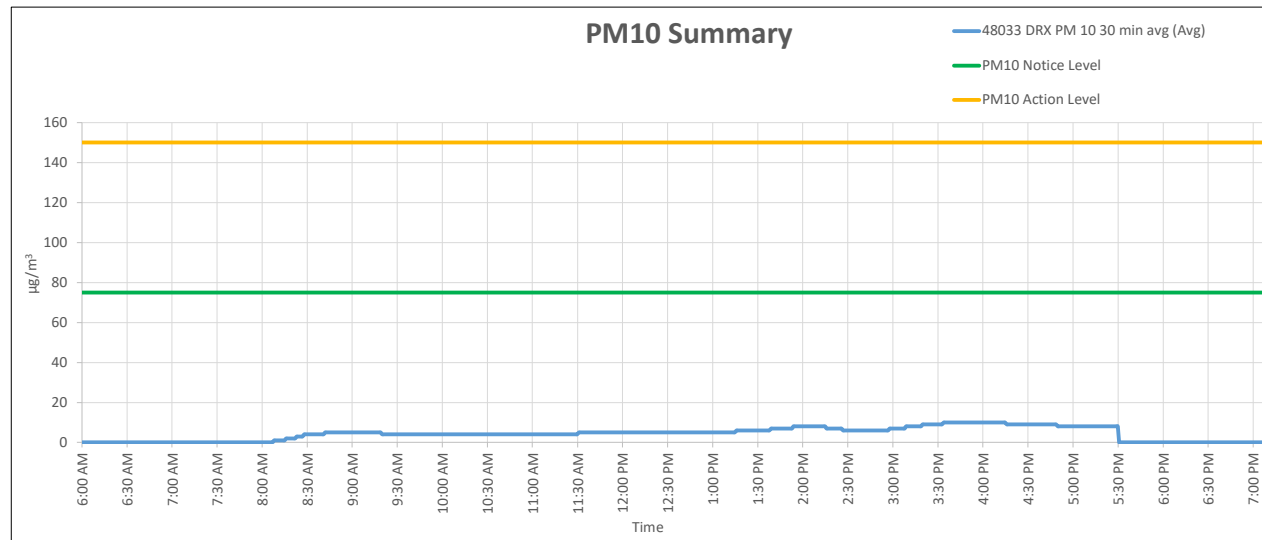
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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 ($\mu\text{g}/\text{m}^3$)
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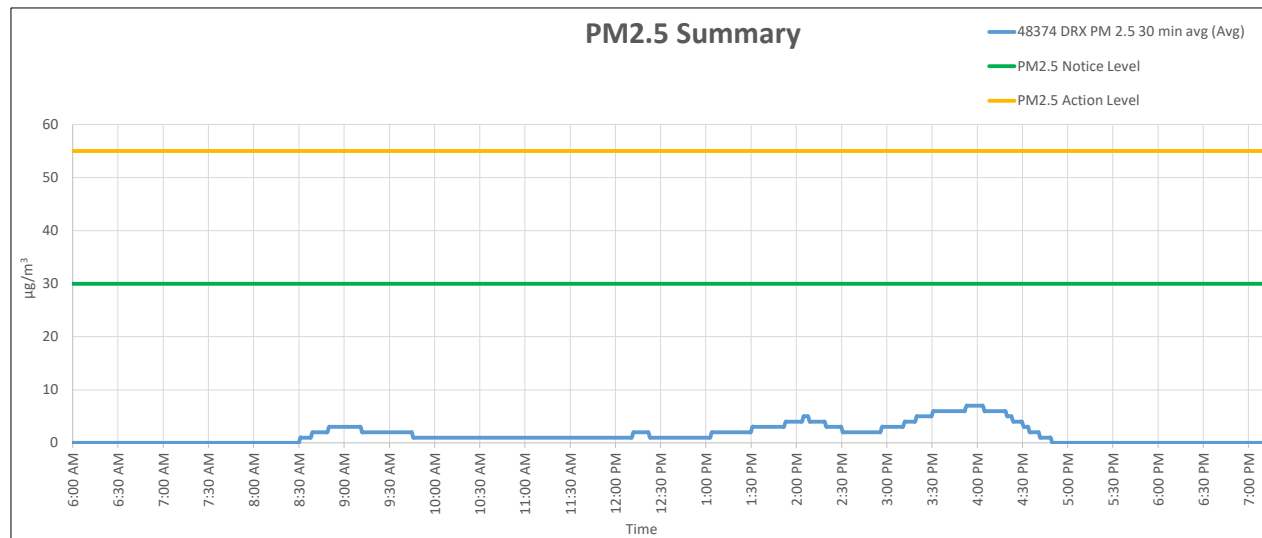
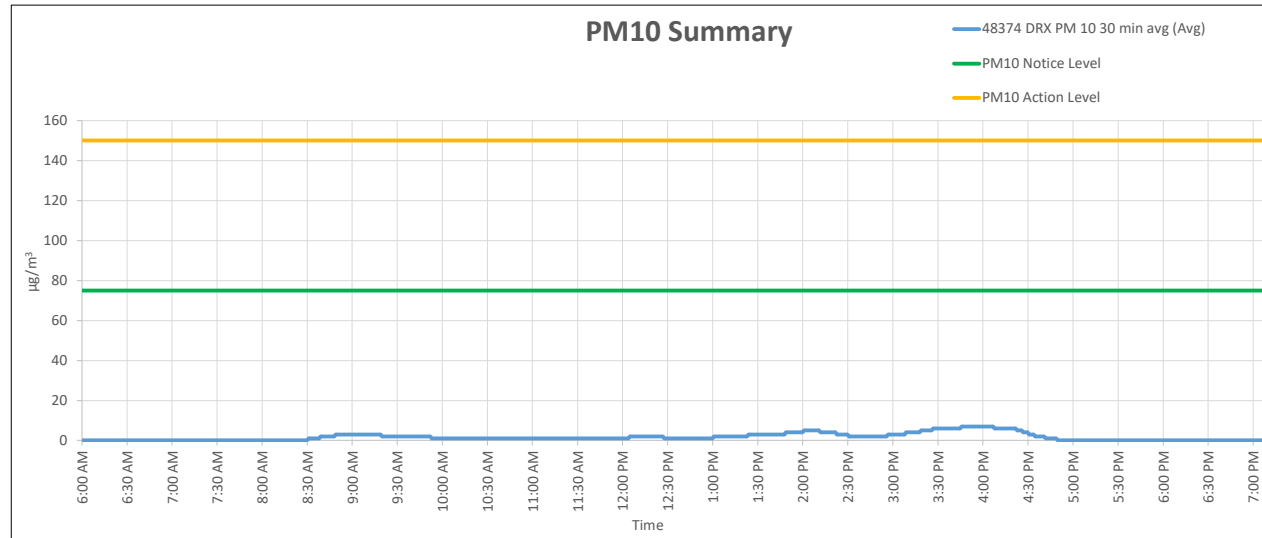
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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	8:08 AM	5:30 PM	5.97	10.00	5.77	10.00



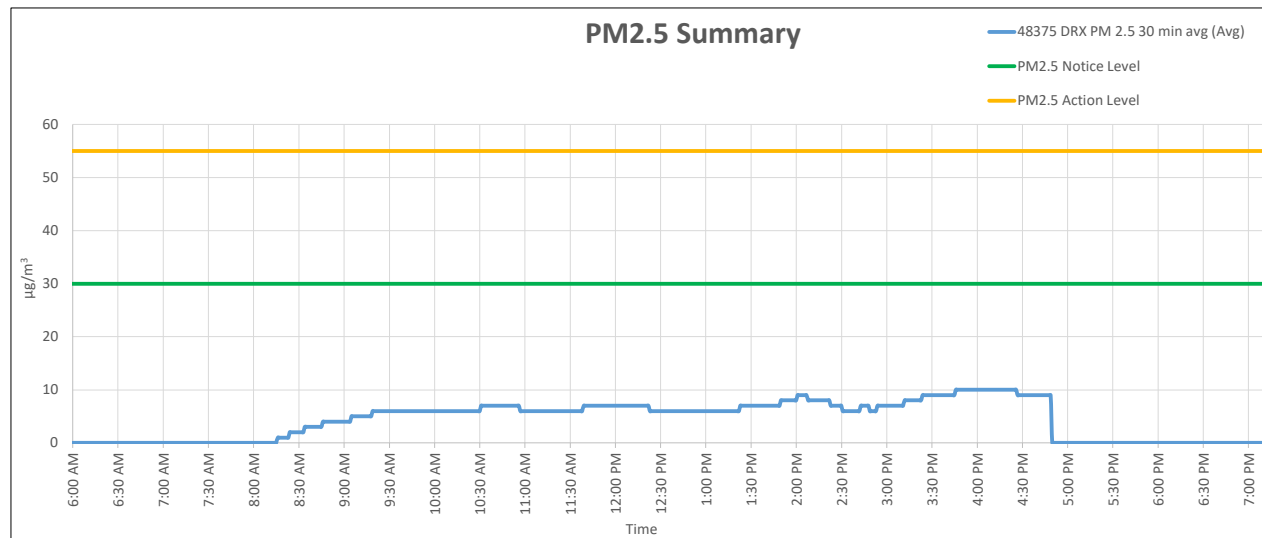
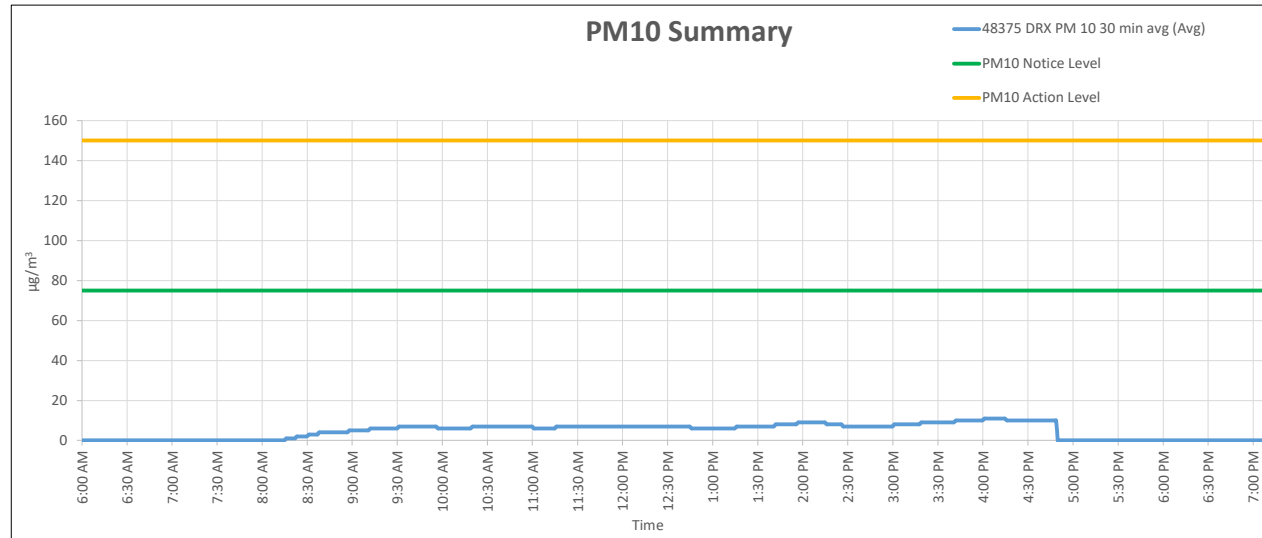
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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	8:31 AM	4:41 PM	2.58	7.00	2.42	7.00



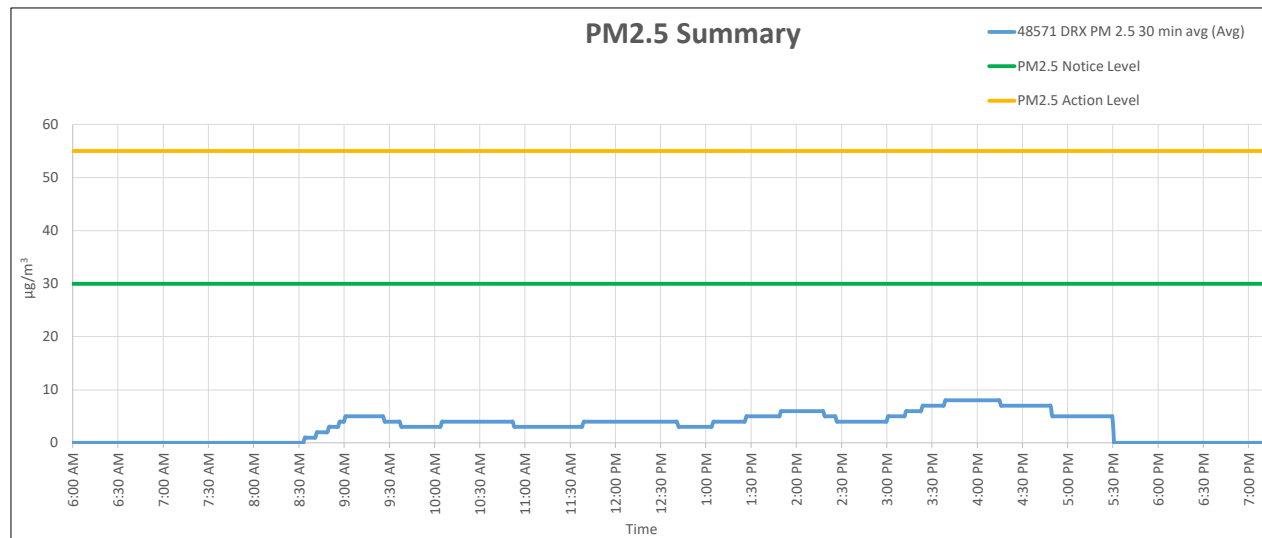
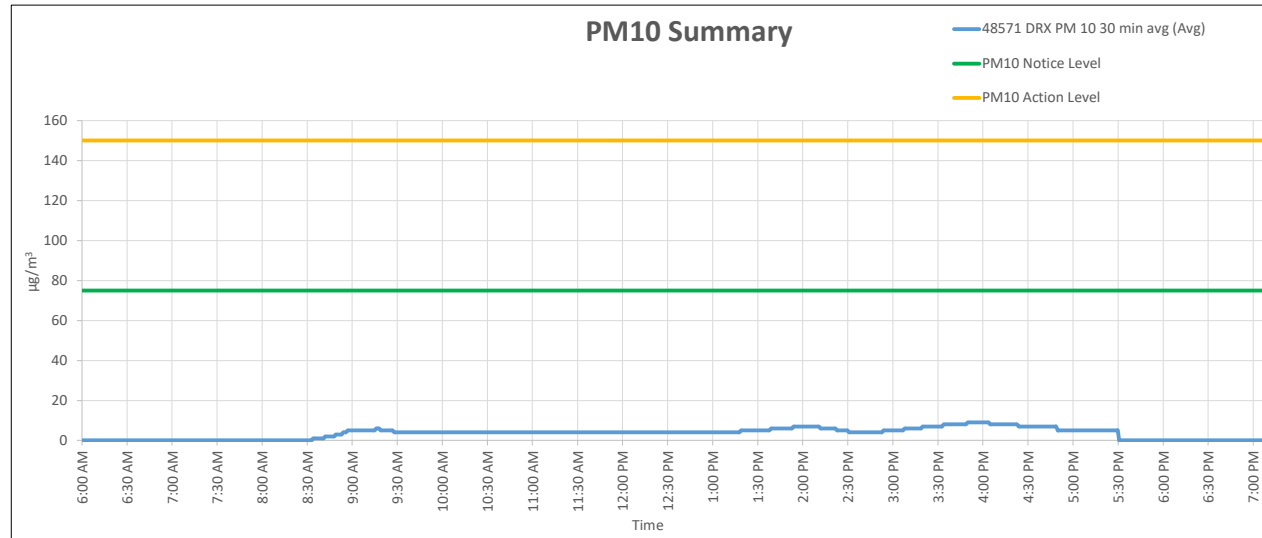
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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	8:16 AM	4:49 PM	7.12	11.00	6.69	10.00



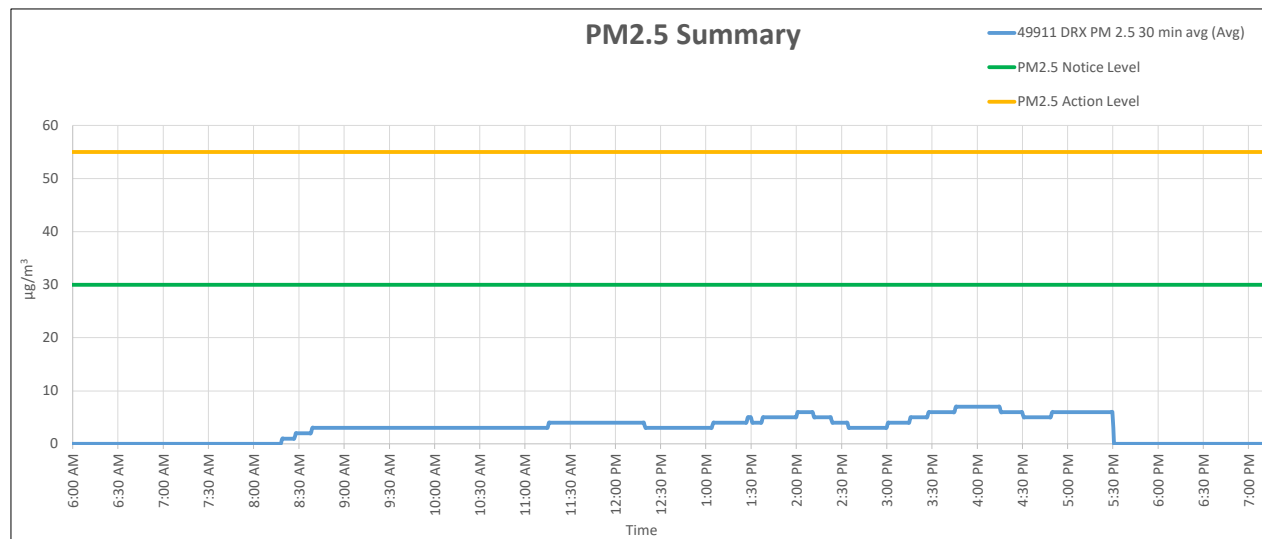
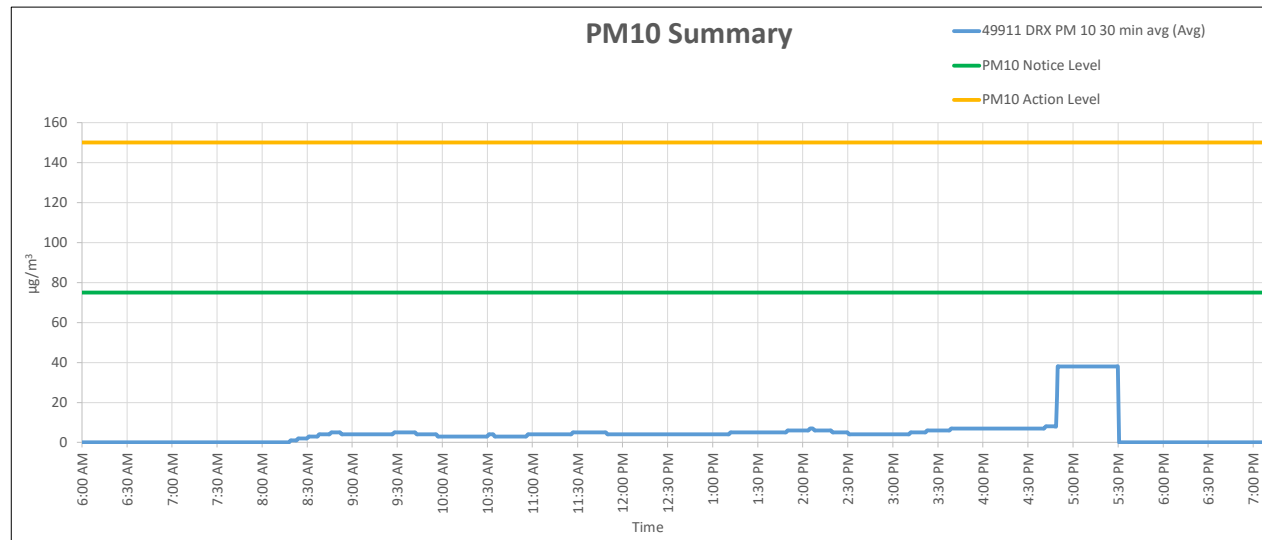
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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	8:34 AM	5:30 PM	5.00	9.00	4.64	8.00



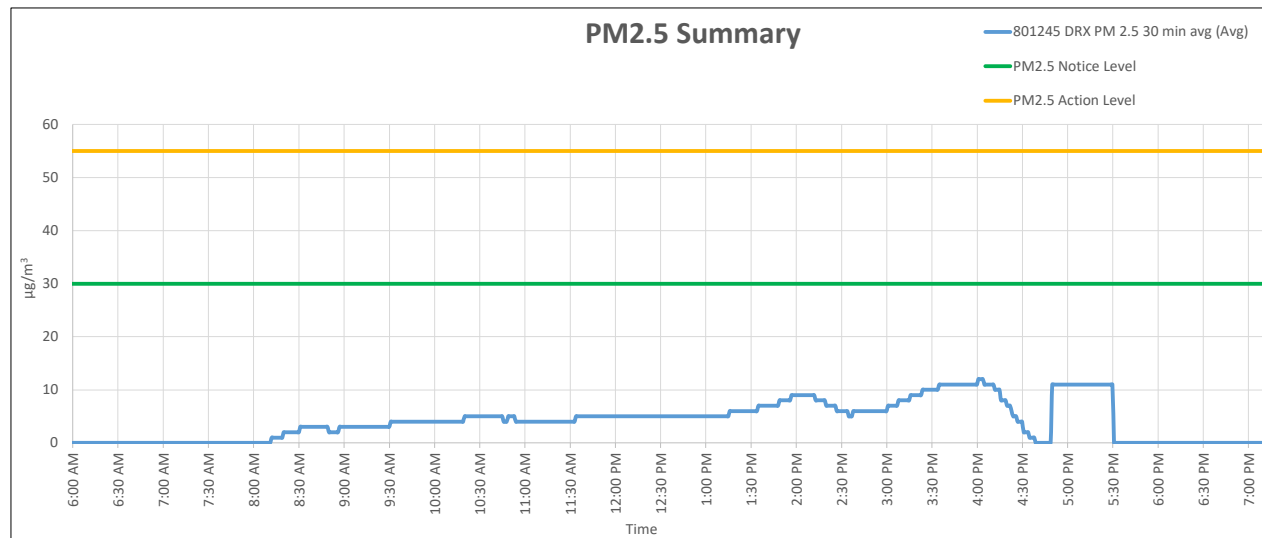
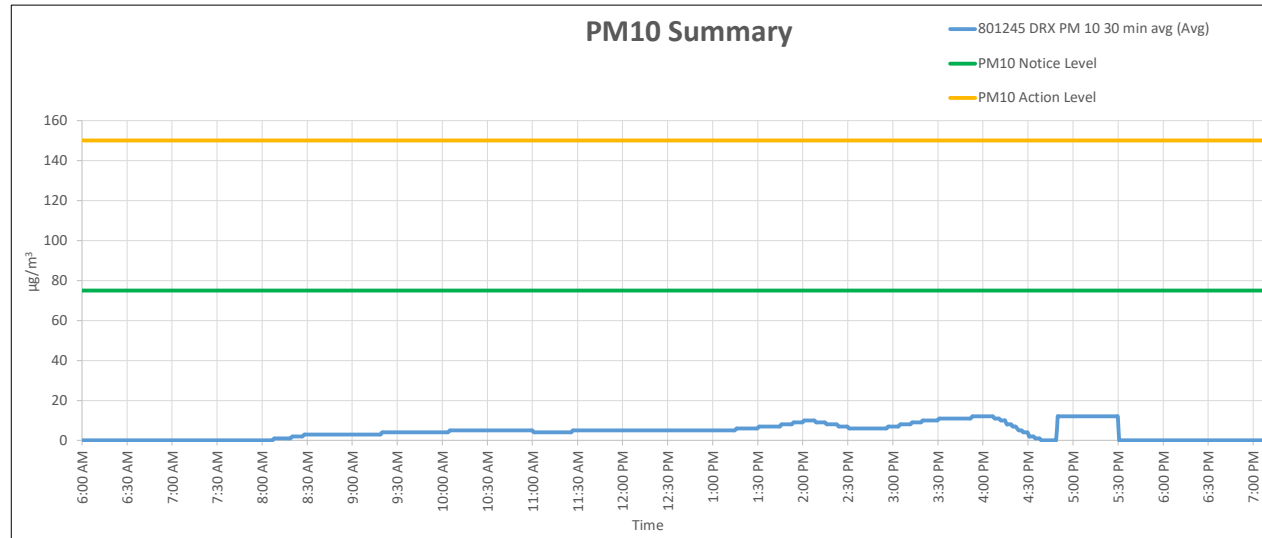
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

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 ($\mu\text{g}/\text{m}^3$)
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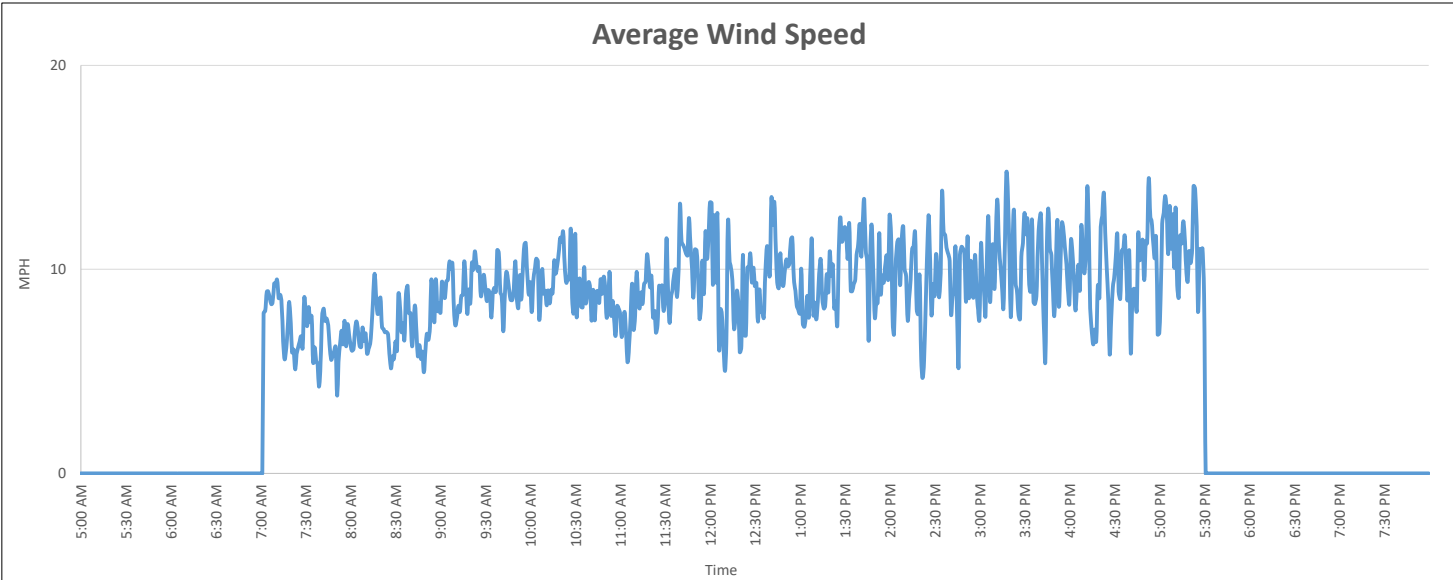
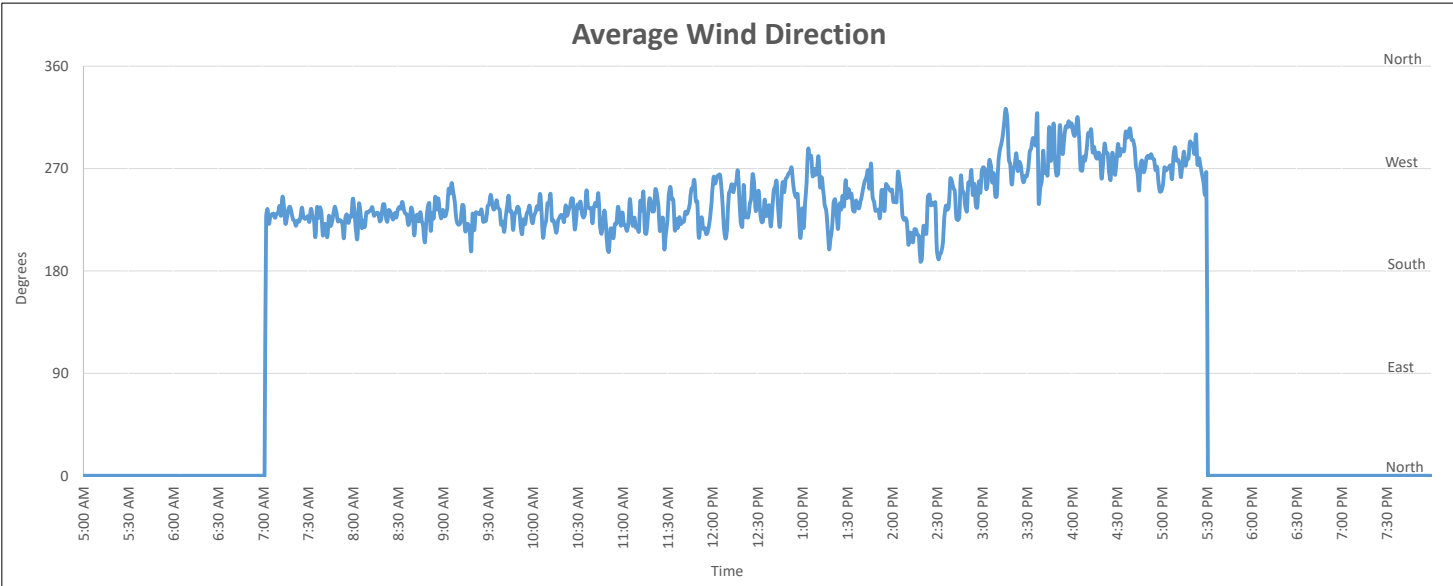


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 6, 2024

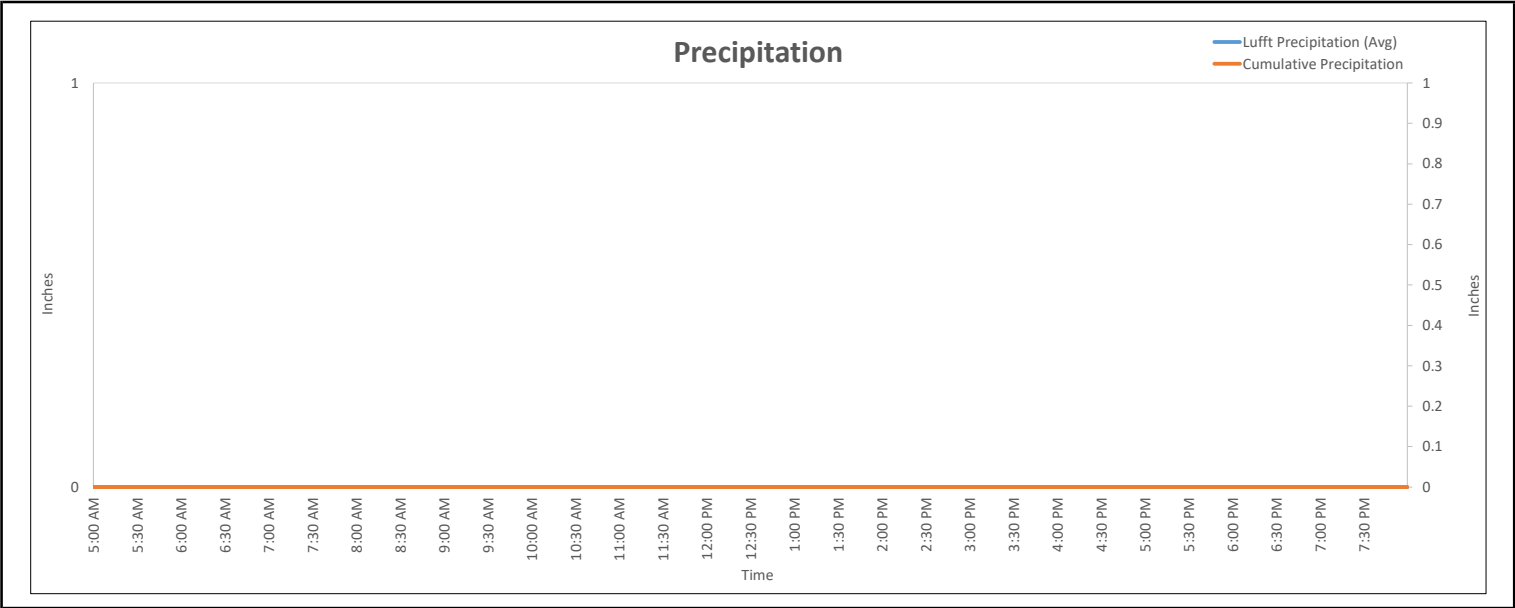
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Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, September 9, 2024

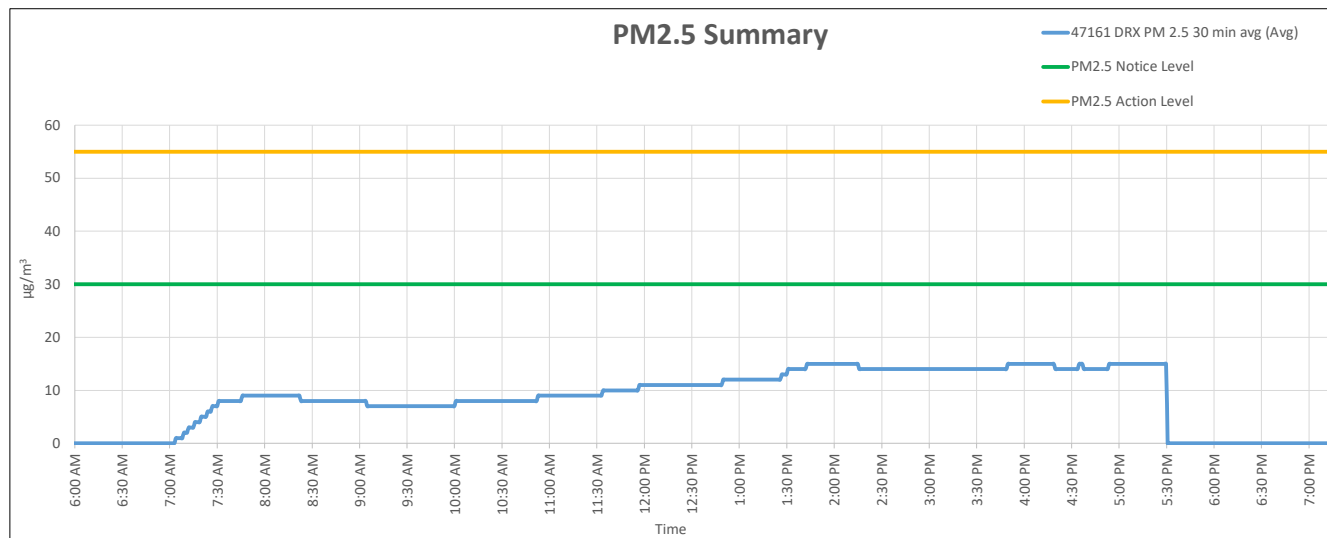
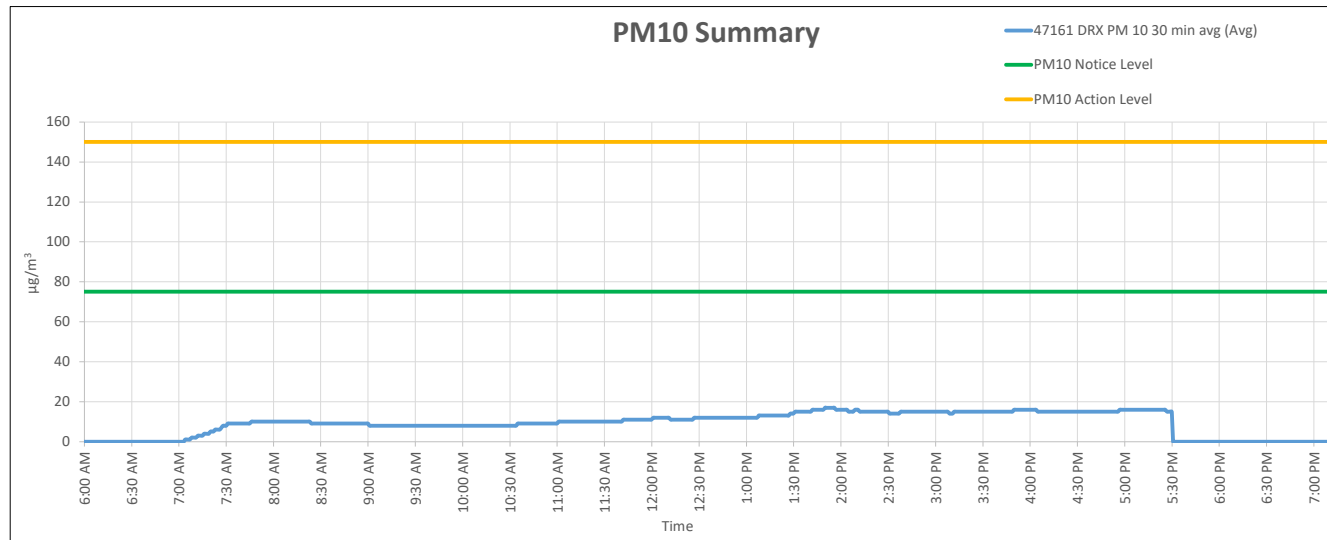


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Monday, September 9, 2024



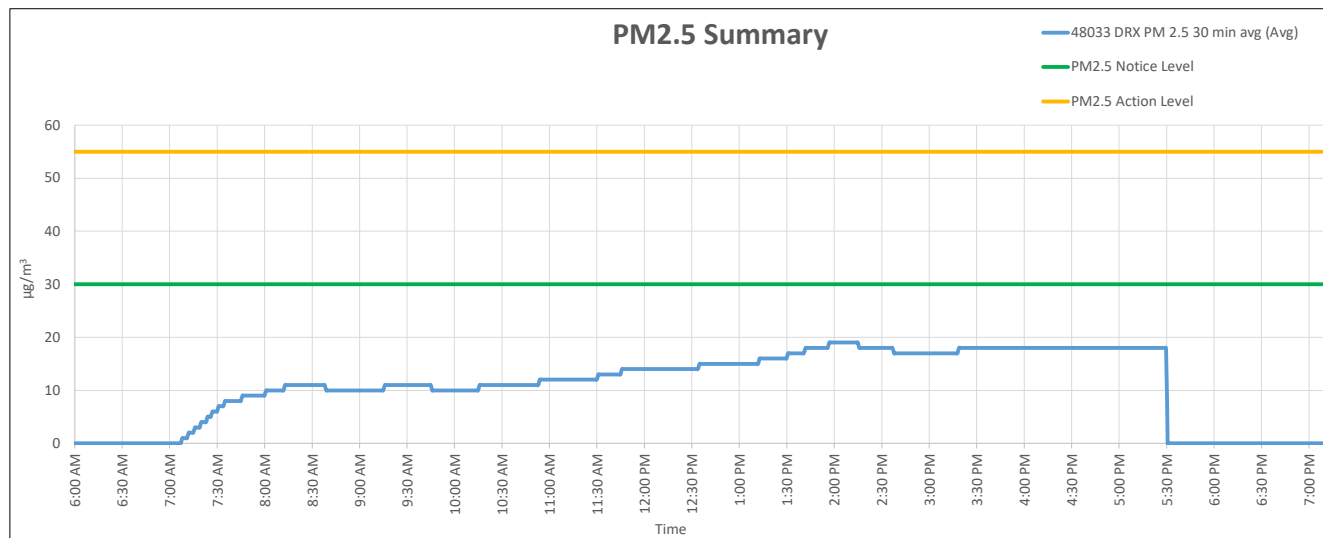
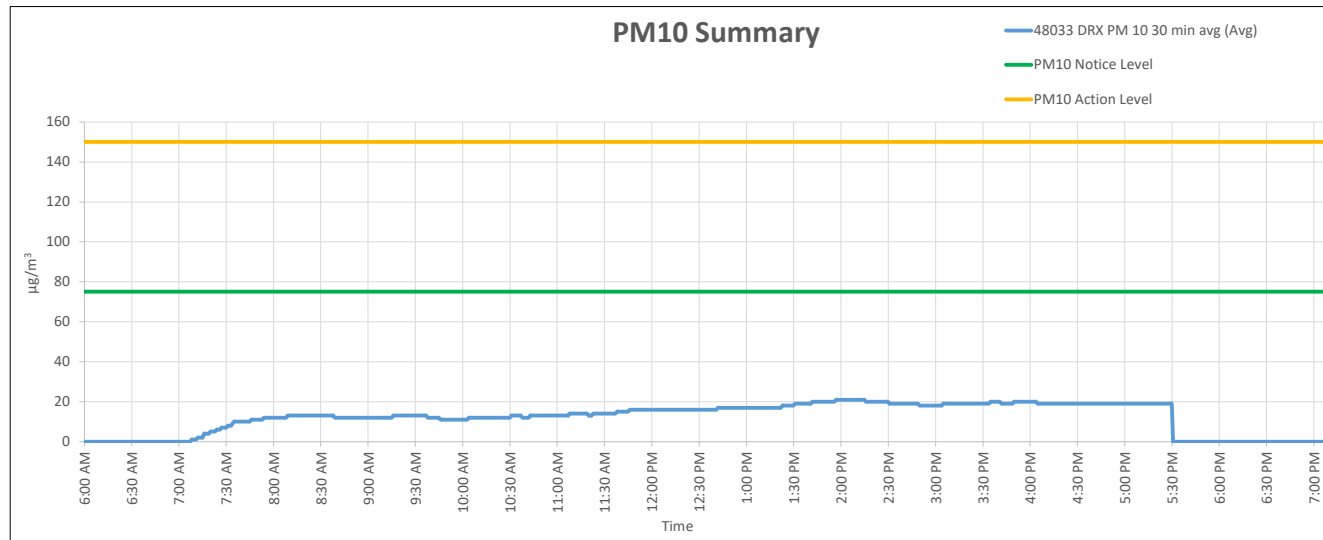
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 9, 2024

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 ($\mu\text{g}/\text{m}^3$)
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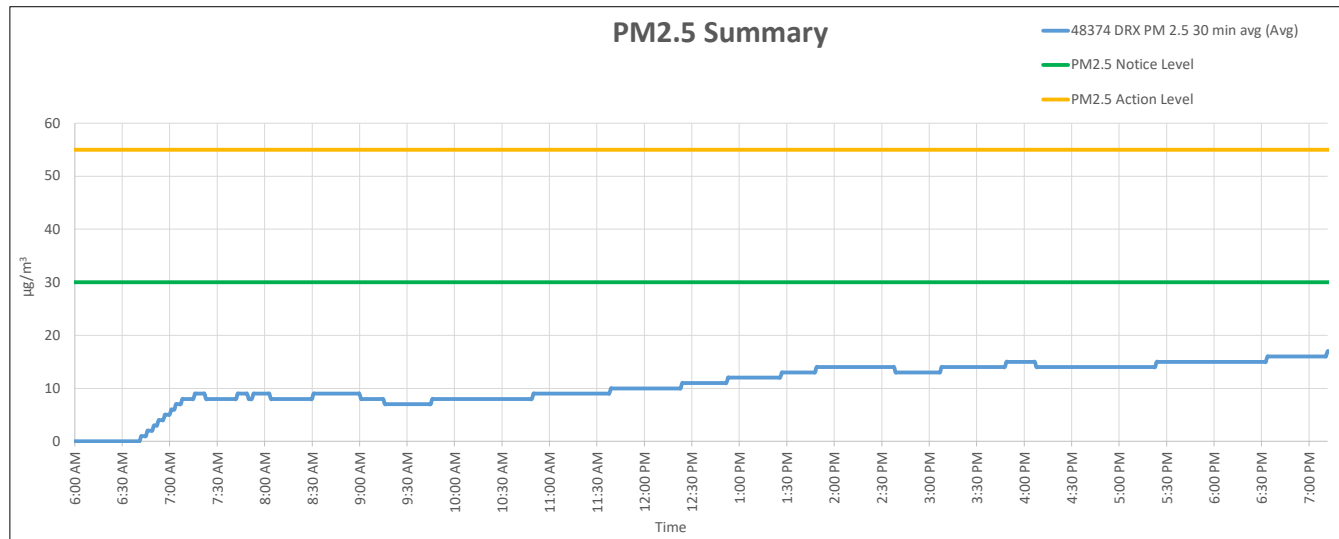
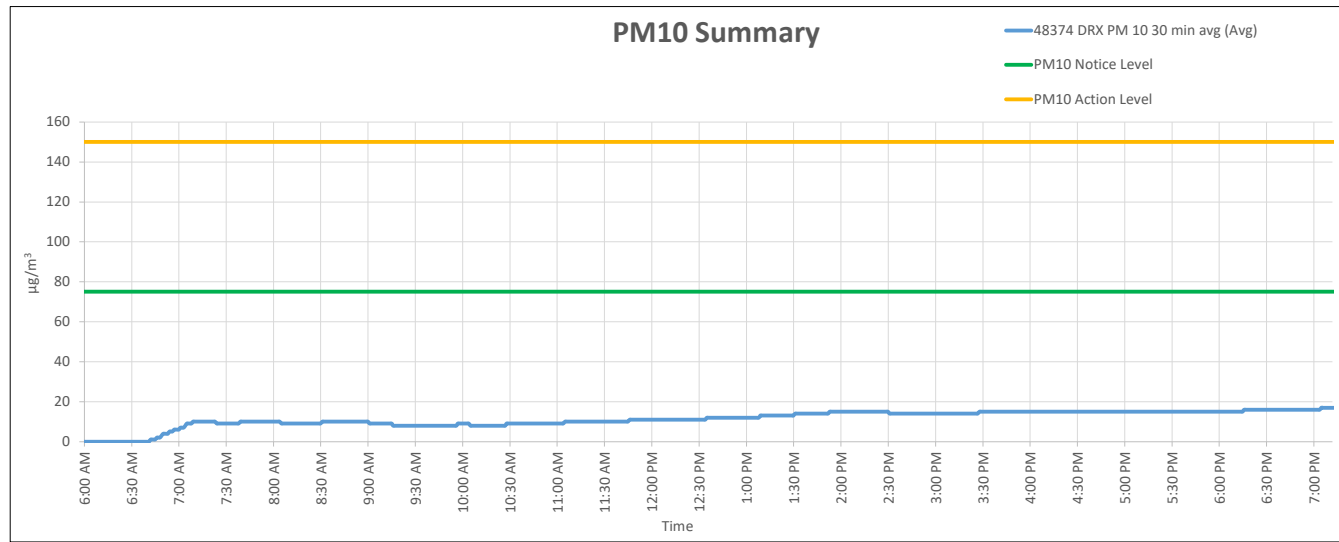
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 9, 2024

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	7:08 AM	5:30 PM	15.45	21.00	13.84	19.00



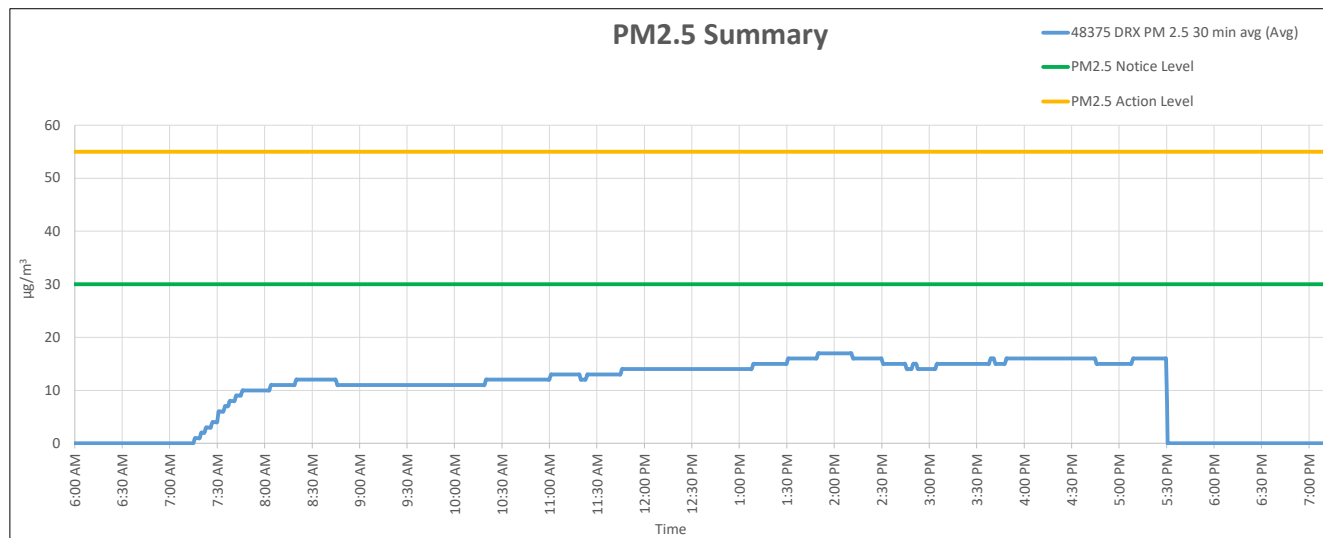
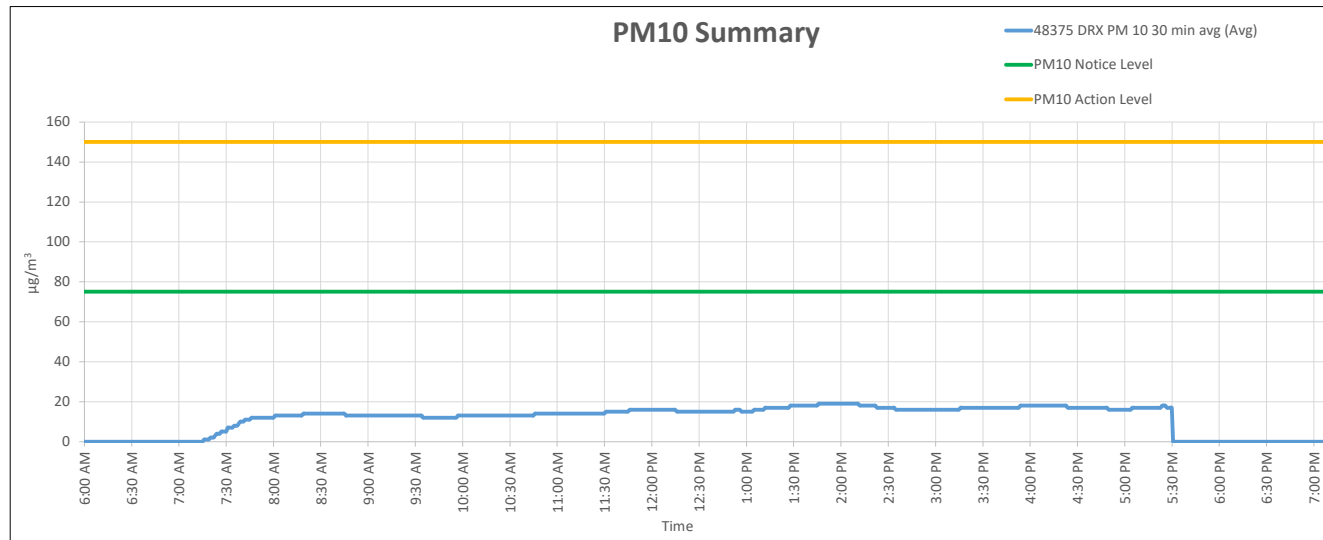
Union Pacific Railroad
Houston Wood Preserving Works Site
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	6:42 AM	8:38 PM	12.27	18.00	11.59	17.00



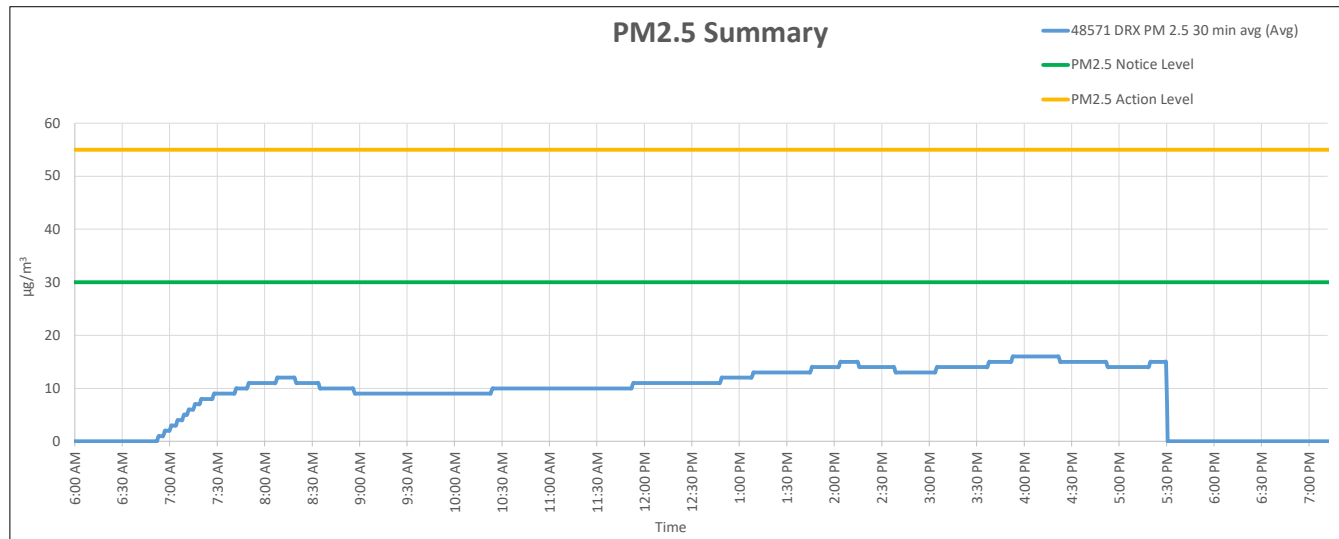
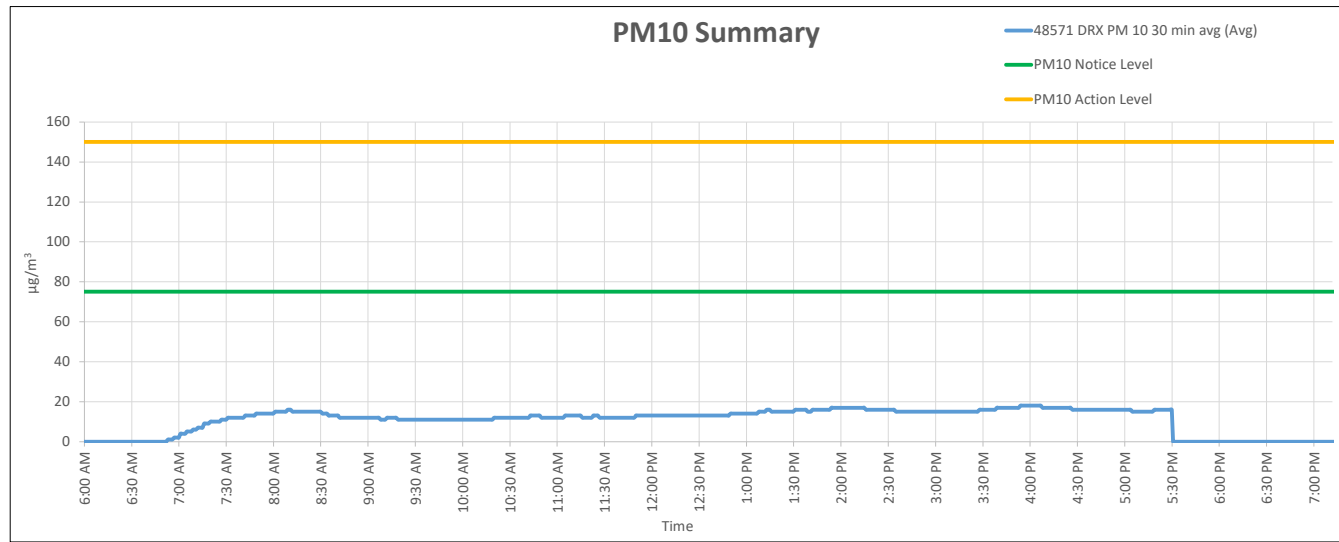
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 9, 2024

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	7:16 AM	5:30 PM	14.89	19.00	13.28	17.00



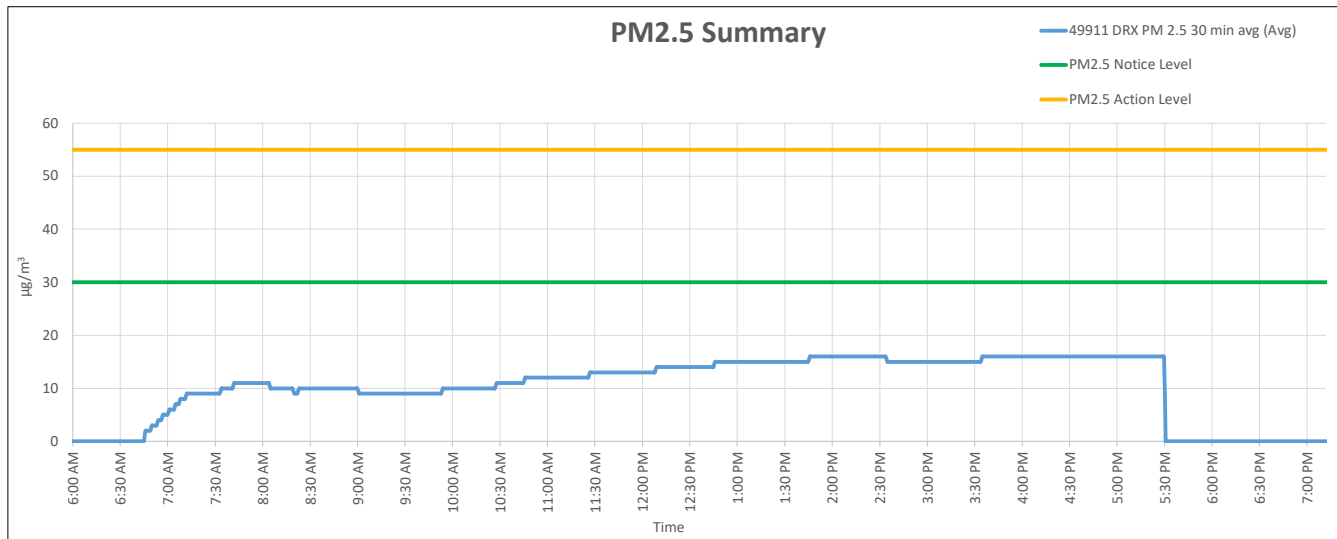
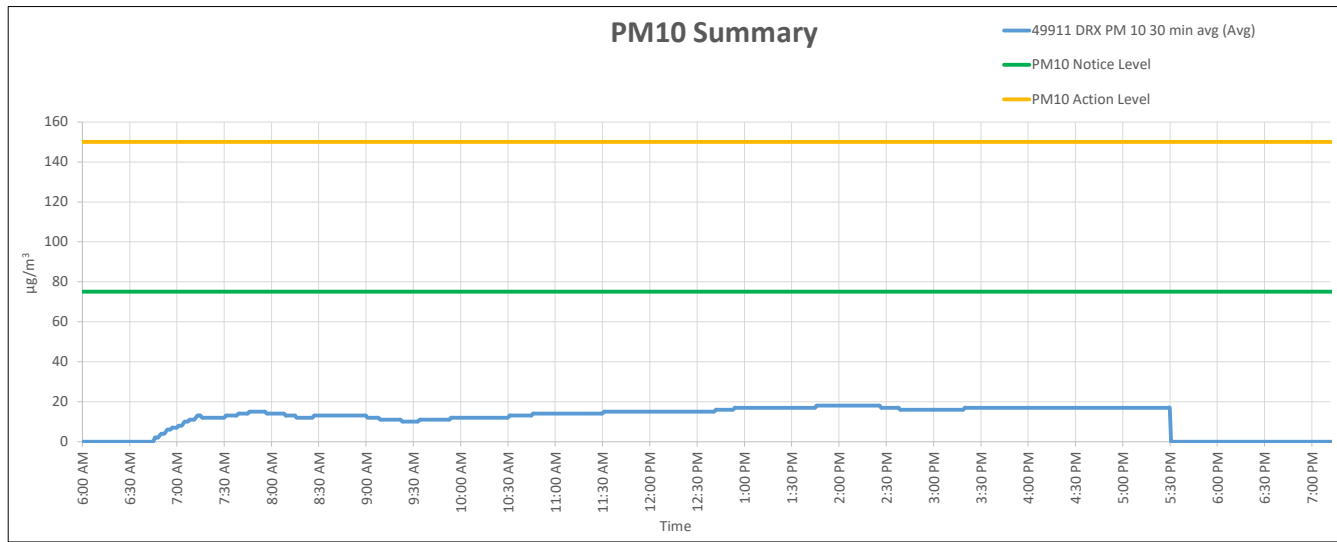
Union Pacific Railroad
Houston Wood Preserving Works Site
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	6:53 AM	5:30 PM	13.61	18.00	11.55	16.00



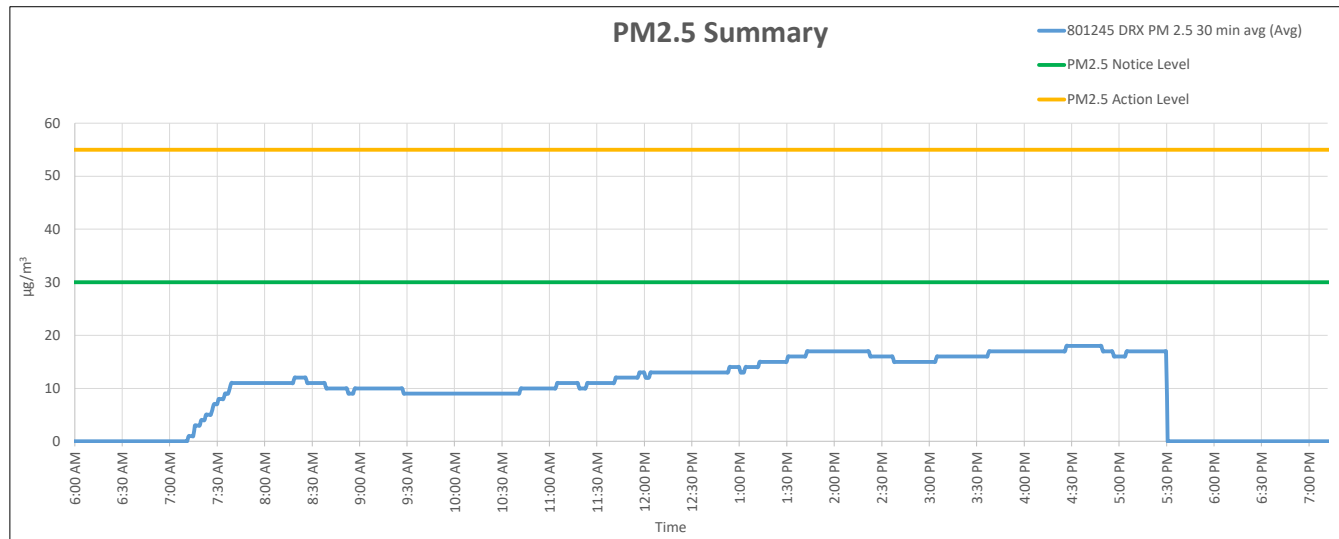
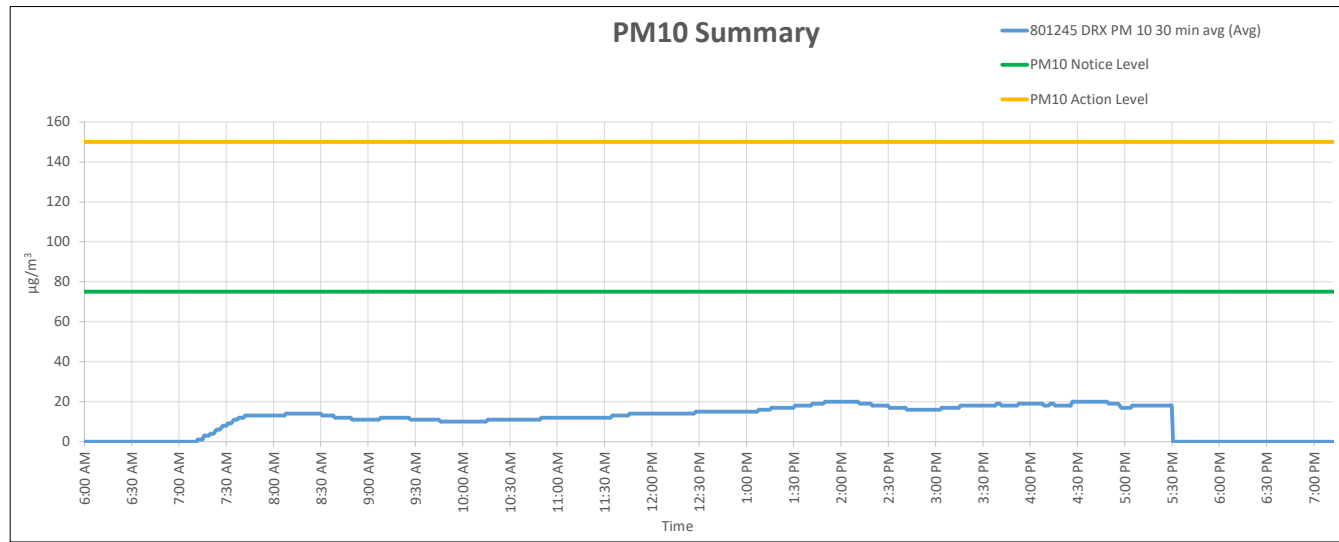
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	6:46 AM	5:30 PM	14.61	18.00	12.76	16.00

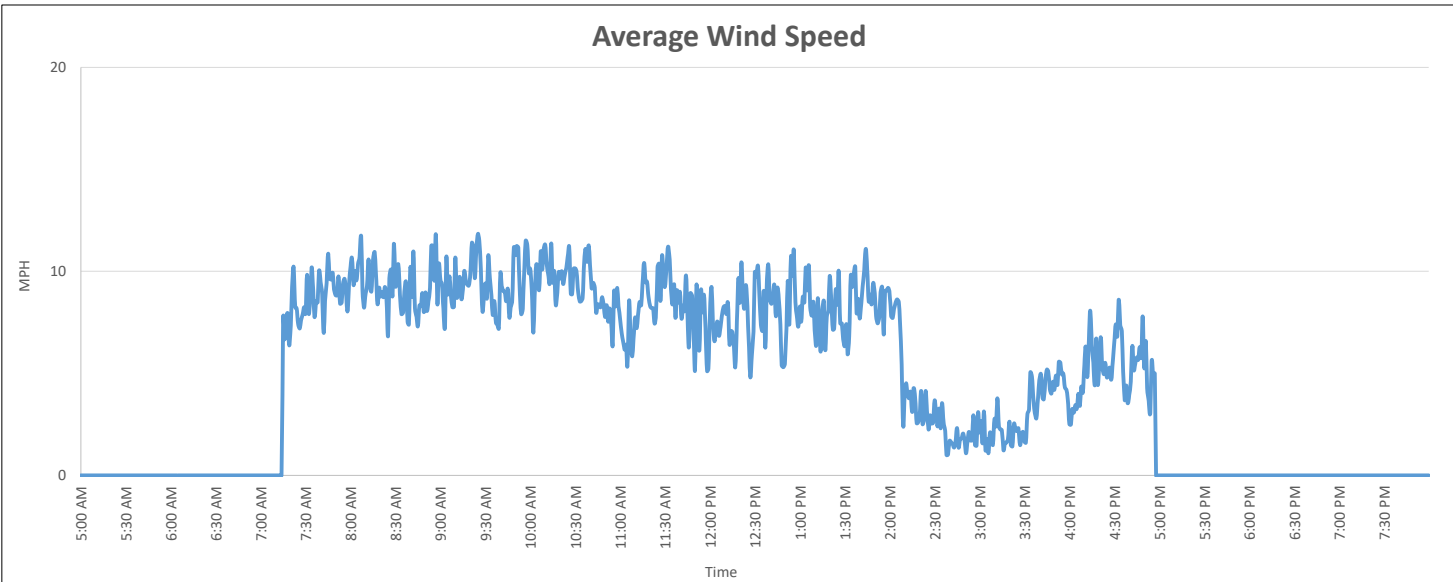
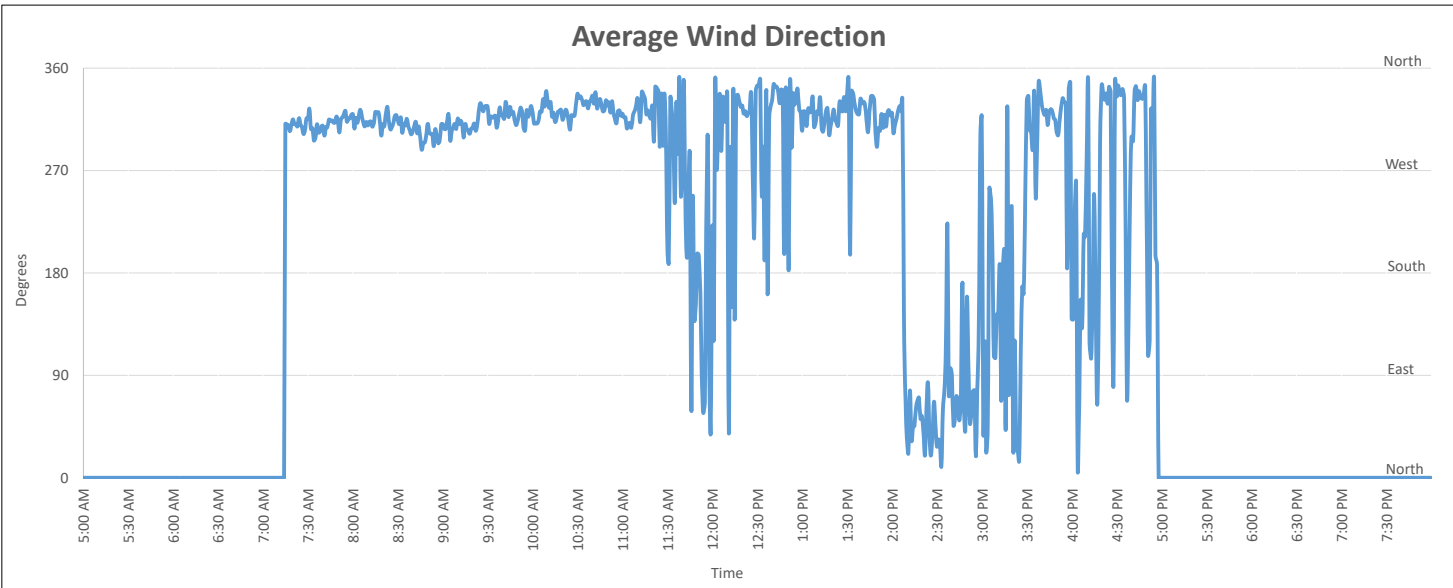


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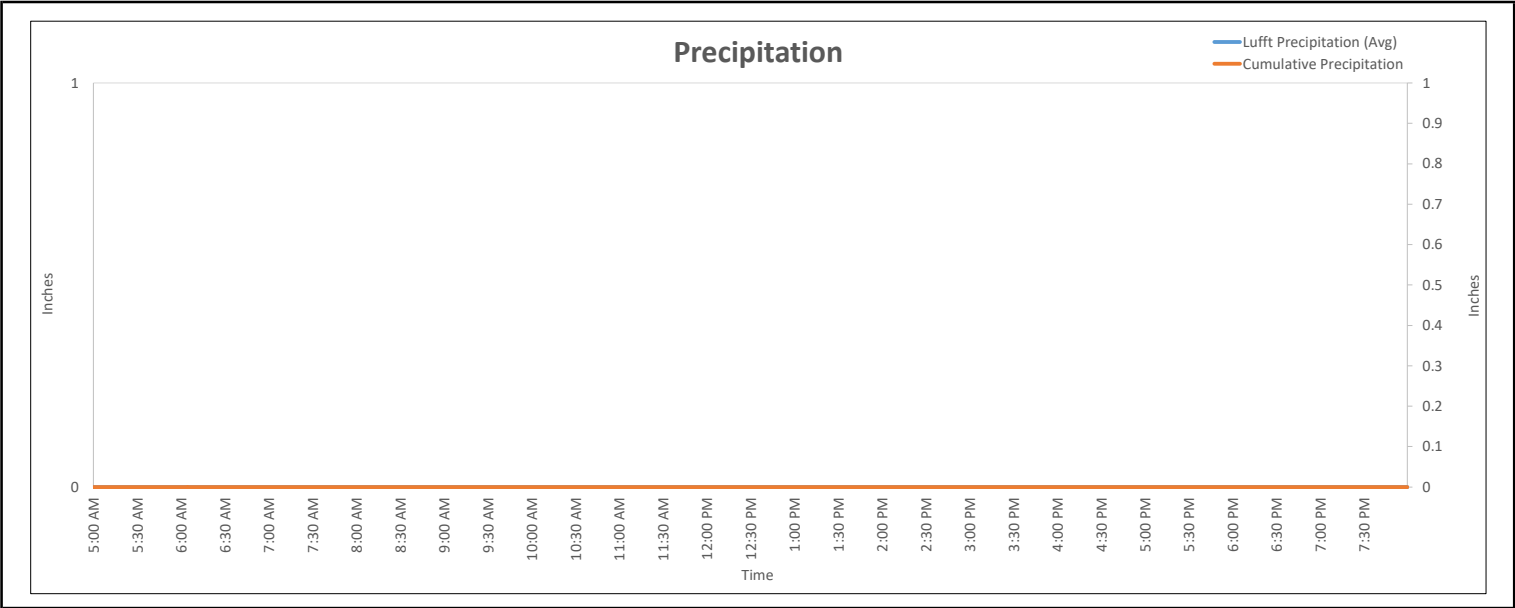
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:12 AM	5:30 PM	14.60	20.00	12.97	18.00



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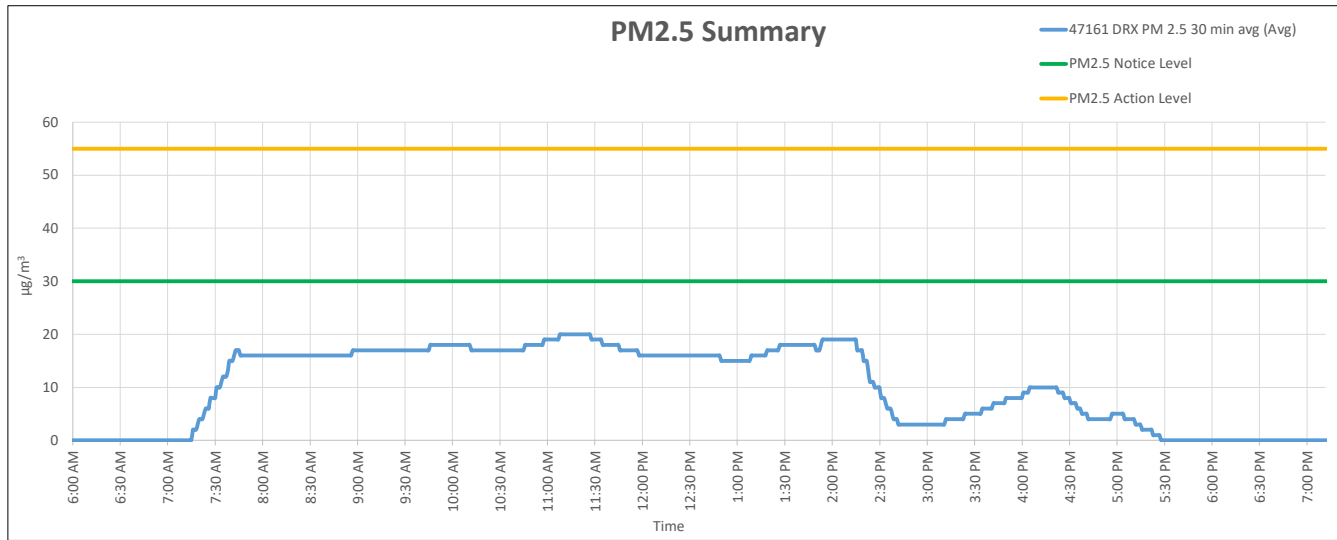
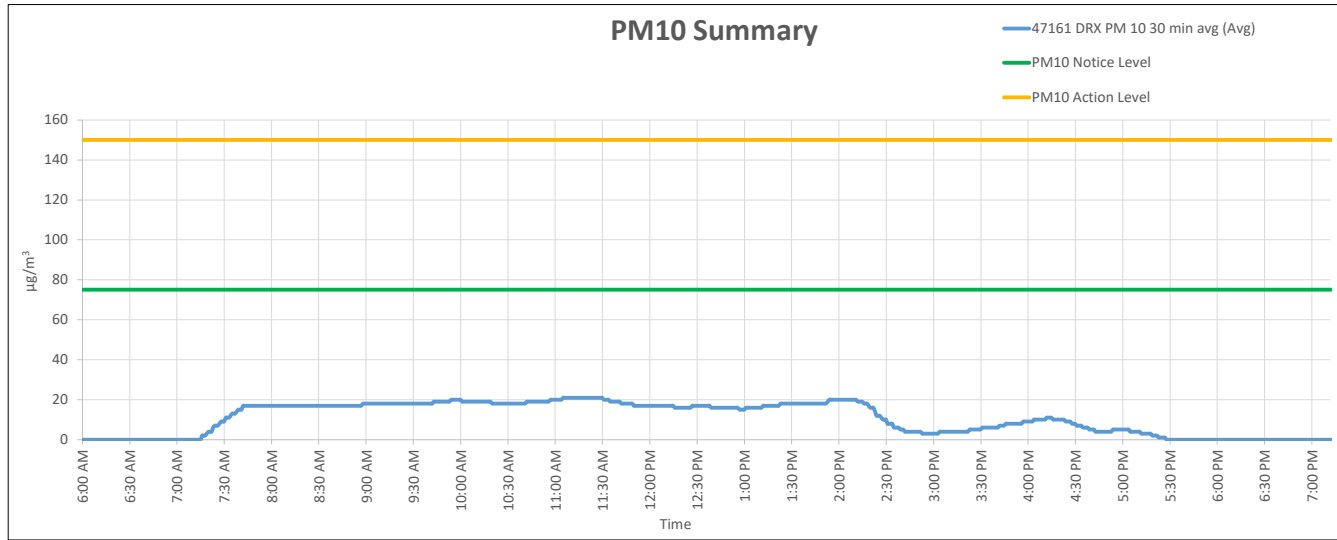


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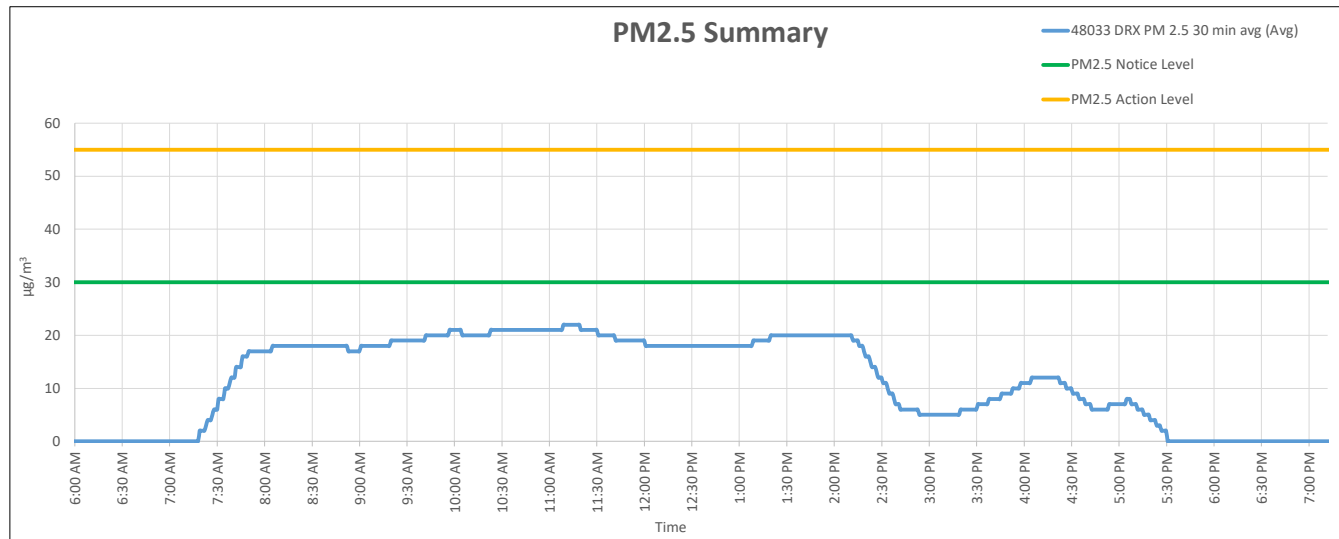
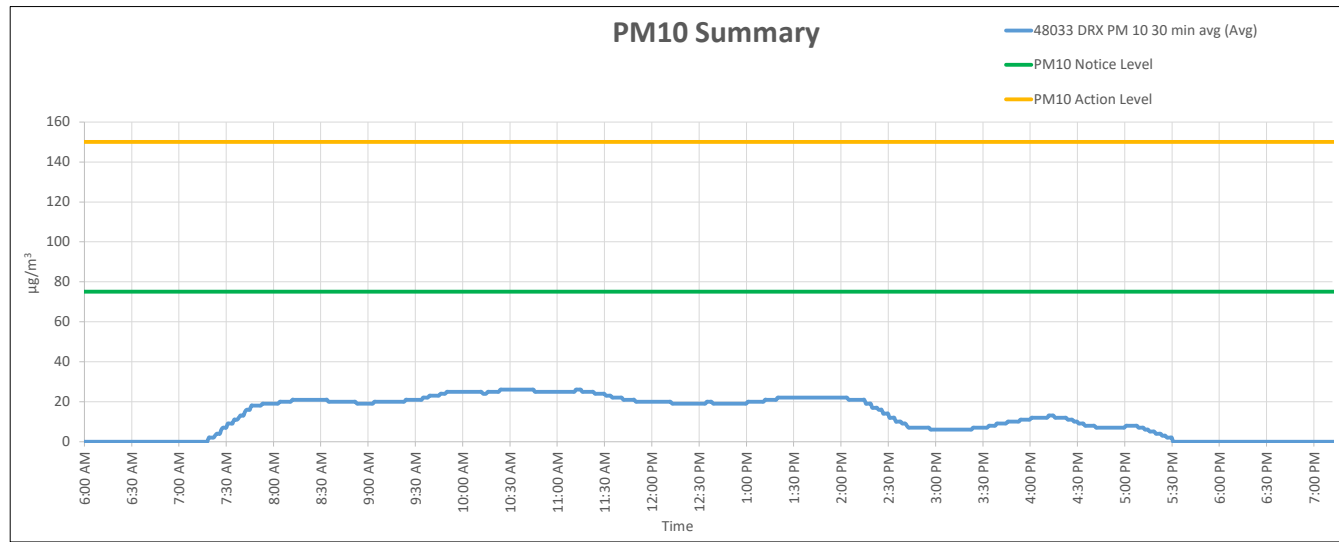
Union Pacific Railroad
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:16 AM	5:22 PM	13.93	21.00	13.24	20.00



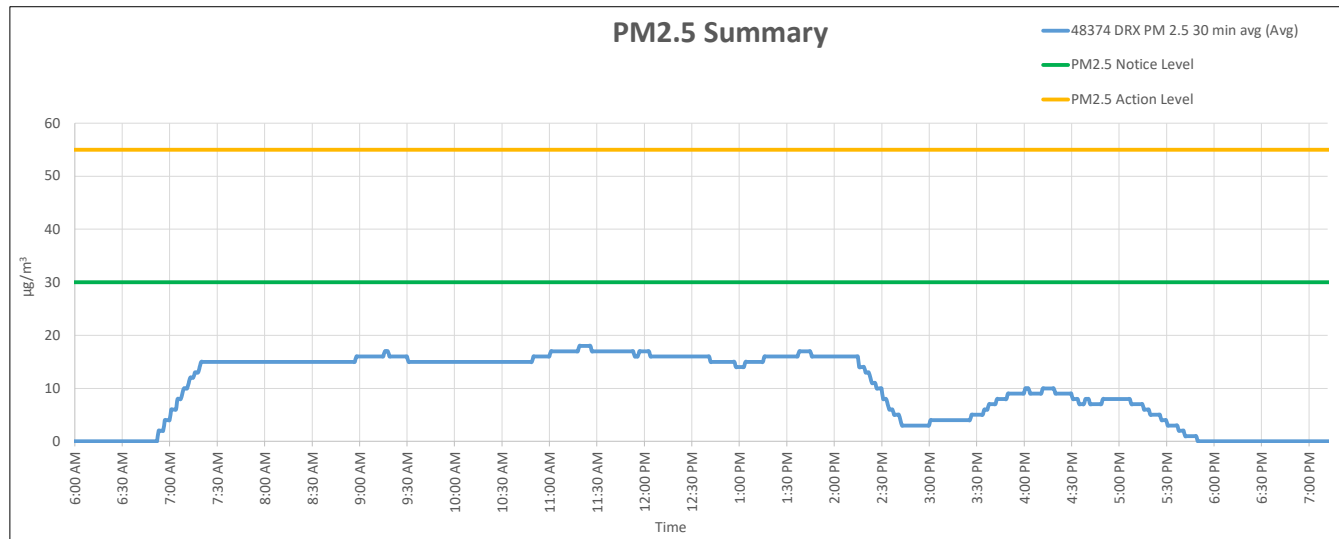
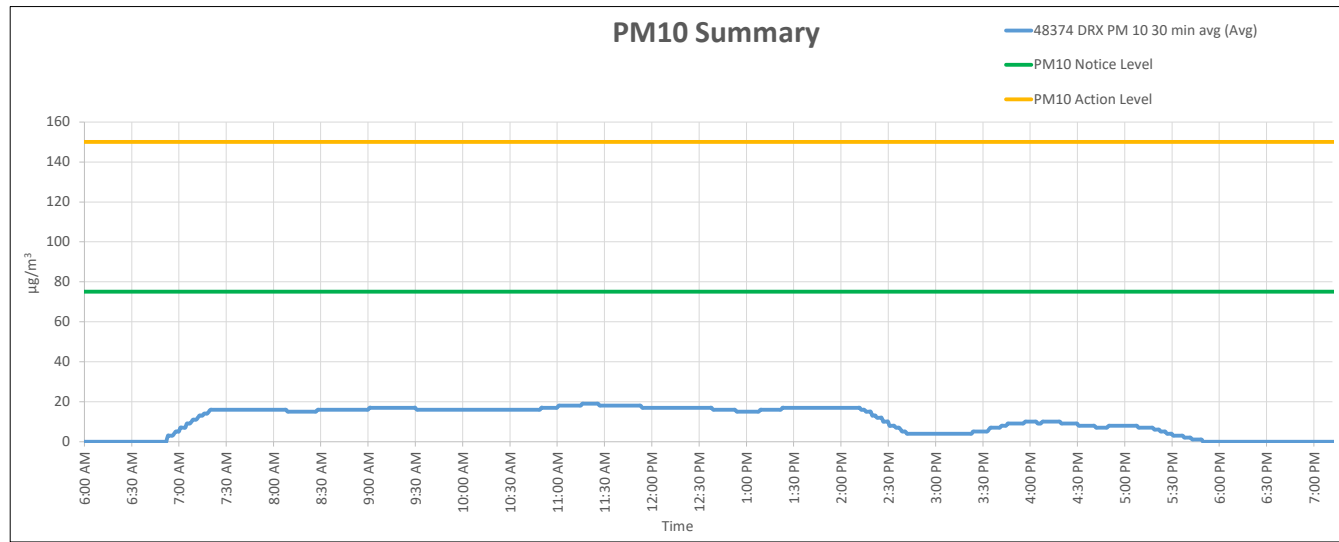
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:19 AM	5:30 PM	16.99	26.00	15.11	22.00



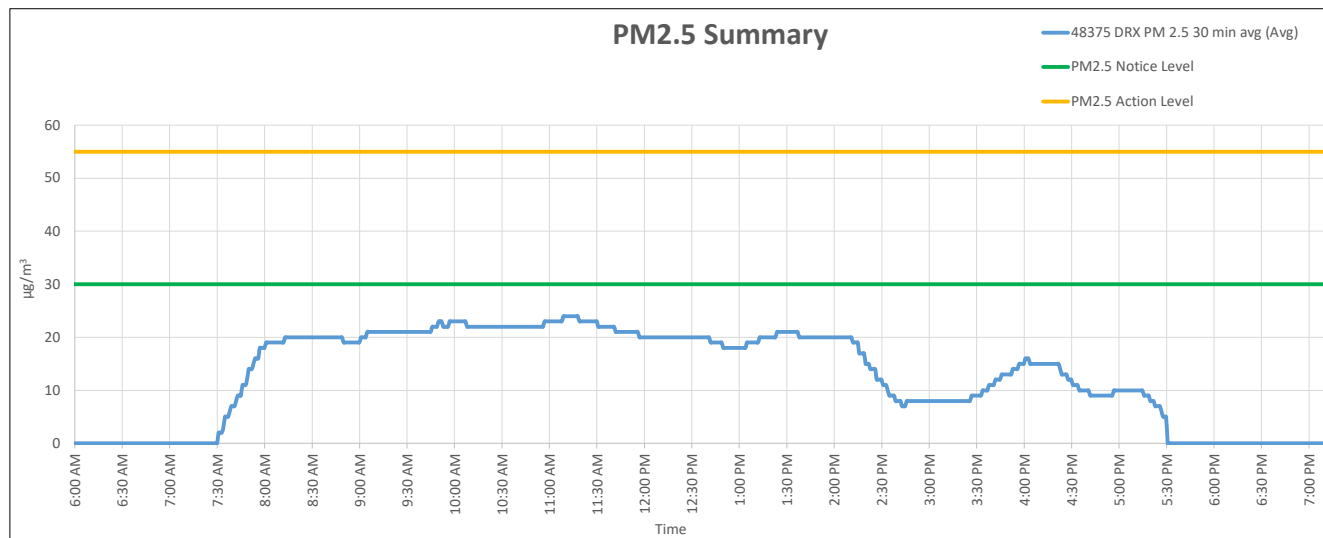
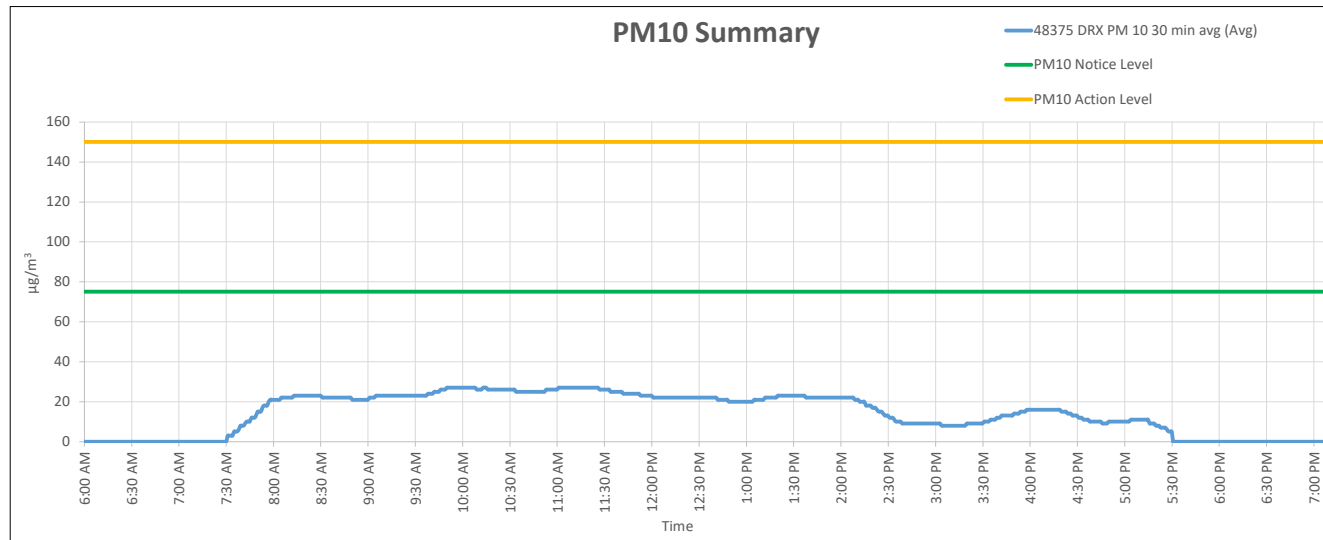
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	6:53 AM	5:42 PM	13.04	19.00	12.36	18.00



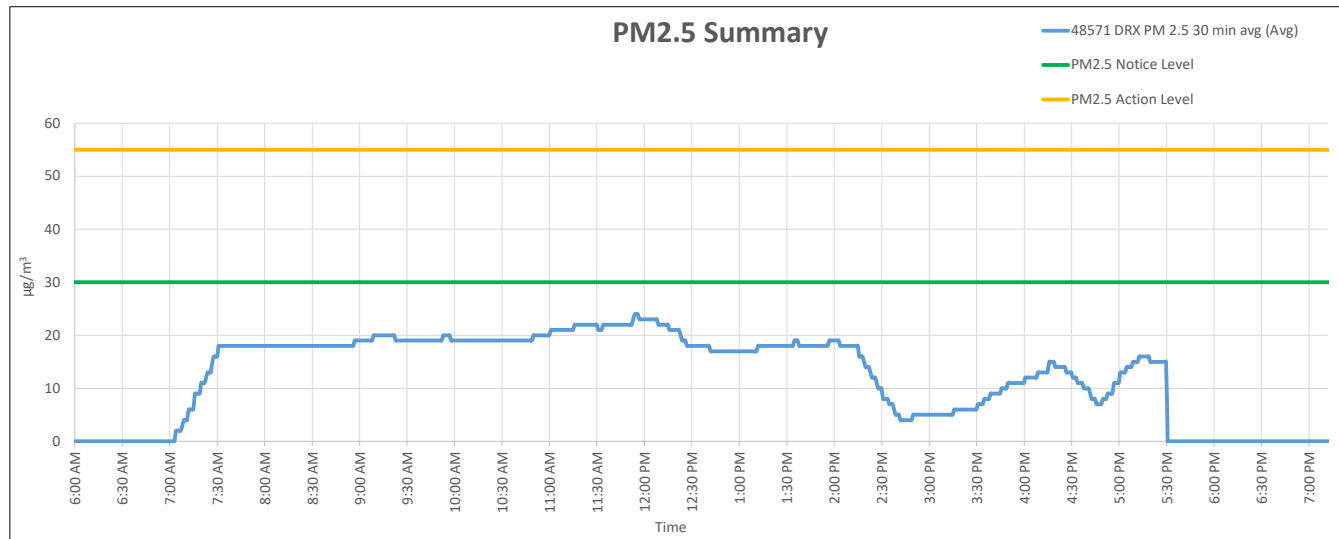
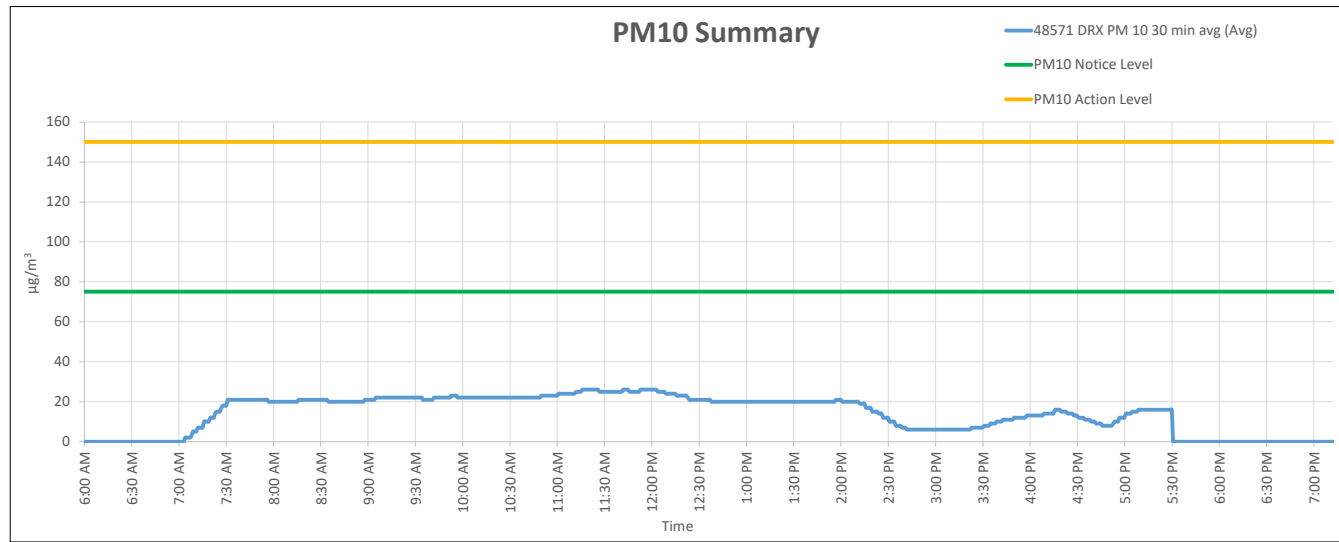
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:31 AM	5:30 PM	18.88	27.00	16.93	24.00



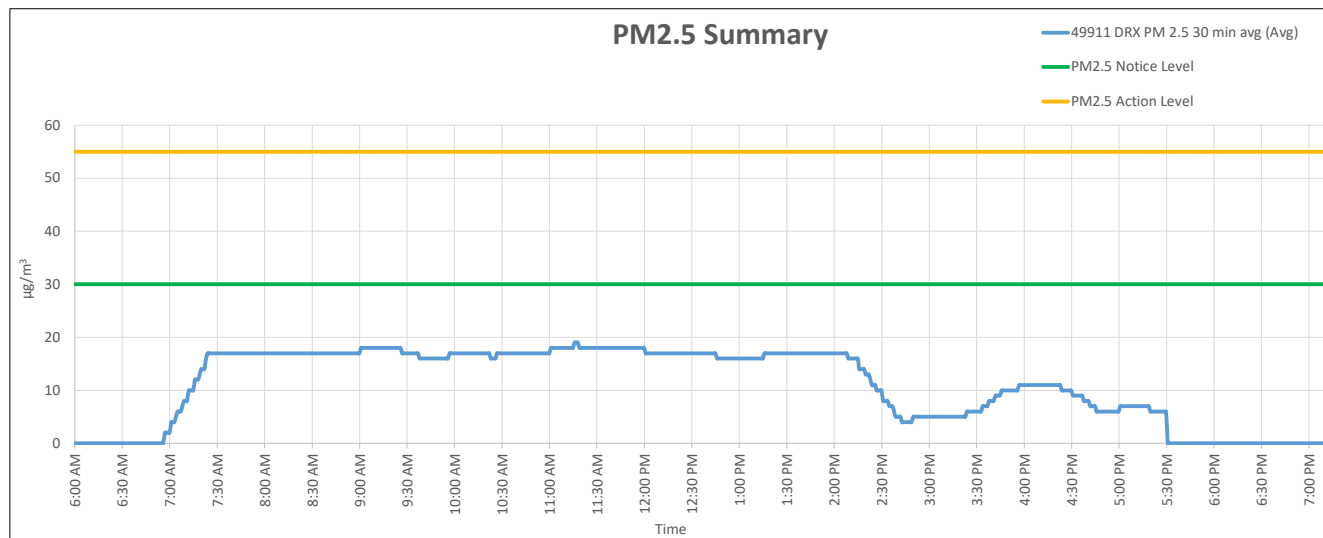
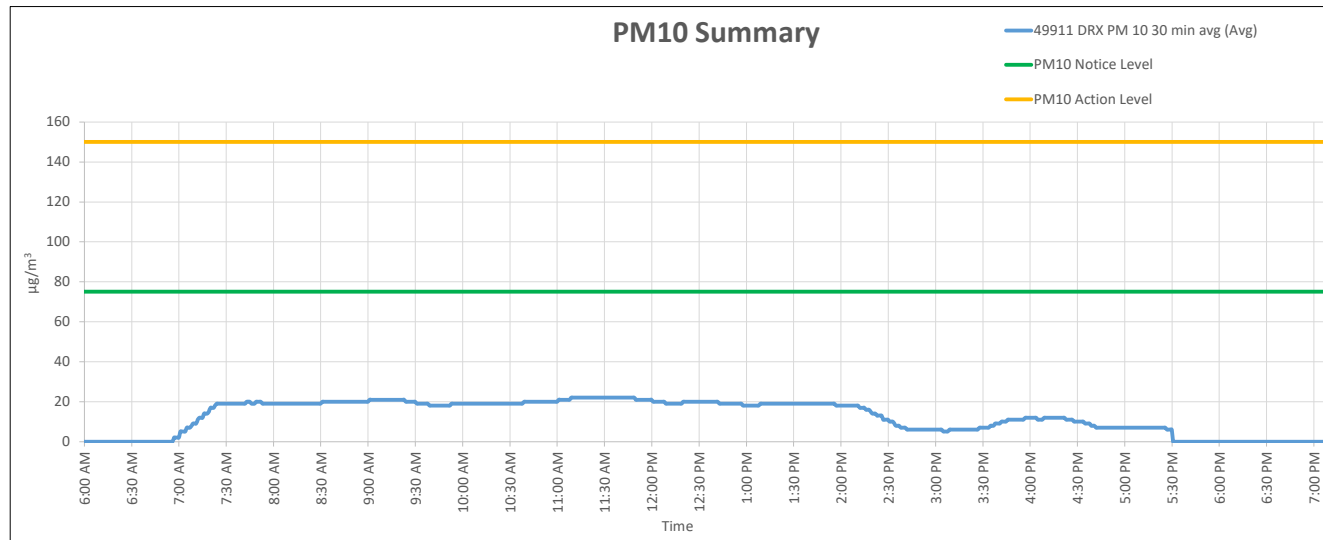
Union Pacific Railroad
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	7:04 AM	5:30 PM	17.85	26.00	15.81	24.00



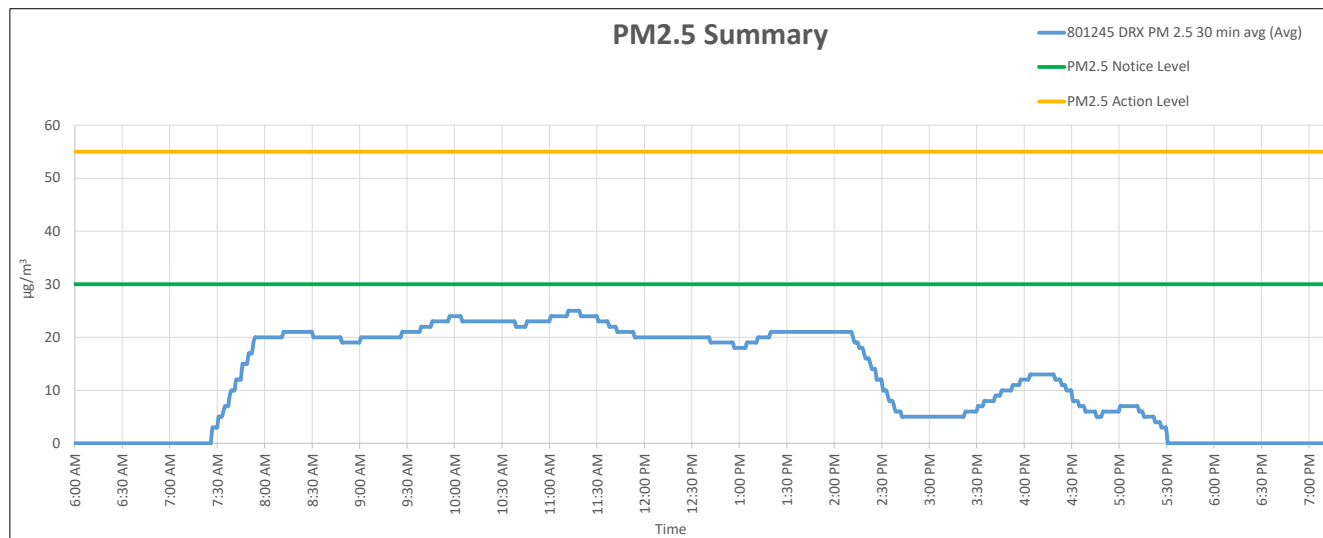
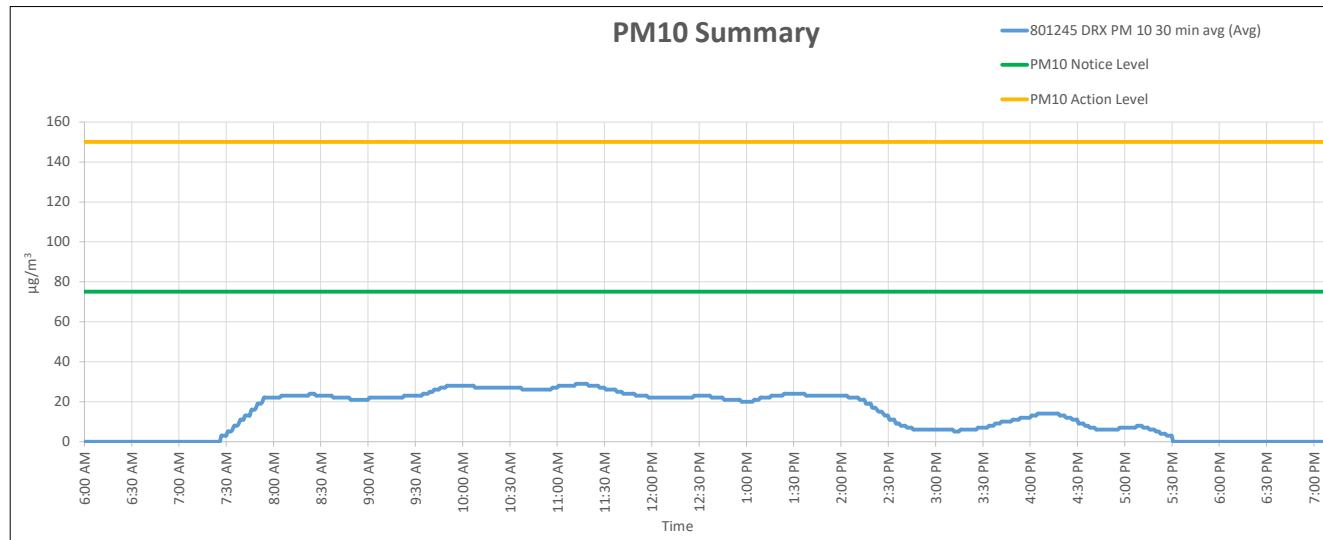
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	6:57 AM	5:30 PM	15.78	22.00	13.81	19.00

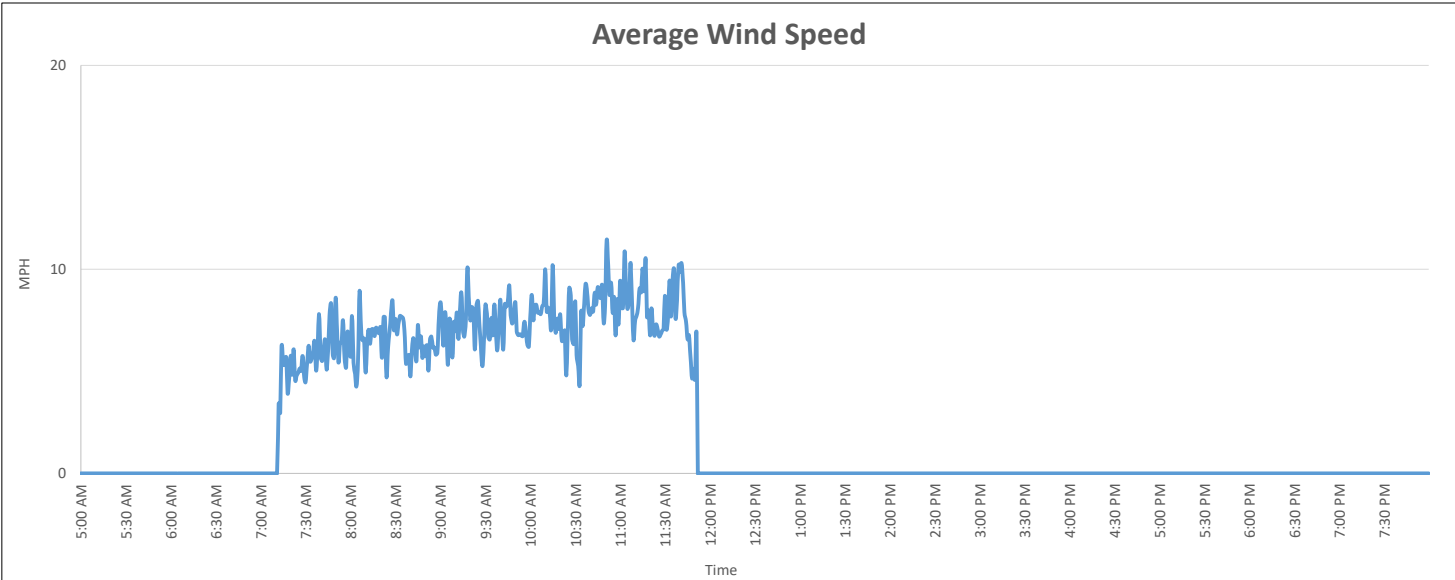
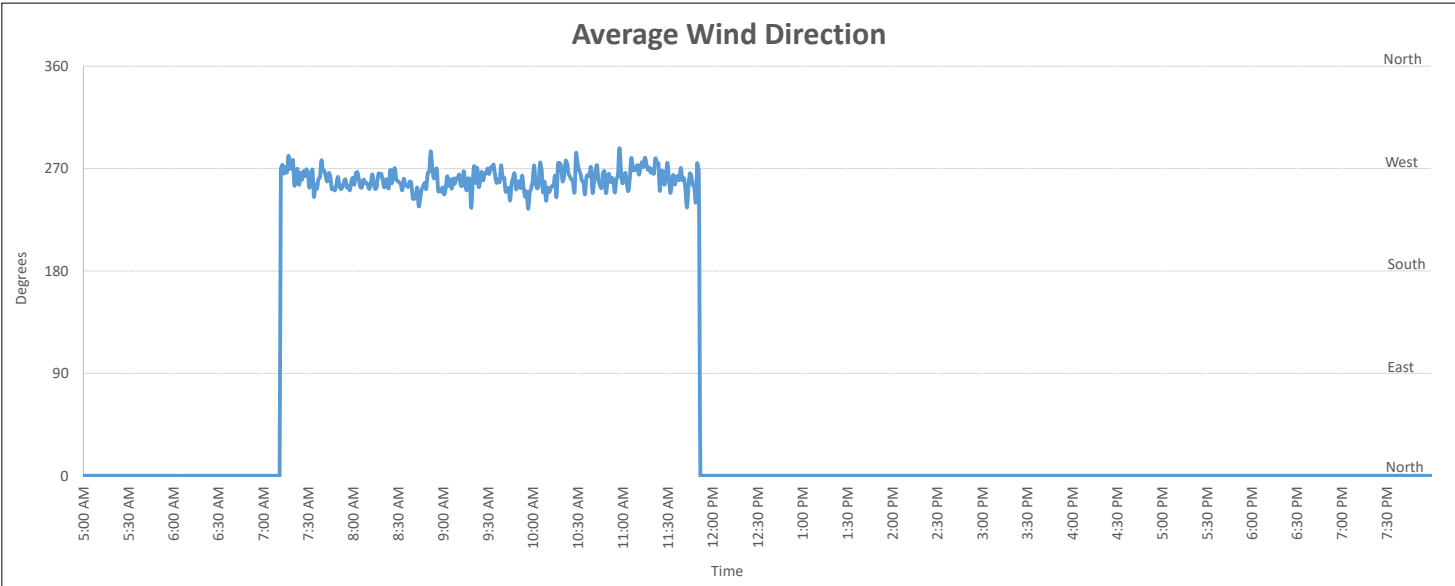


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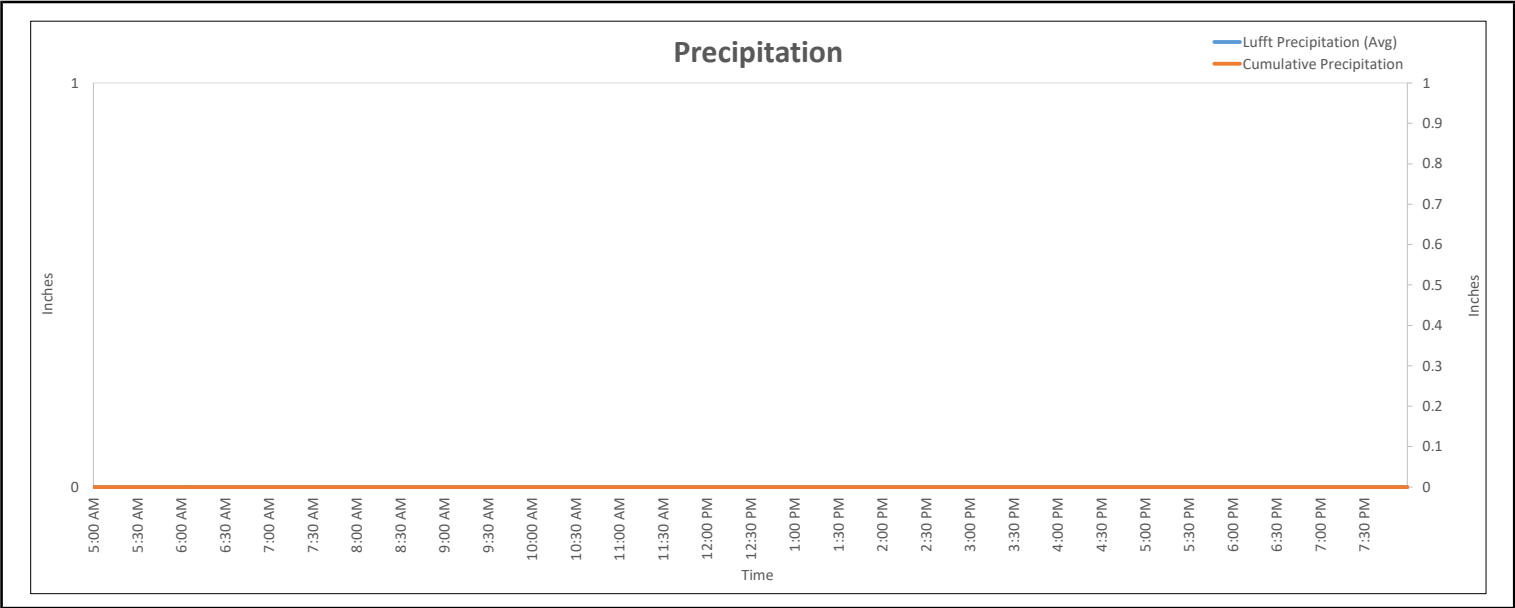
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:27 AM	5:30 PM	18.45	29.00	16.42	25.00



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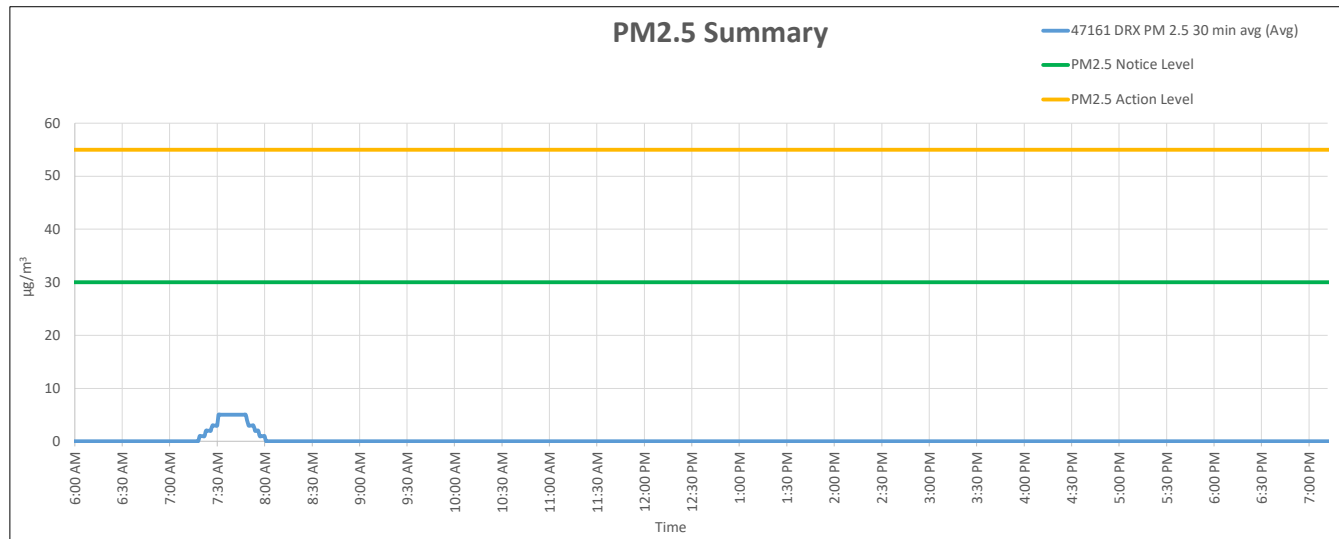
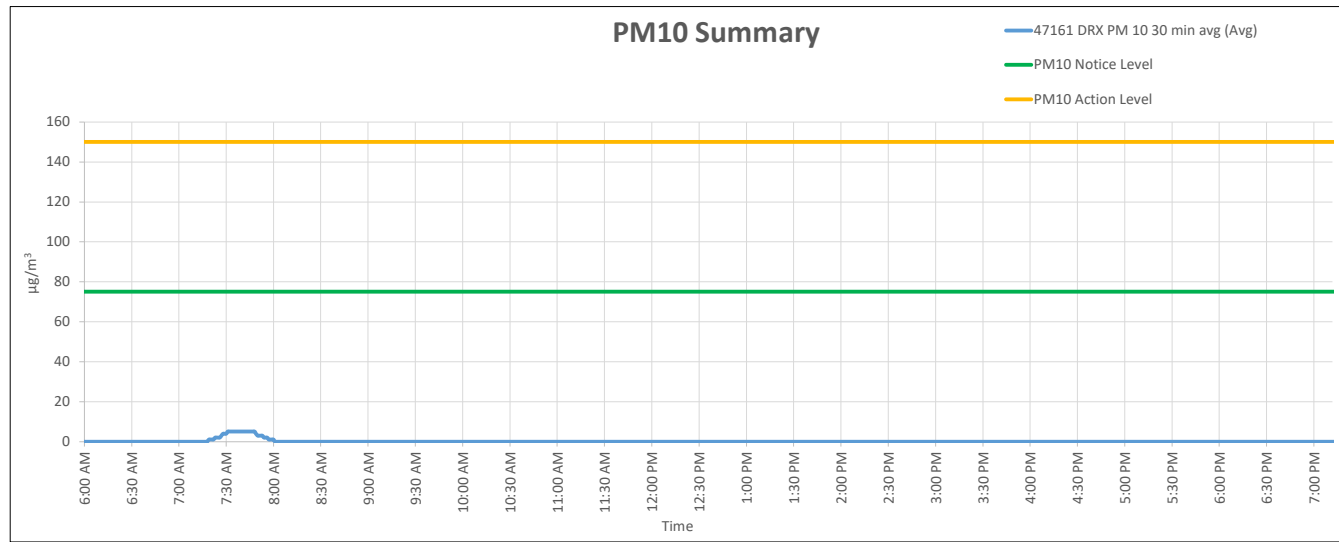


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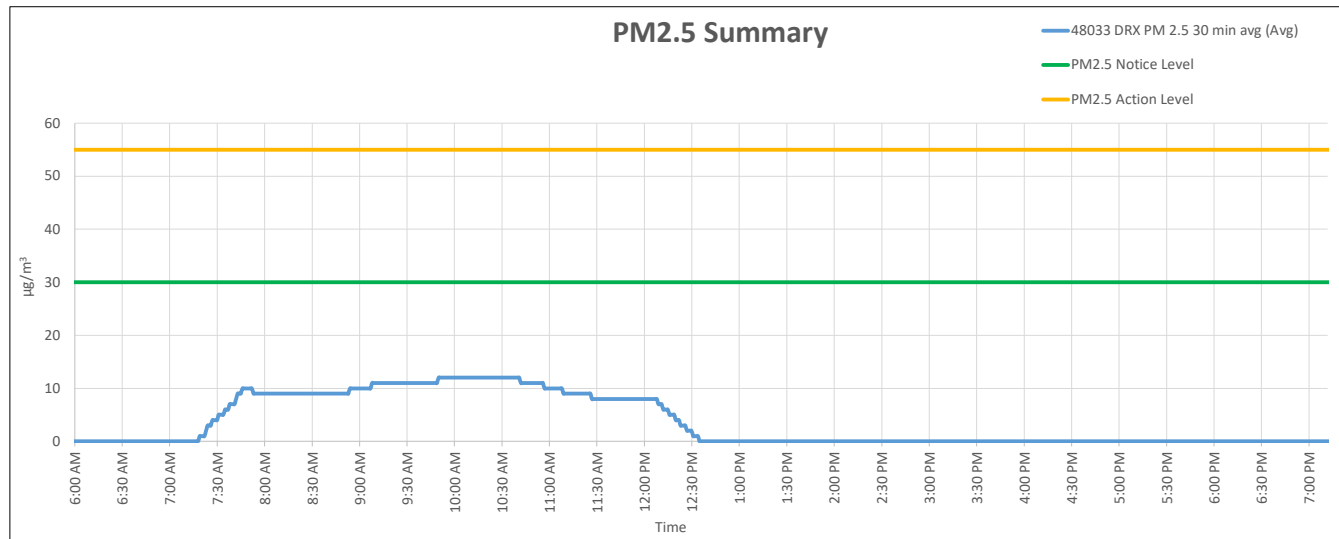
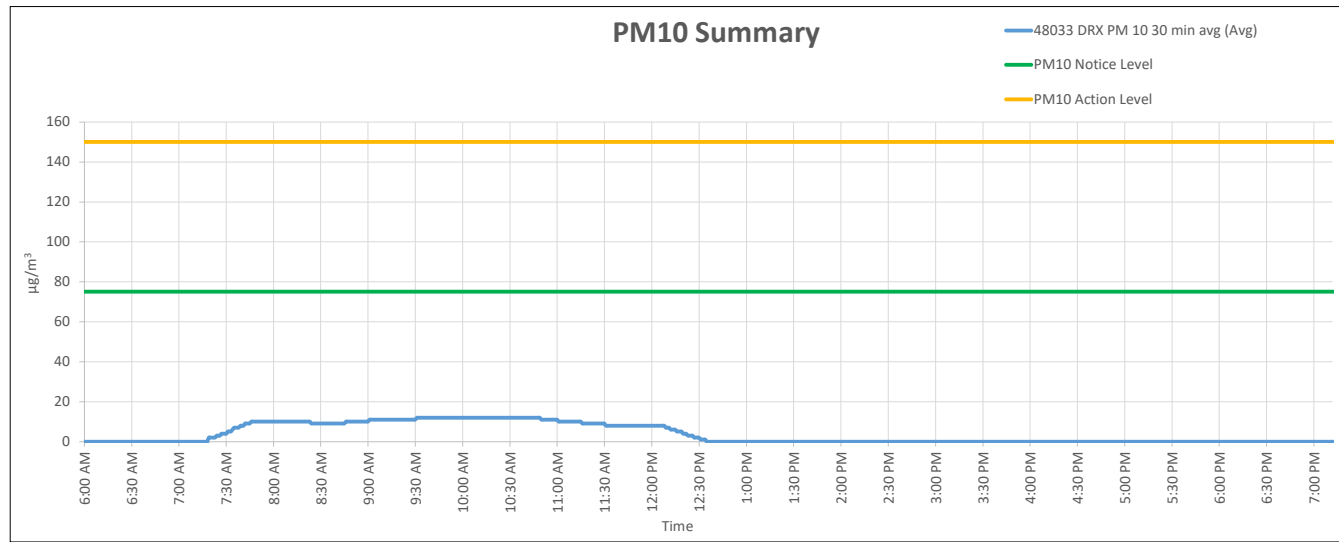
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:19 AM	7:56 AM	3.40	5.00	3.33	5.00



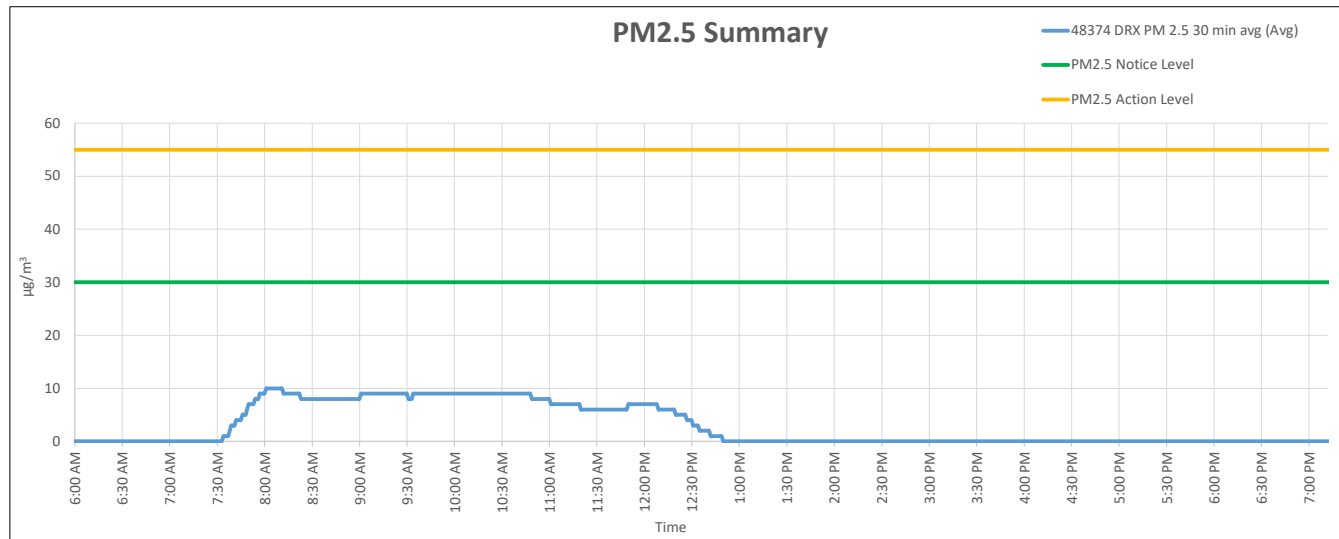
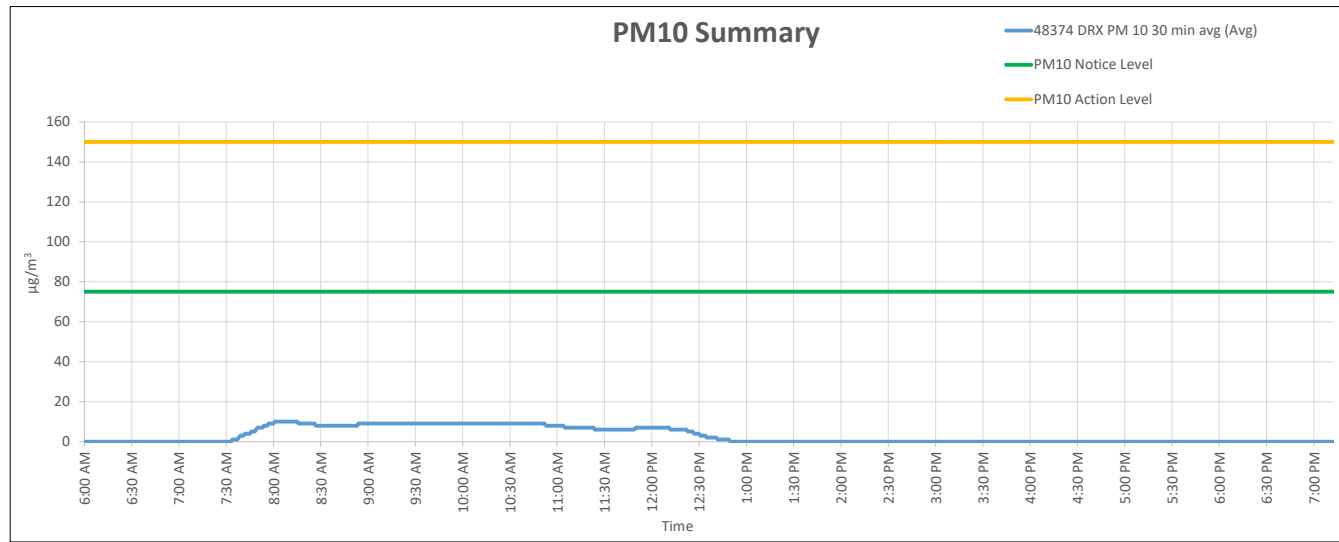
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:19 AM	12:30 PM	9.37	12.00	9.05	12.00



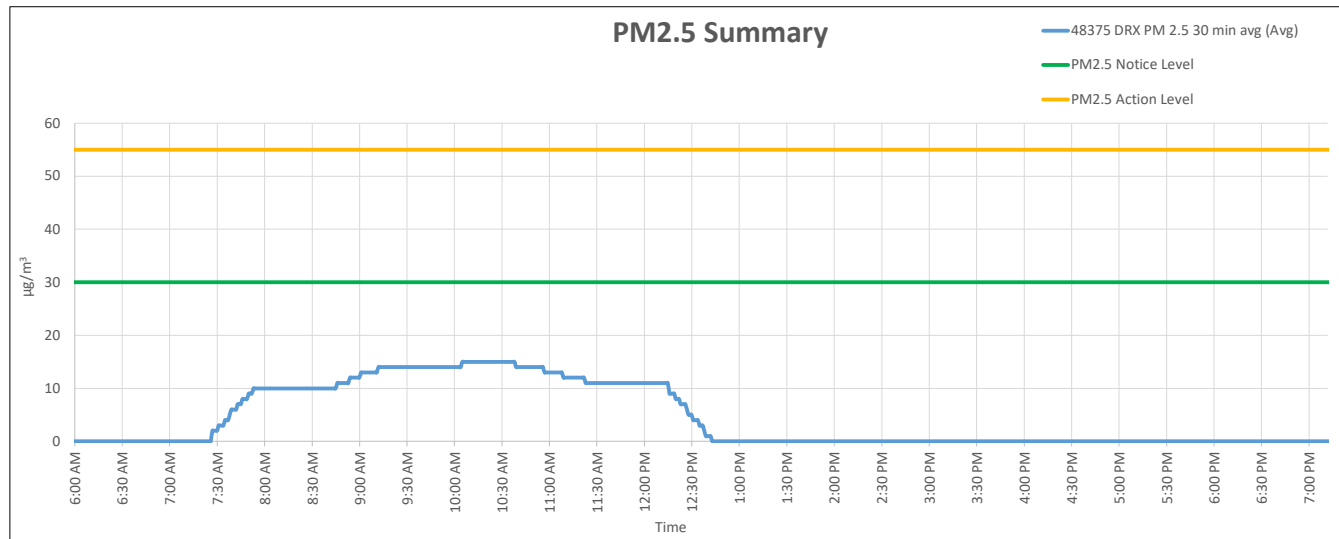
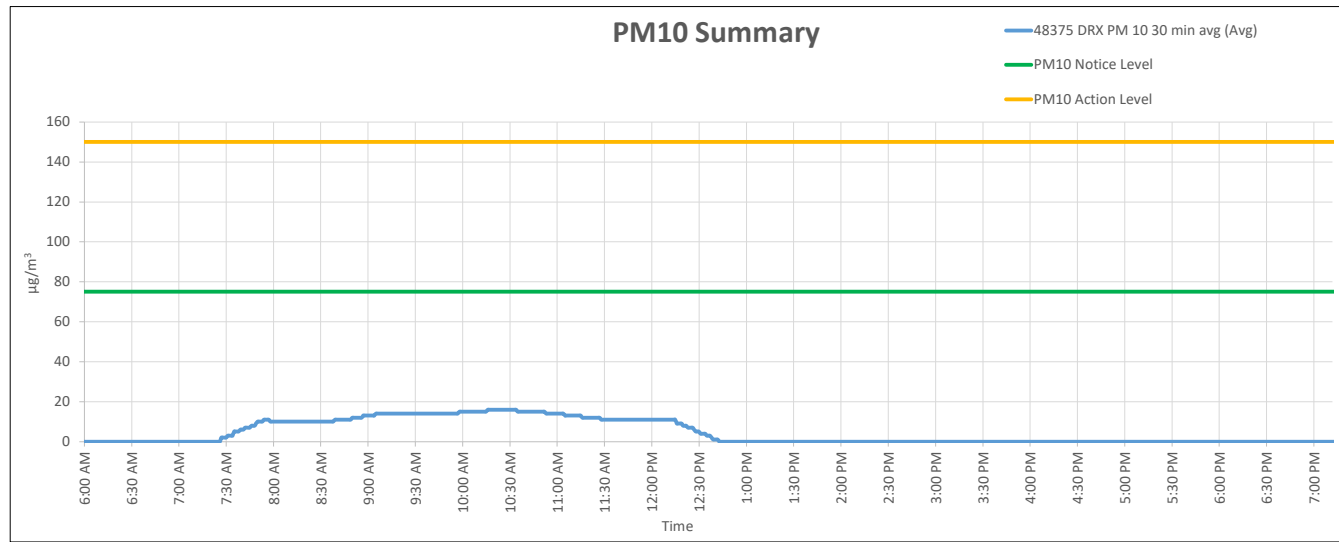
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	7:34 AM	12:41 PM	7.44	10.00	7.33	10.00



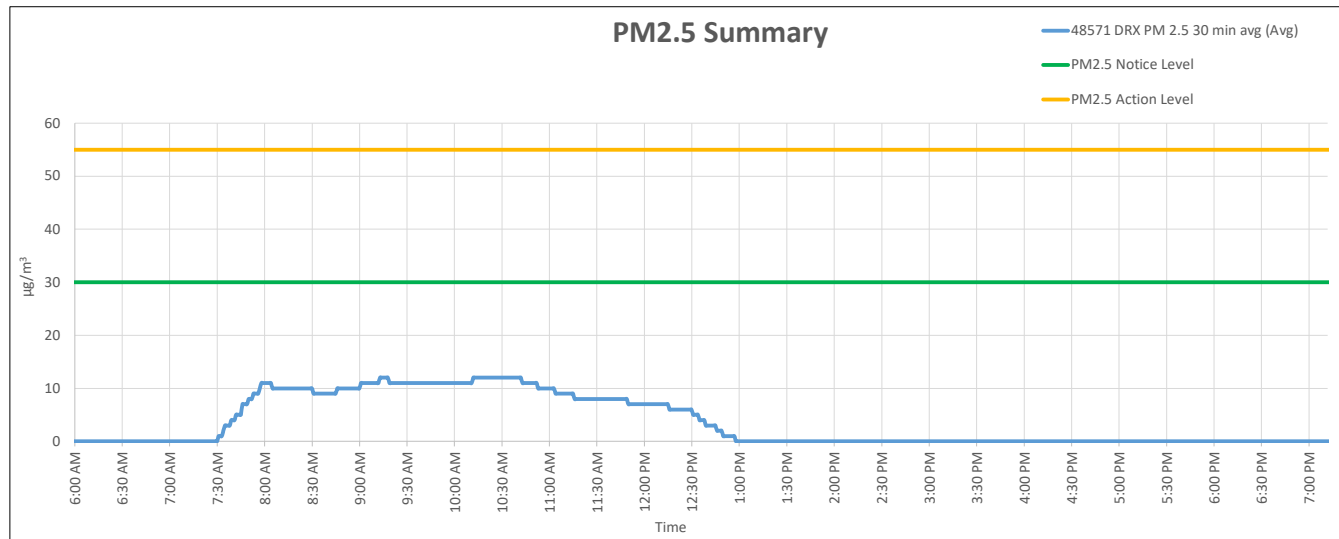
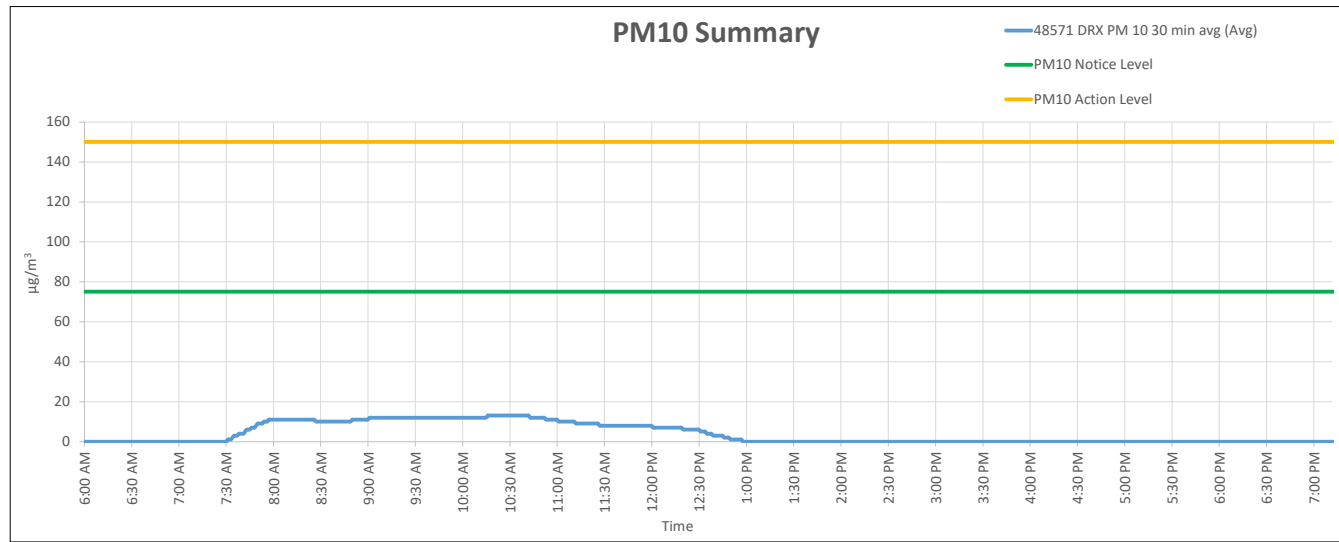
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:27 AM	12:38 PM	11.49	16.00	11.19	15.00



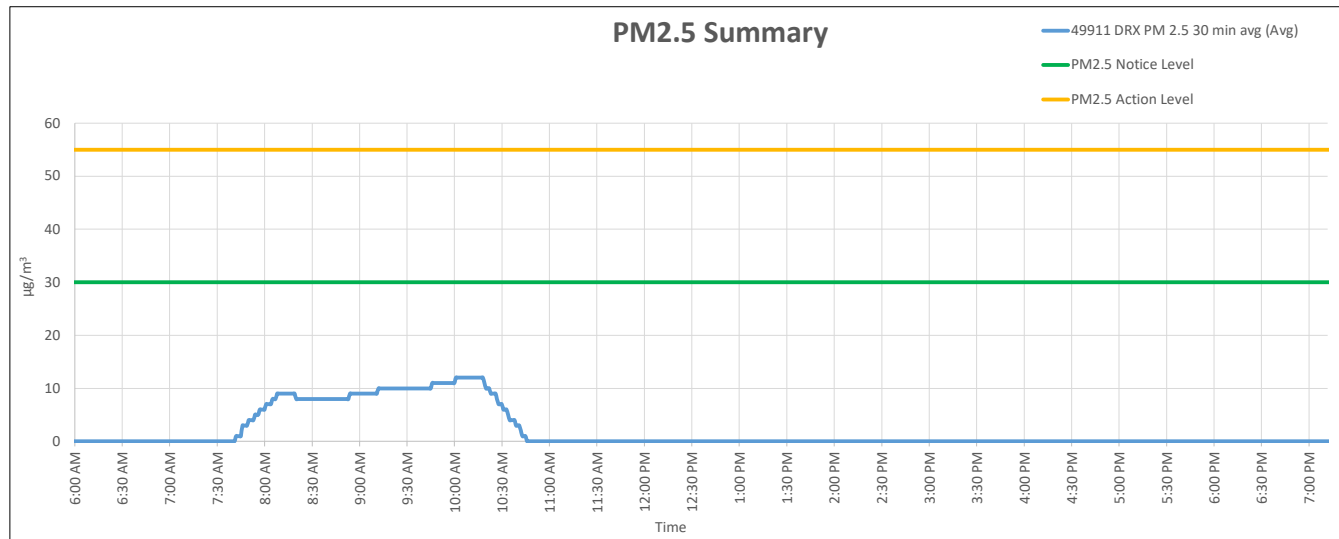
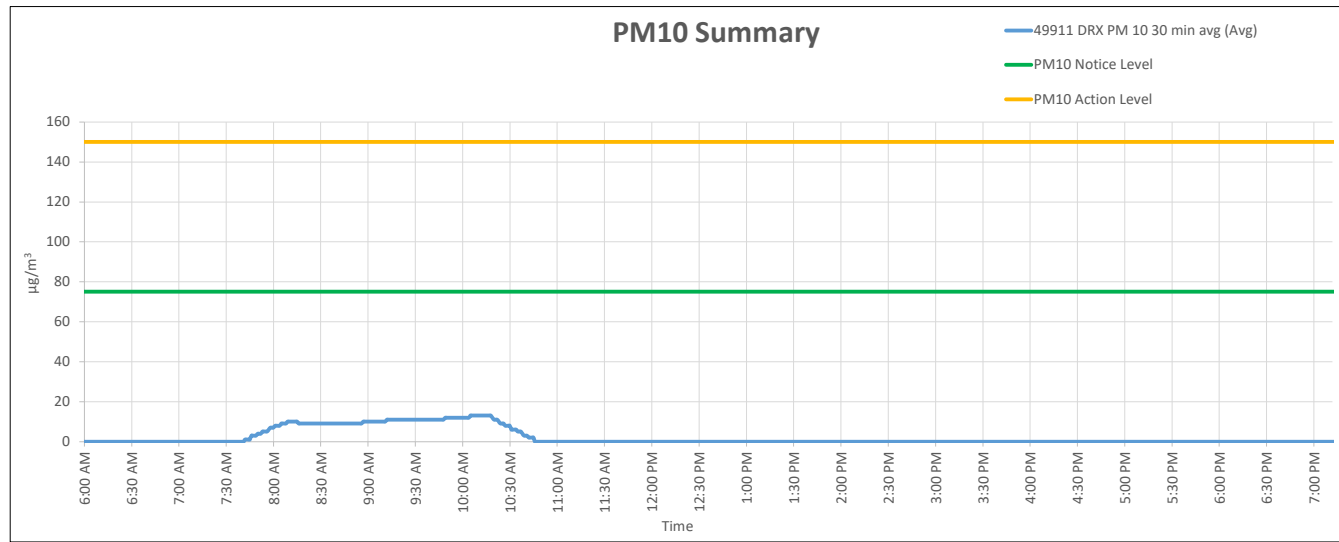
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	7:31 AM	12:49 PM	9.41	13.00	8.79	12.00



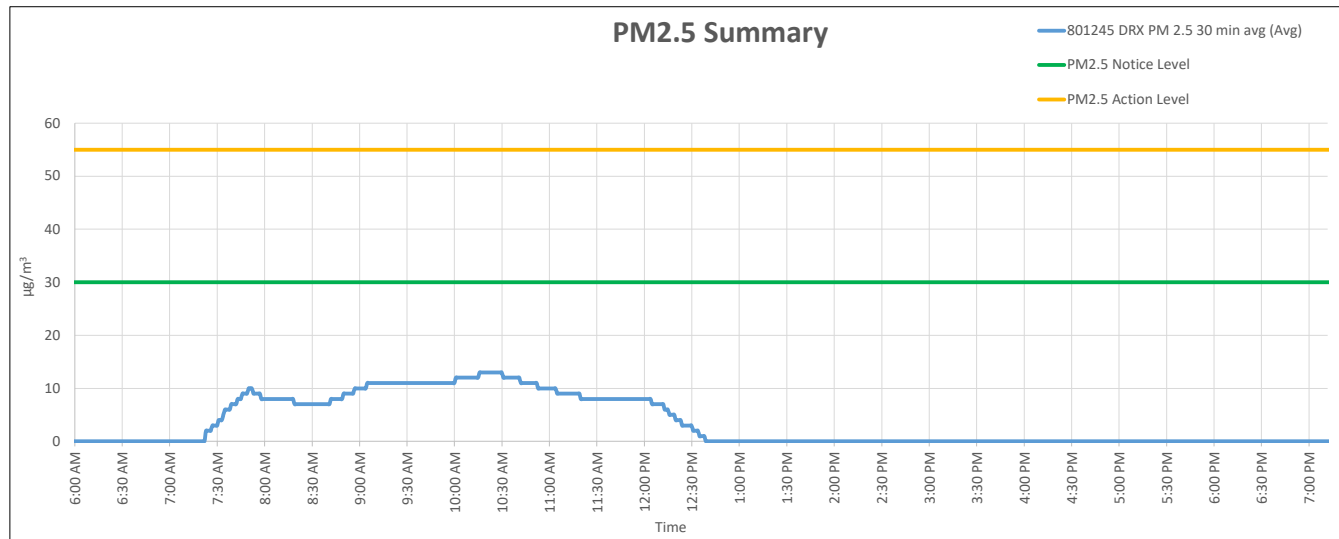
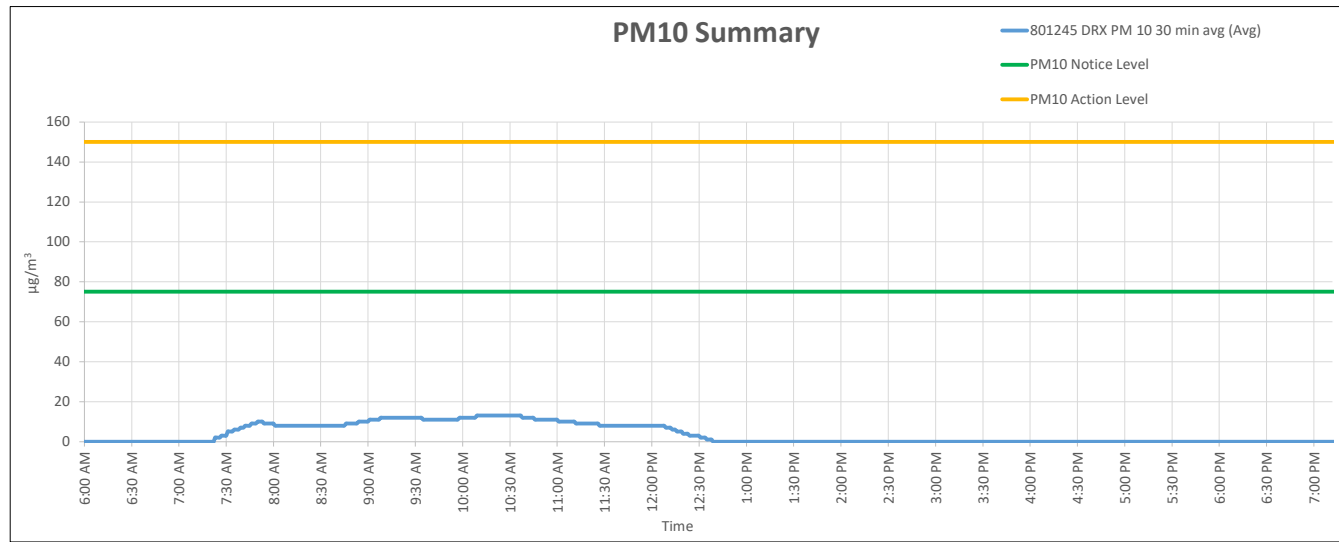
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	7:42 AM	10:45 AM	9.17	13.00	8.40	12.00

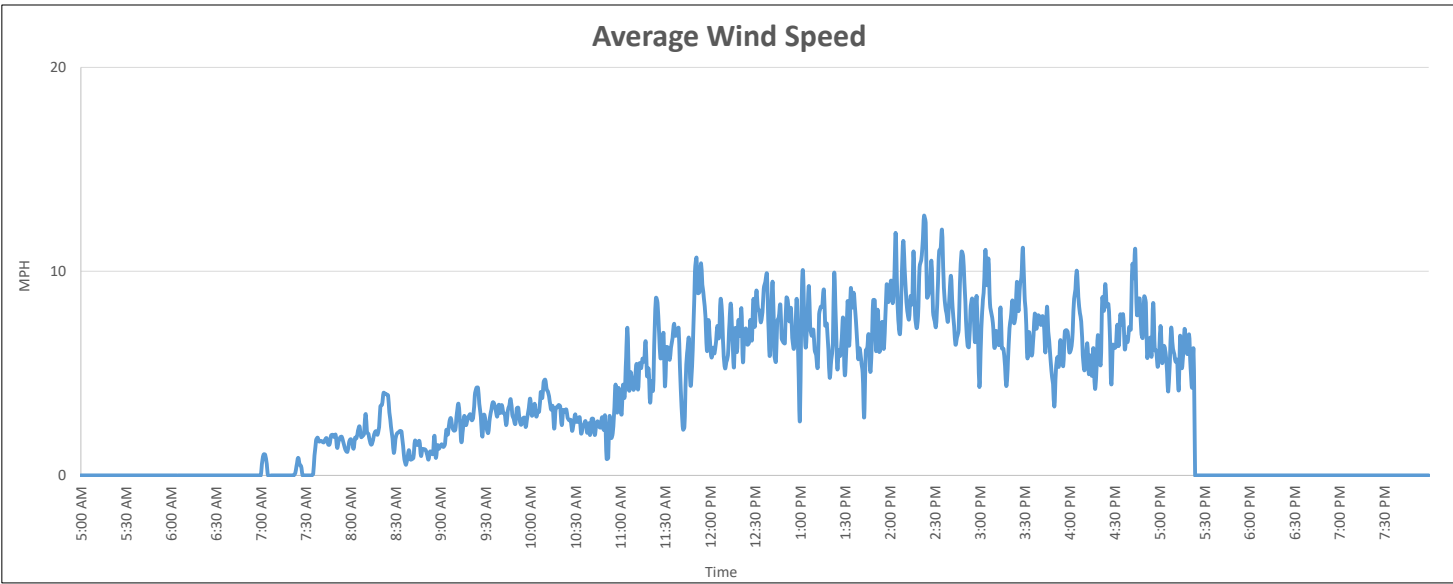
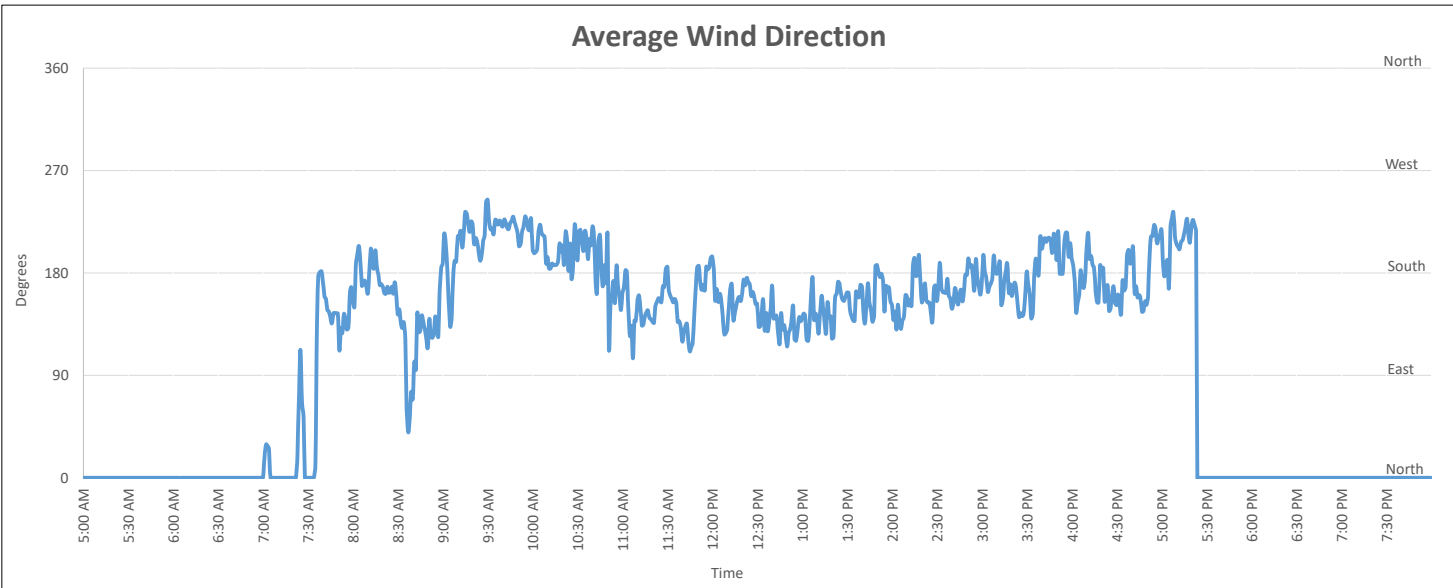


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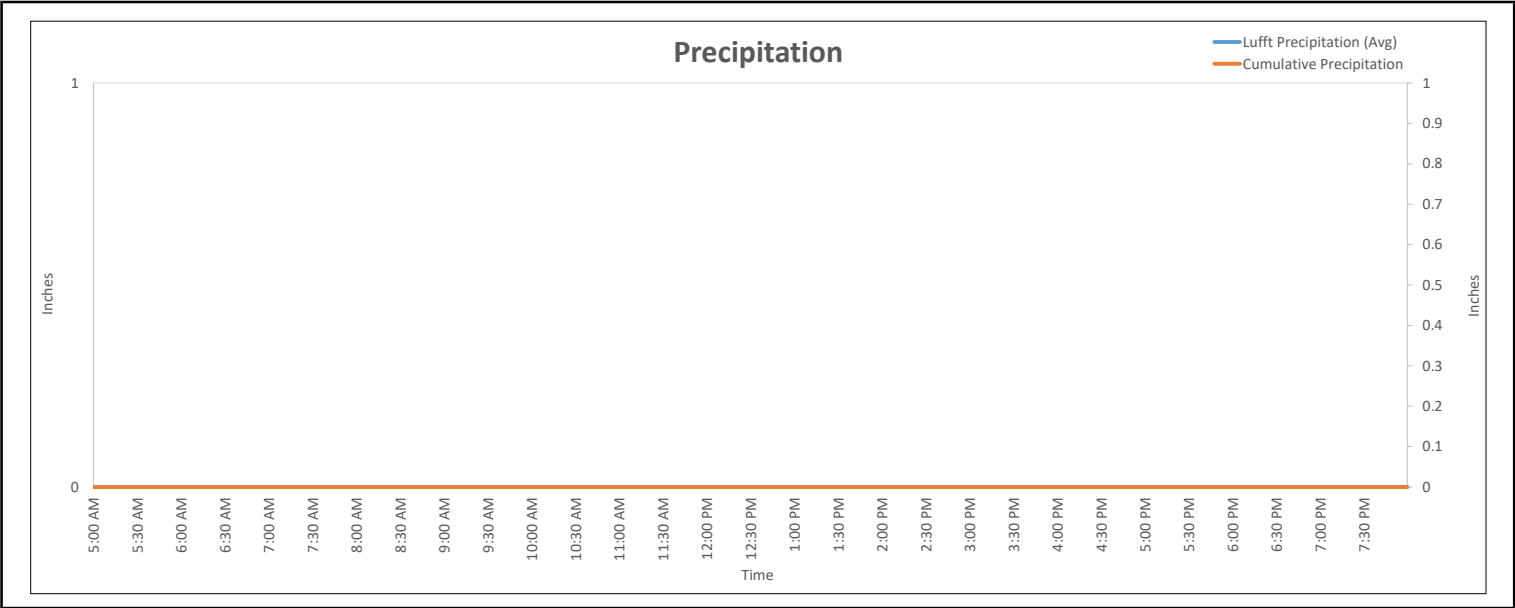
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:23 AM	12:34 PM	9.11	13.00	8.74	13.00



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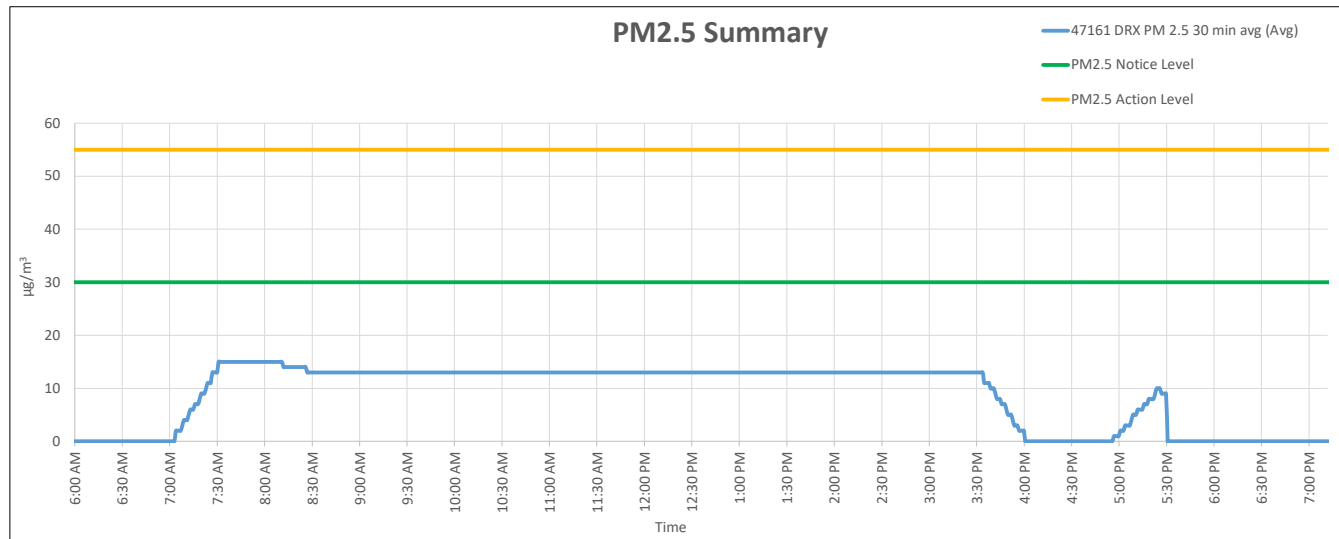
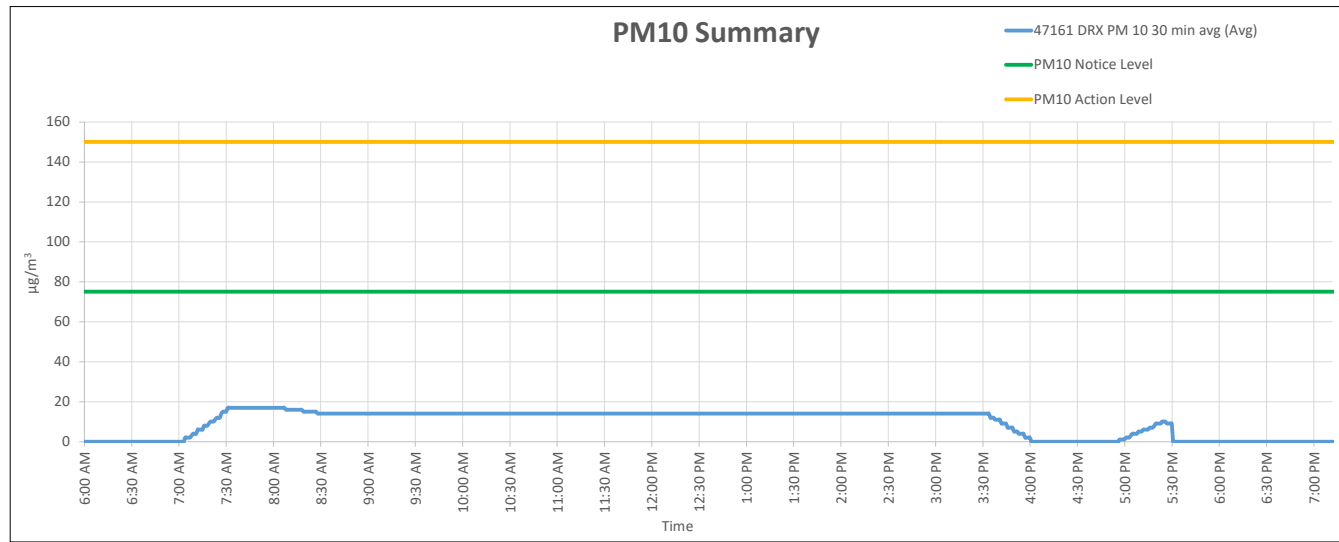


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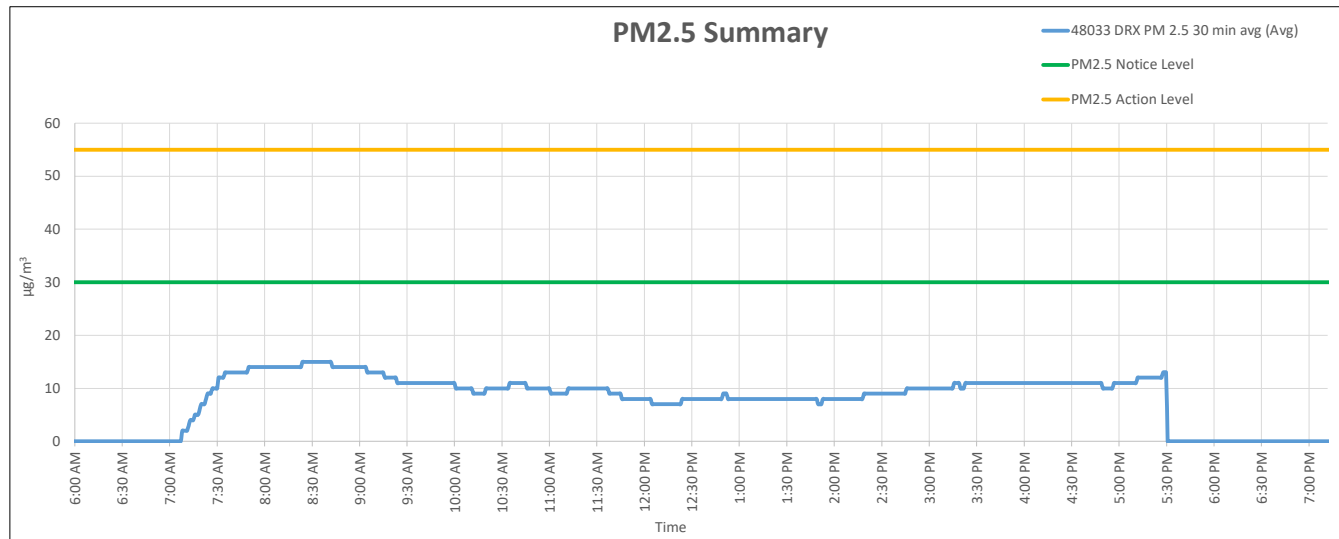
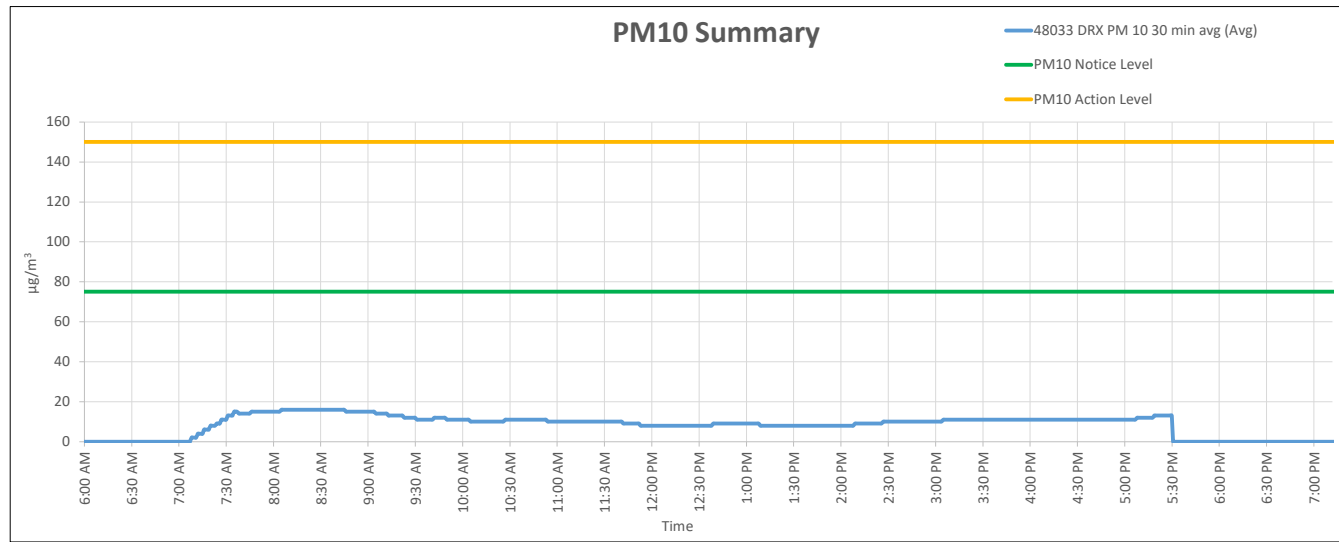
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:04 AM	5:30 PM	13.16	17.00	12.17	15.00



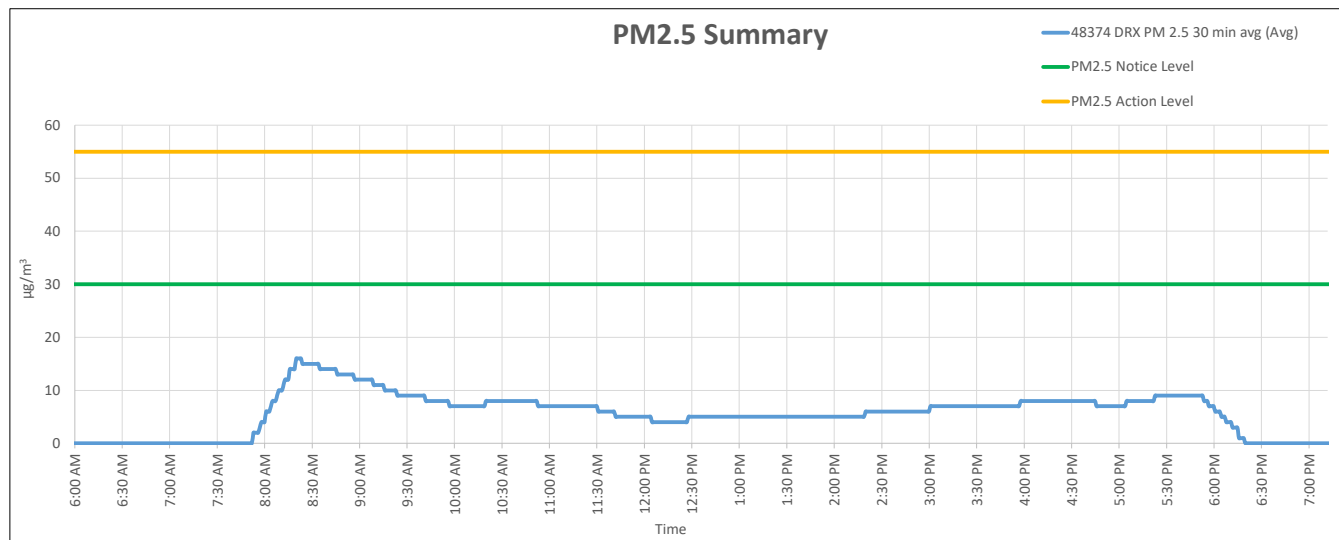
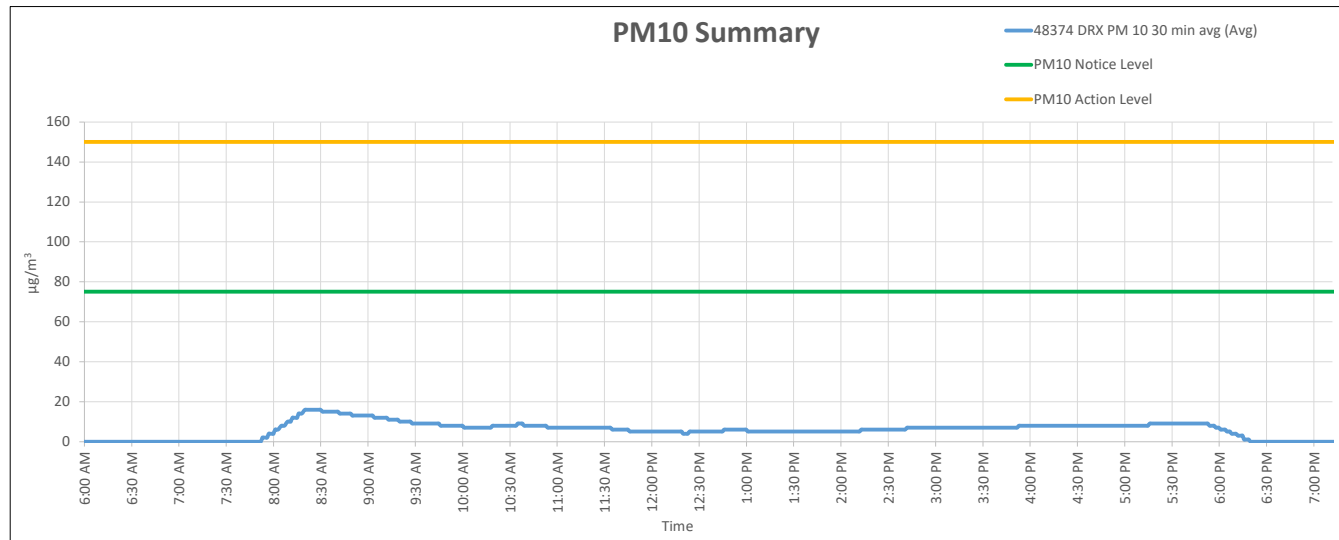
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:08 AM	5:30 PM	10.76	16.00	10.24	15.00



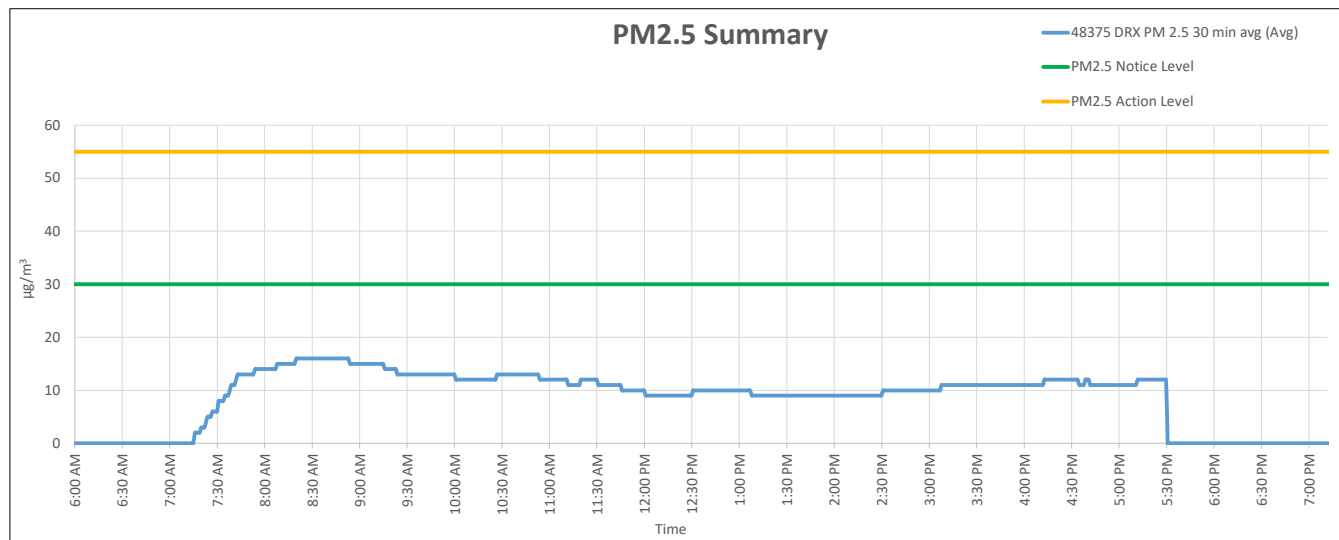
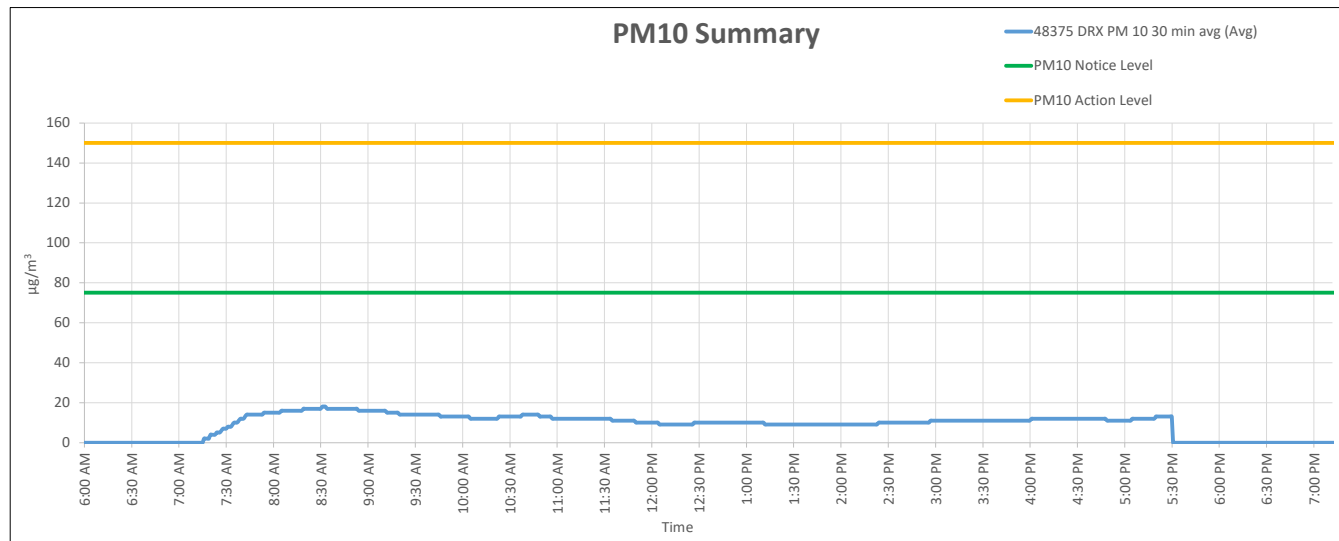
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	7:53 AM	6:15 PM	7.51	16.00	7.26	16.00



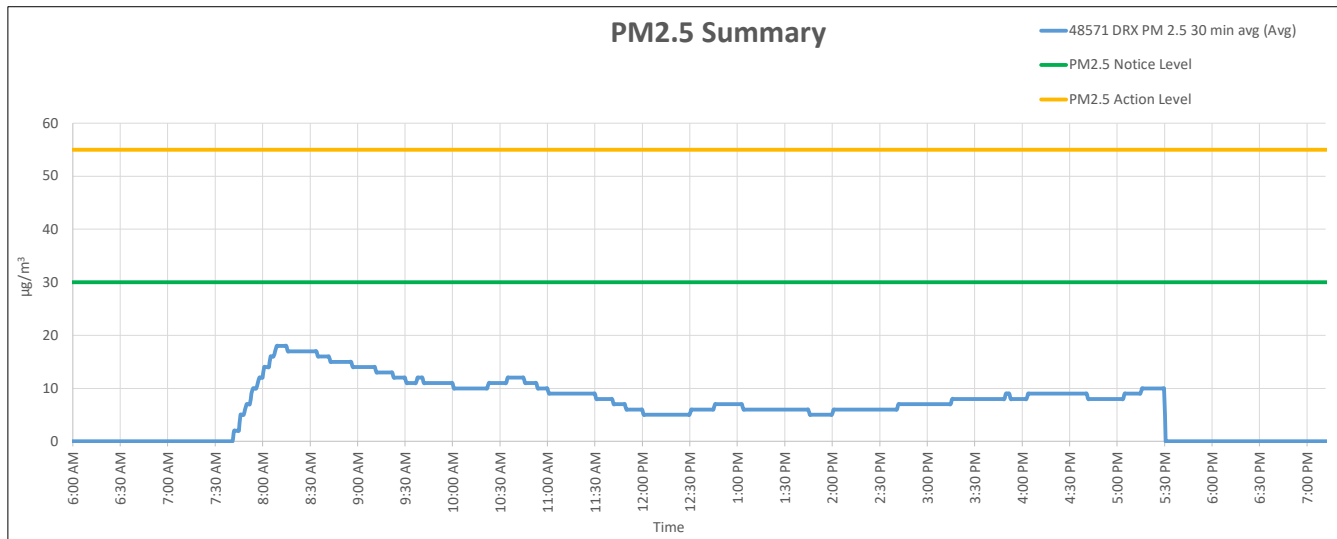
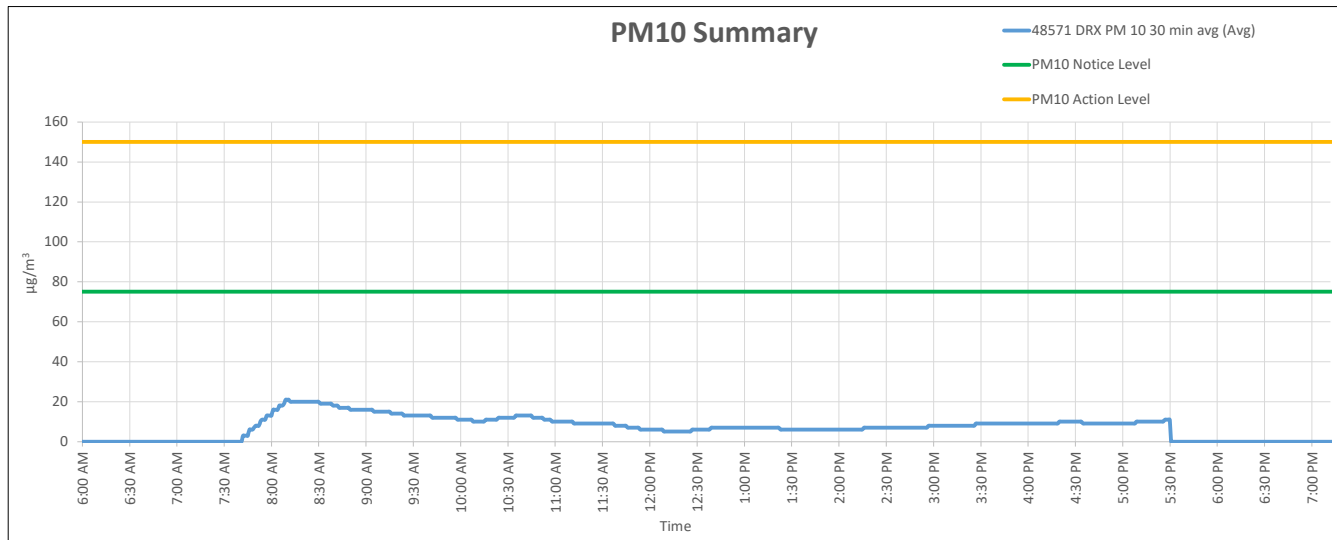
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Thursday, September 12, 2024

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	7:16 AM	5:30 PM	11.70	18.00	11.30	16.00



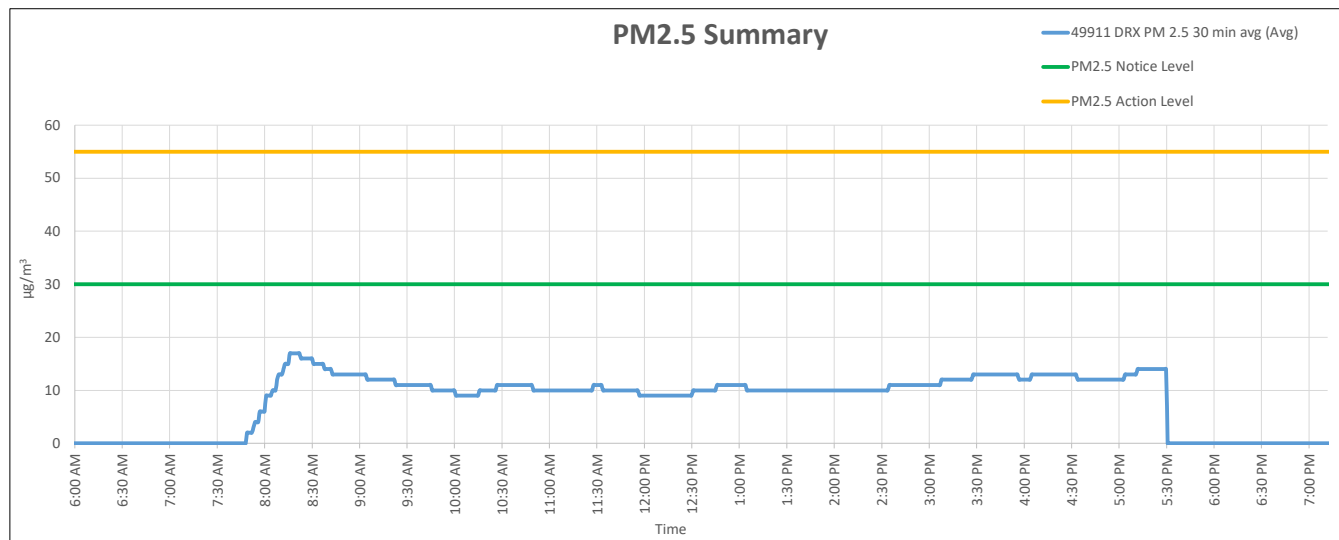
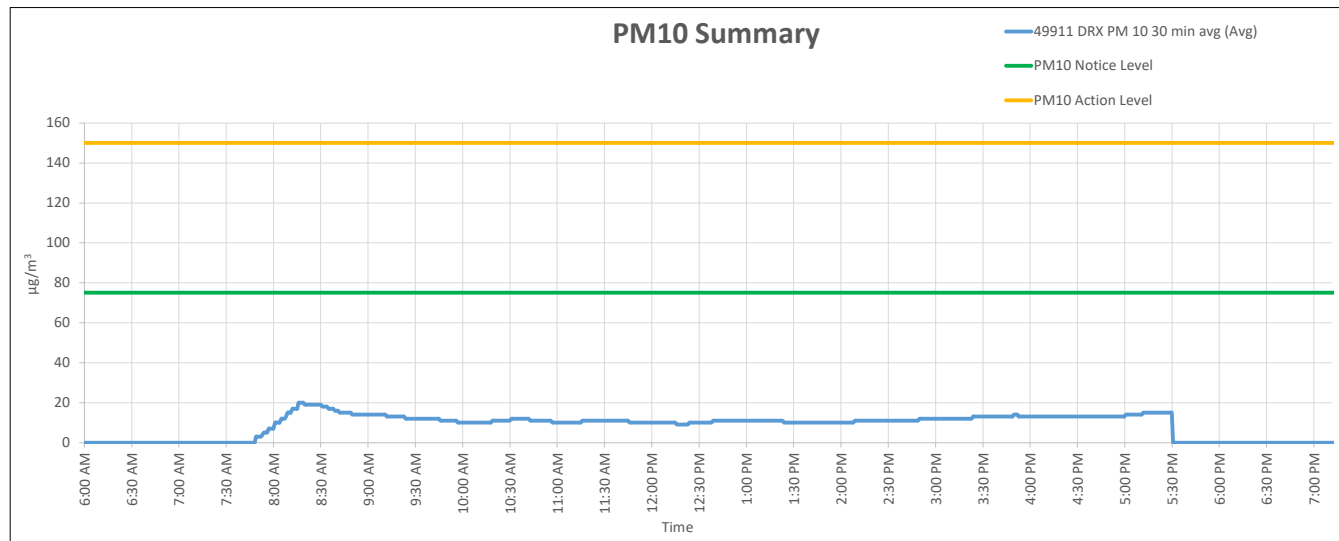
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 12, 2024

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	7:42 AM	5:30 PM	9.80	21.00	8.98	18.00



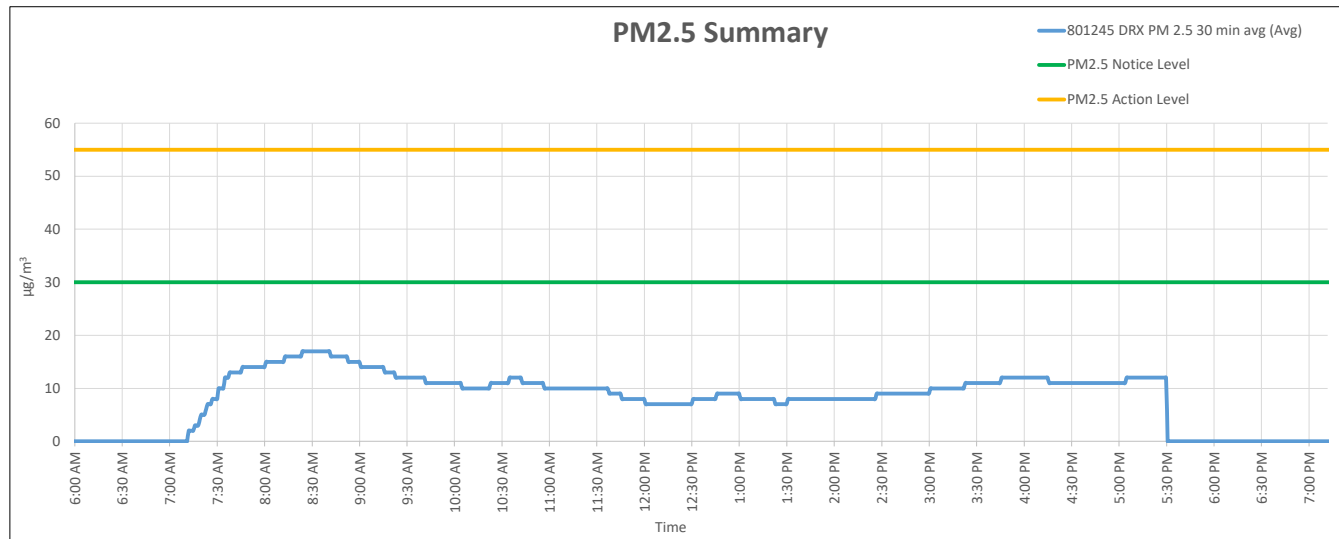
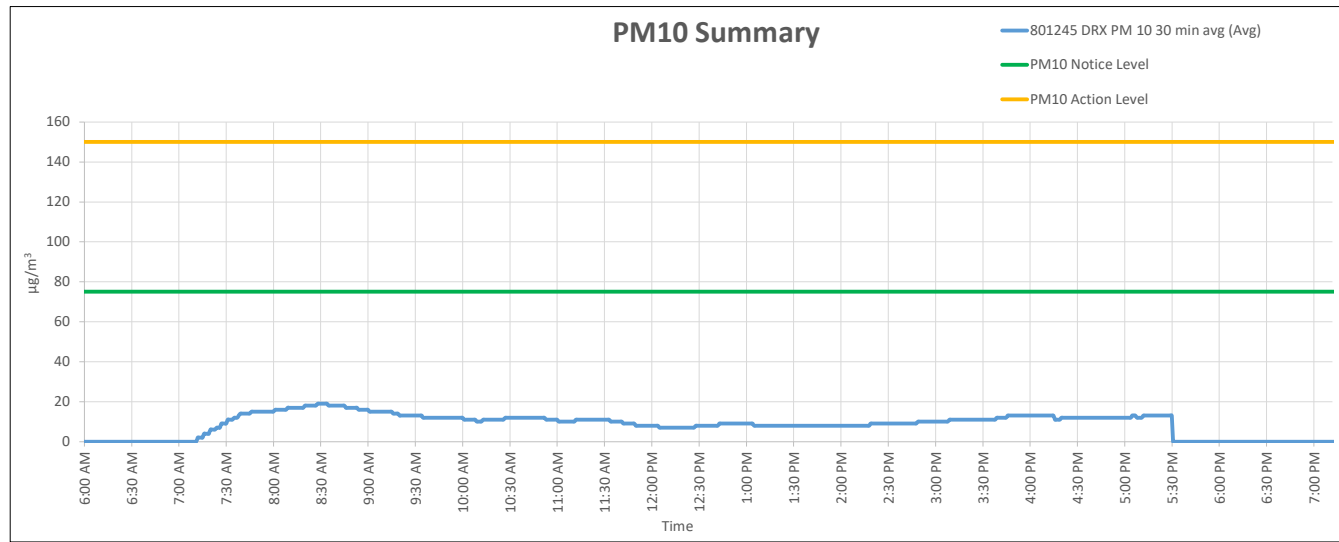
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 12, 2024

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	7:49 AM	5:30 PM	11.87	20.00	11.12	17.00

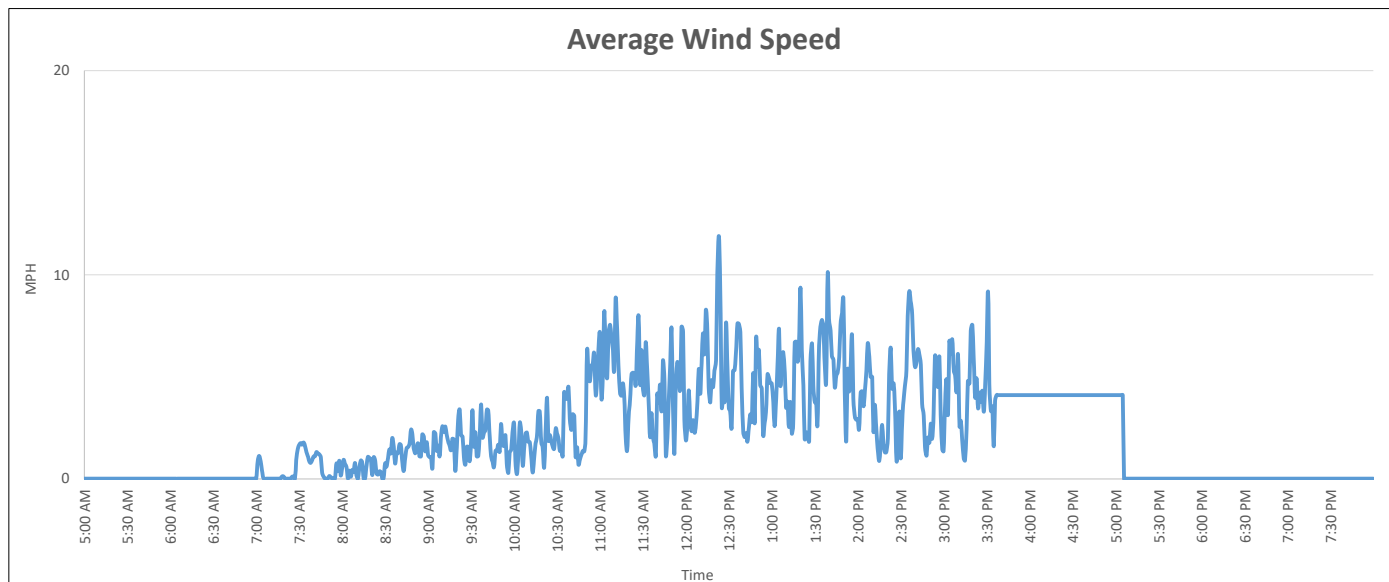
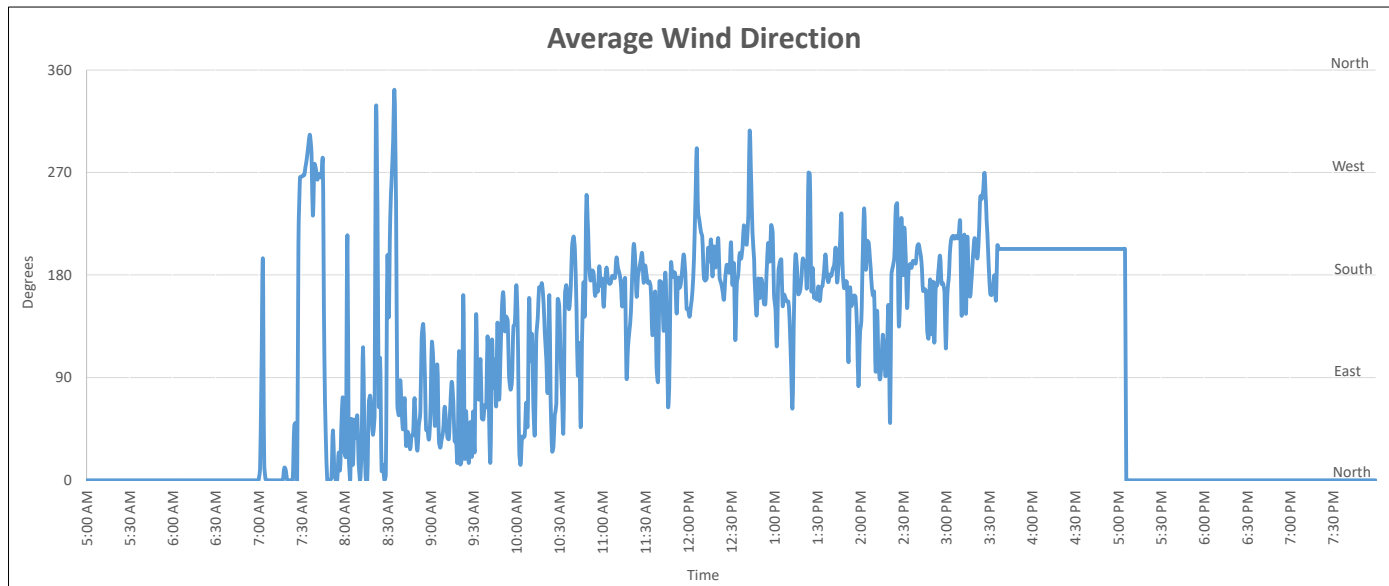


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Air Monitoring Values
Thursday, September 12, 2024

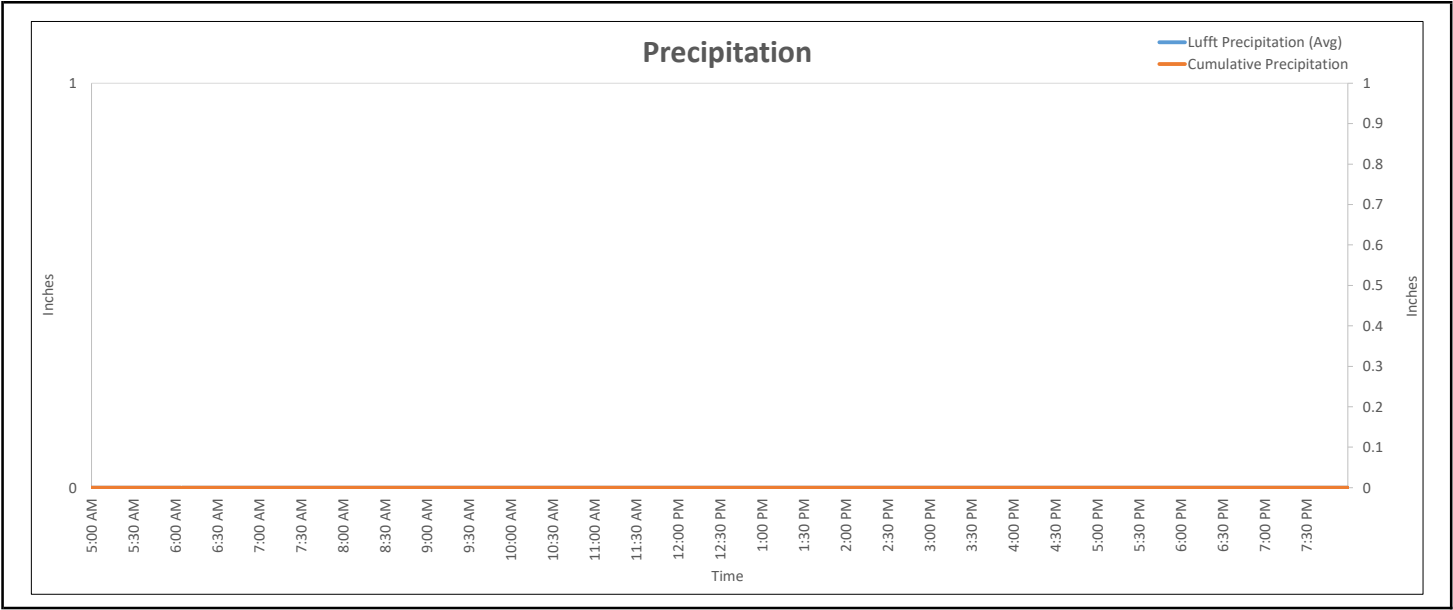
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:12 AM	5:30 PM	11.17	19.00	10.54	17.00



Union Pacific Railroad
Houston Wood Preserving Works Site
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Weather Daily Summary
Friday, September 13, 2024

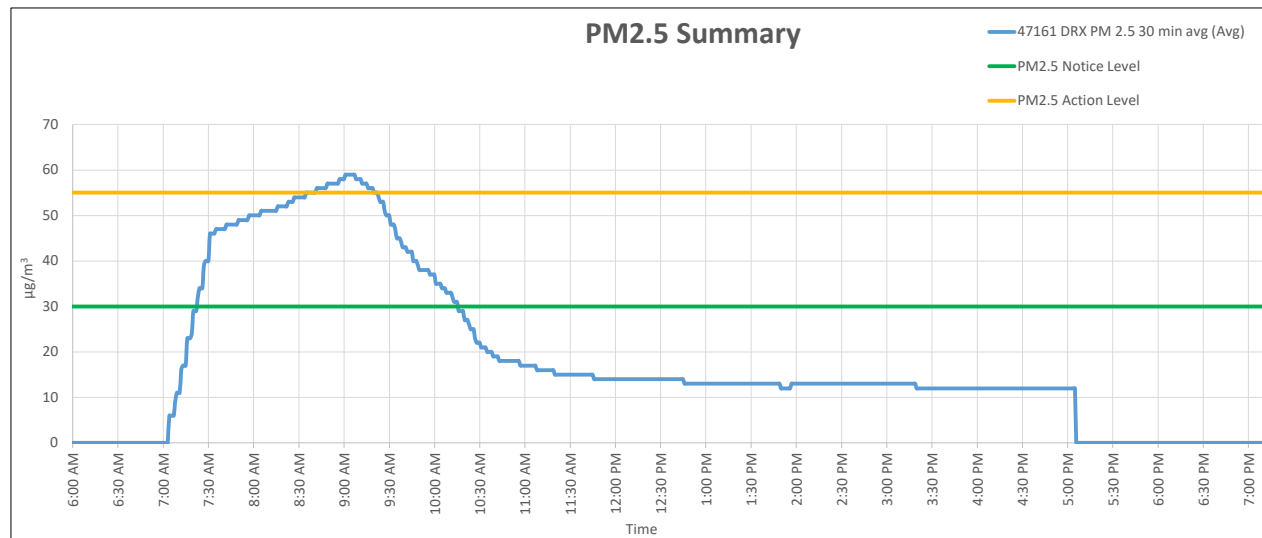
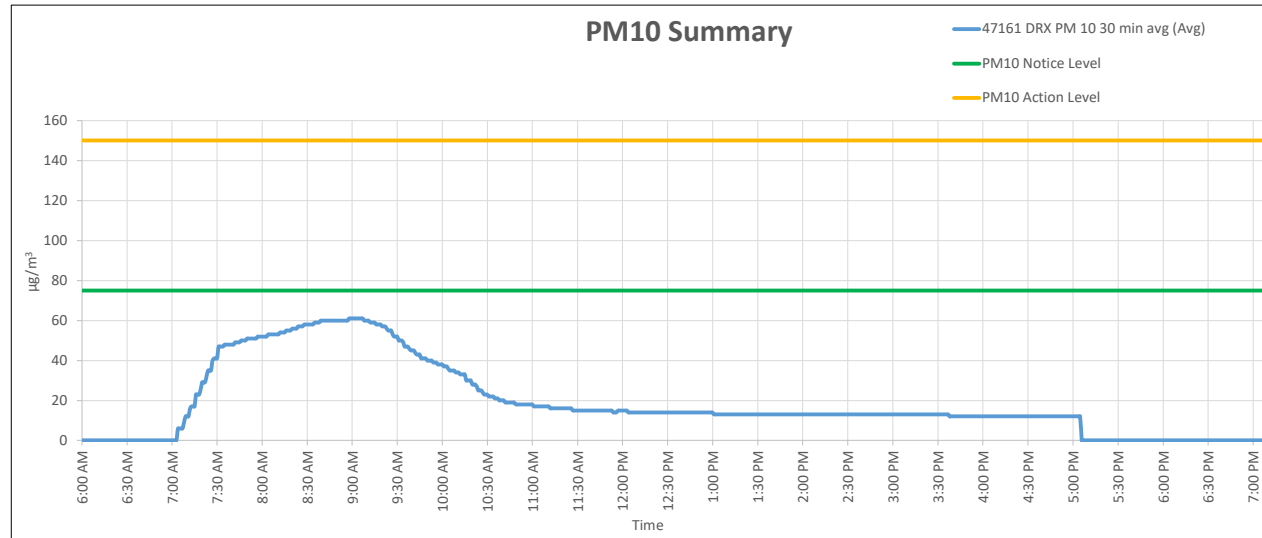


Union Pacific Railroad
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Weather Daily Summary
Friday, September 13, 2024



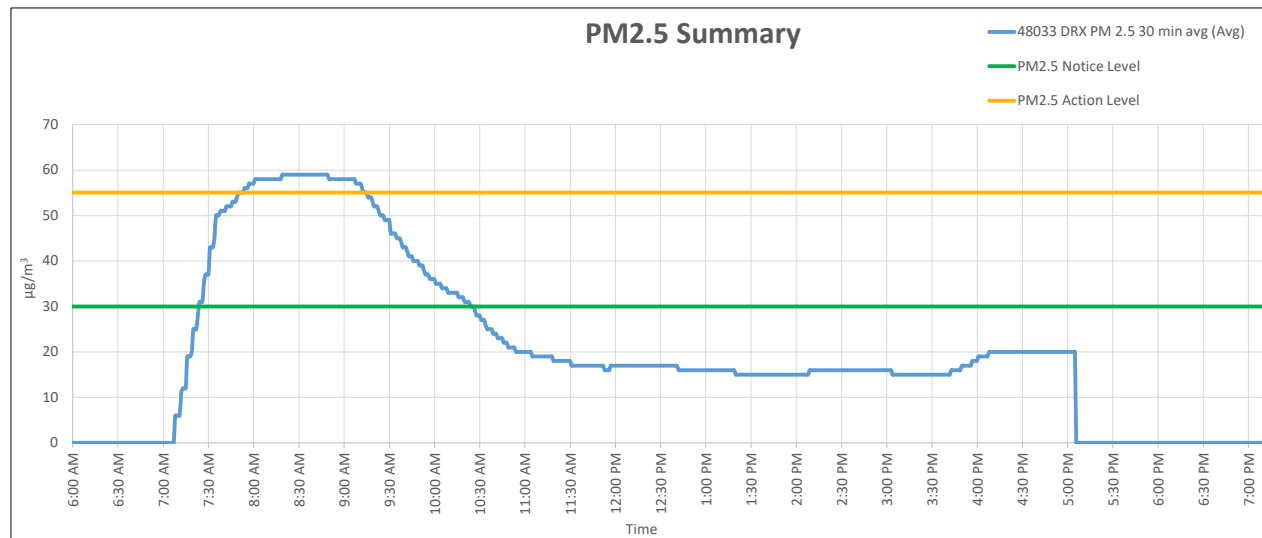
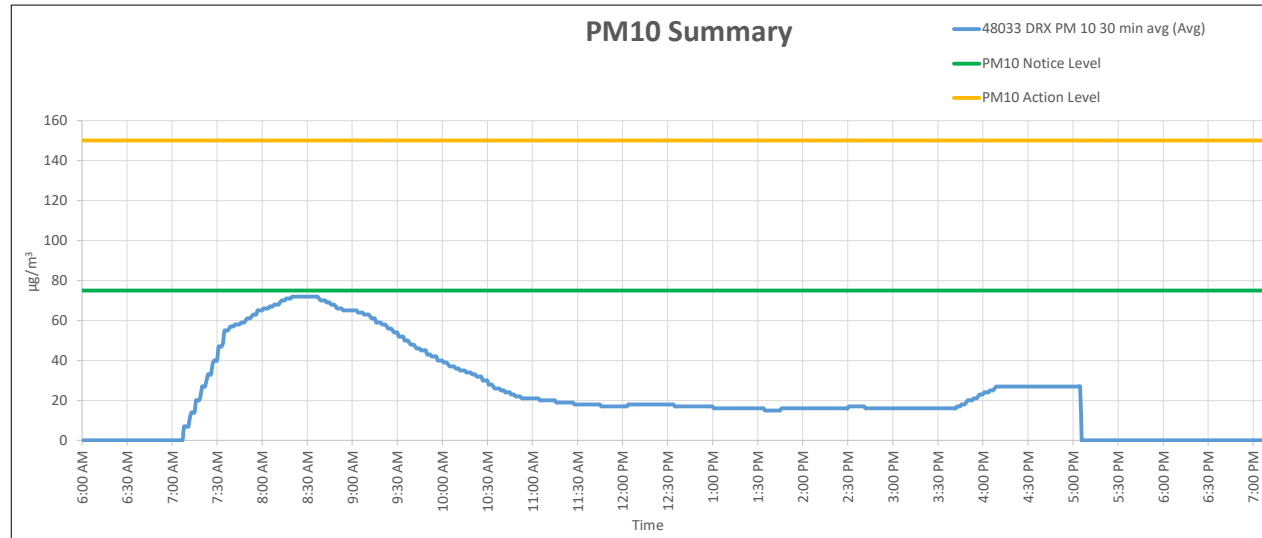
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 13, 2024

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	7:04 AM	5:05 PM	24.80	61.00	24.00	59.00



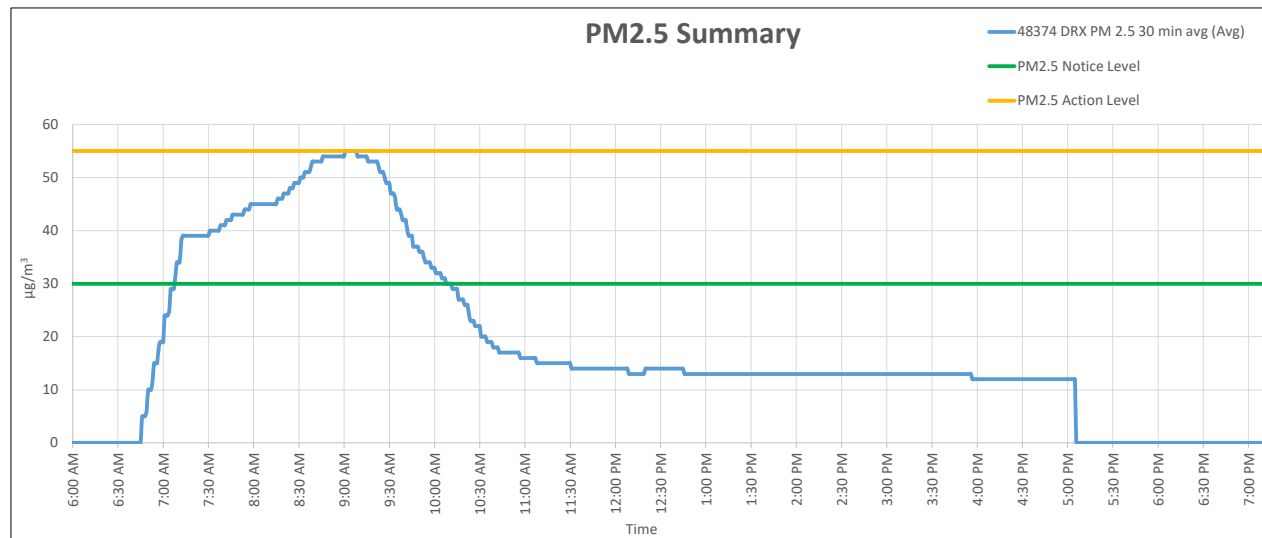
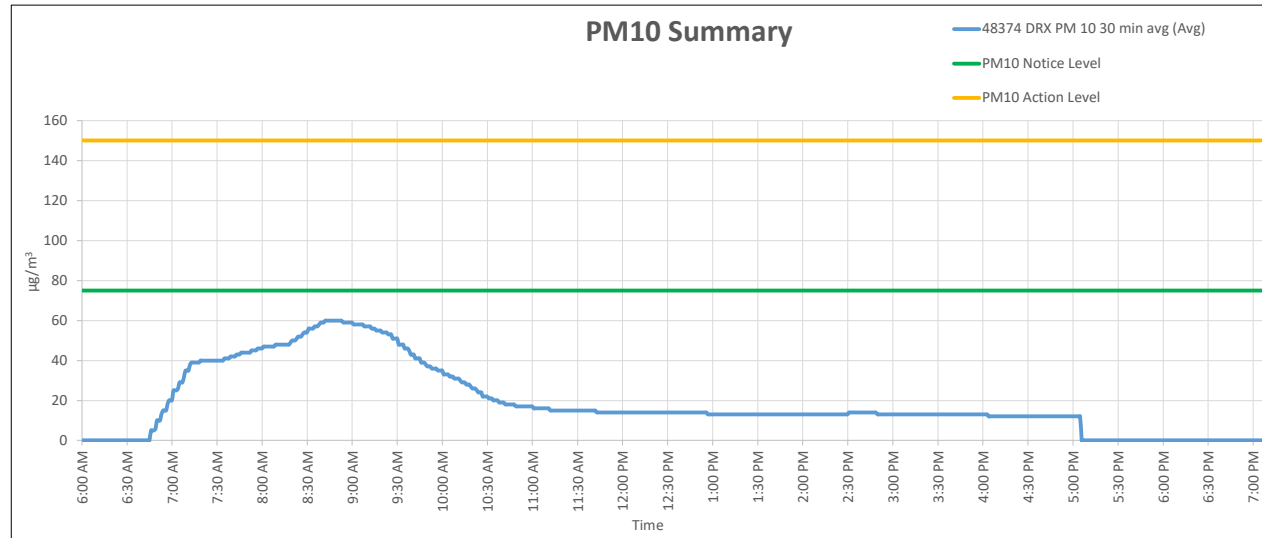
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 13, 2024

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	7:08 AM	5:05 PM	30.41	72.00	27.14	59.00



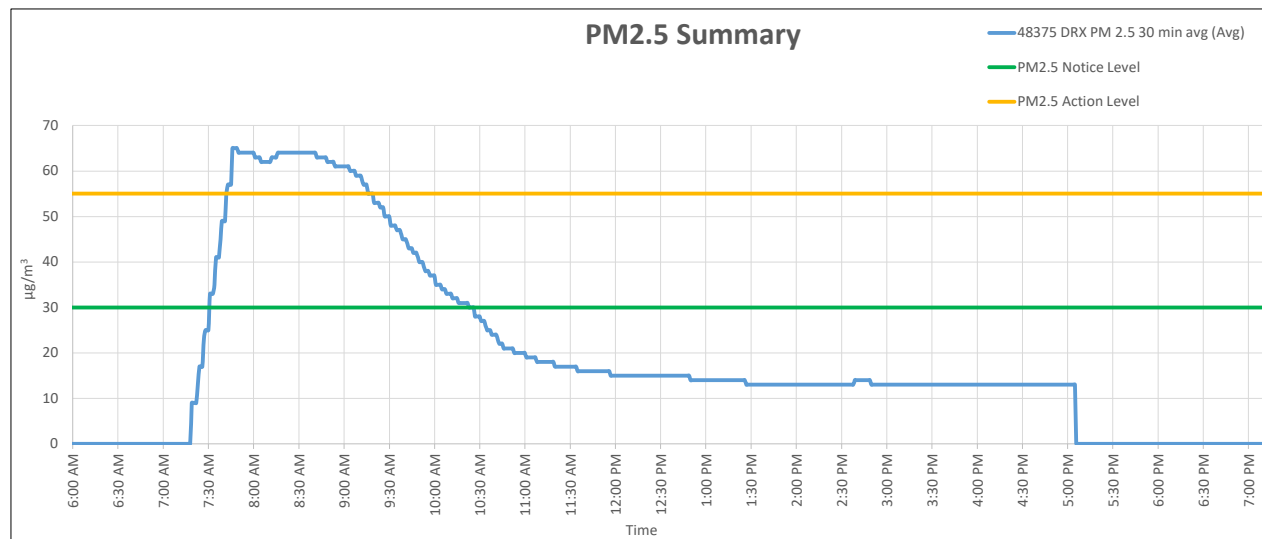
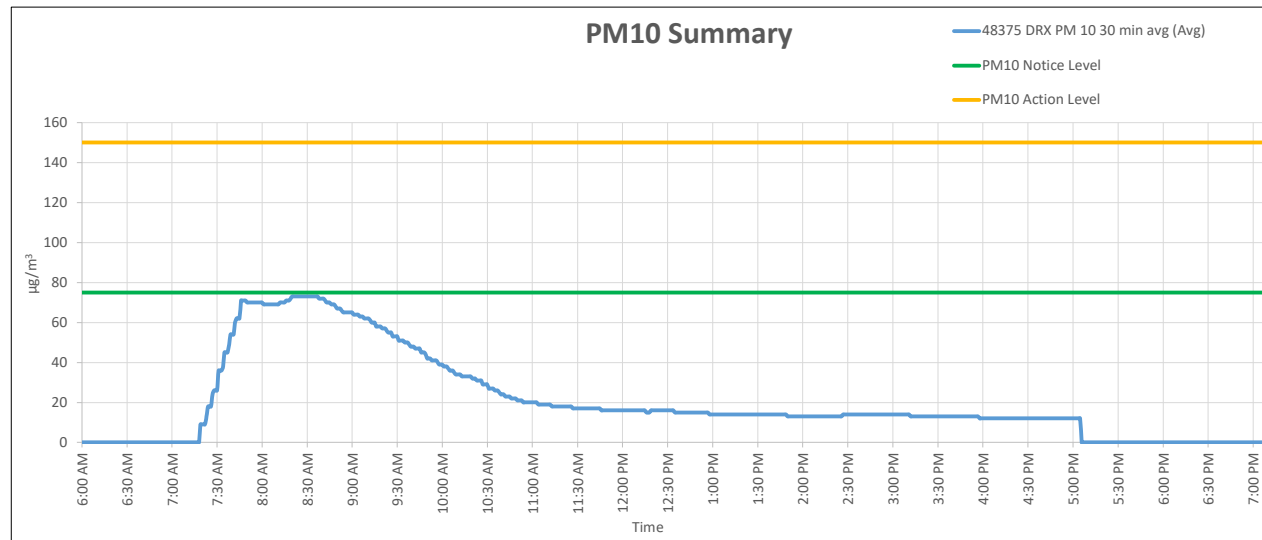
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 13, 2024

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	6:46 AM	5:05 PM	24.09	60.00	23.23	55.00



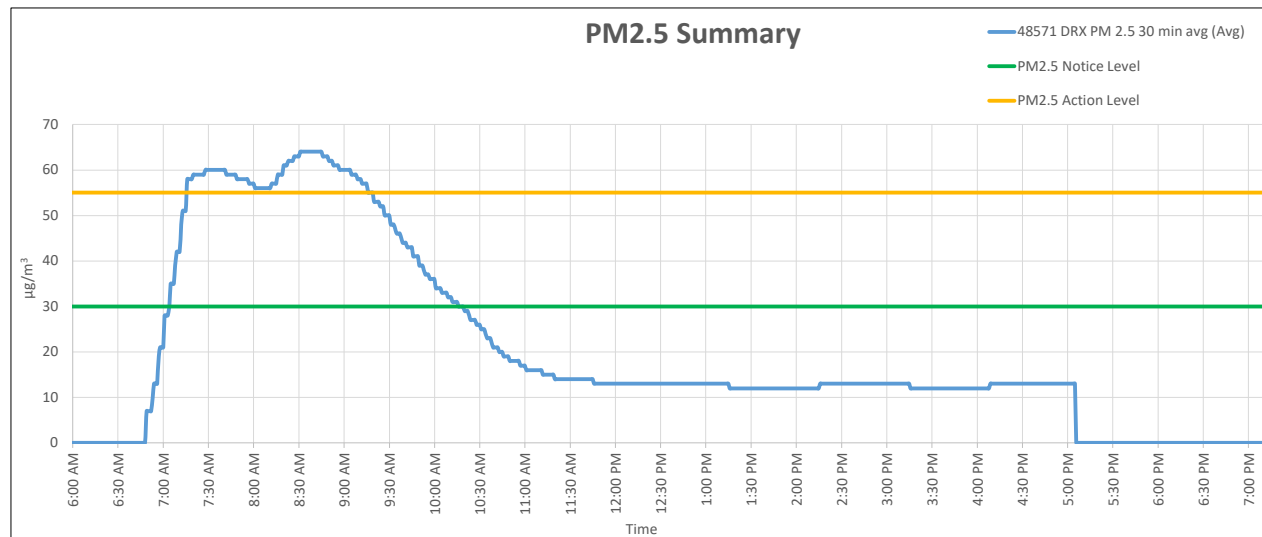
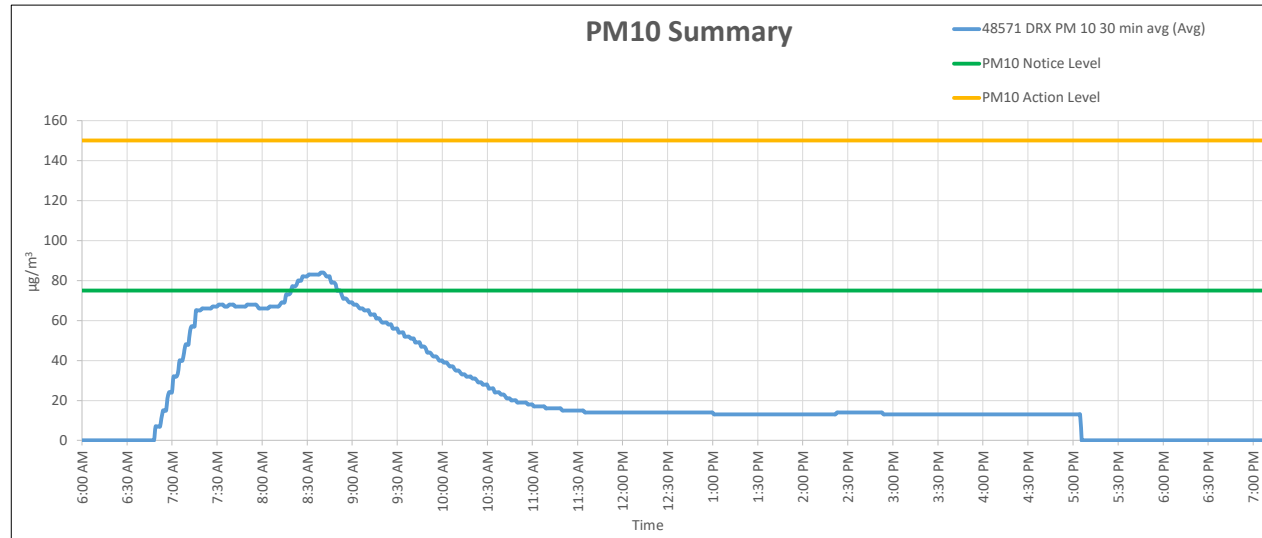
Union Pacific Railroad
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Houston Texas
Air Monitoring Values
Friday, September 13, 2024

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	7:19 AM	5:05 PM	27.60	73.00	26.10	65.00



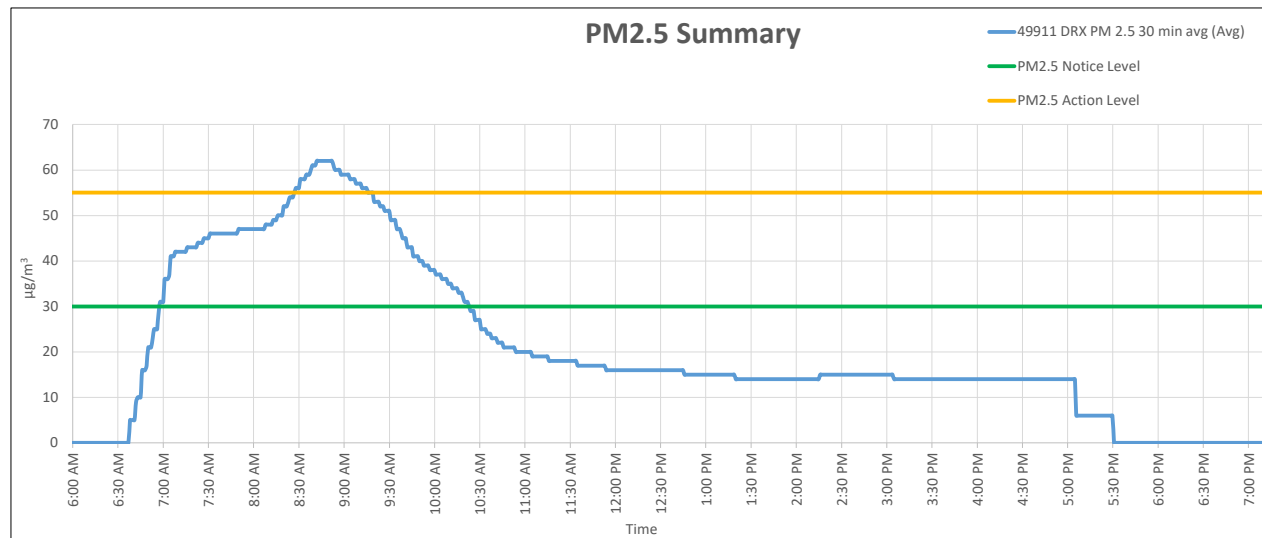
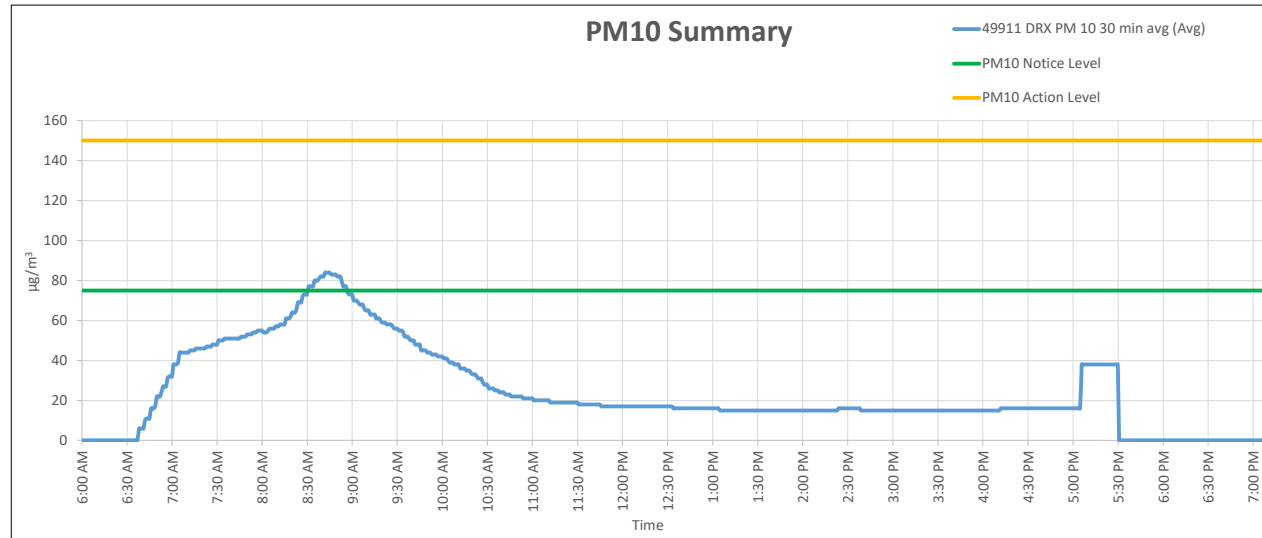
Union Pacific Railroad
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Friday, September 13, 2024

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	6:49 AM	5:05 PM	29.57	84.00	26.22	64.00



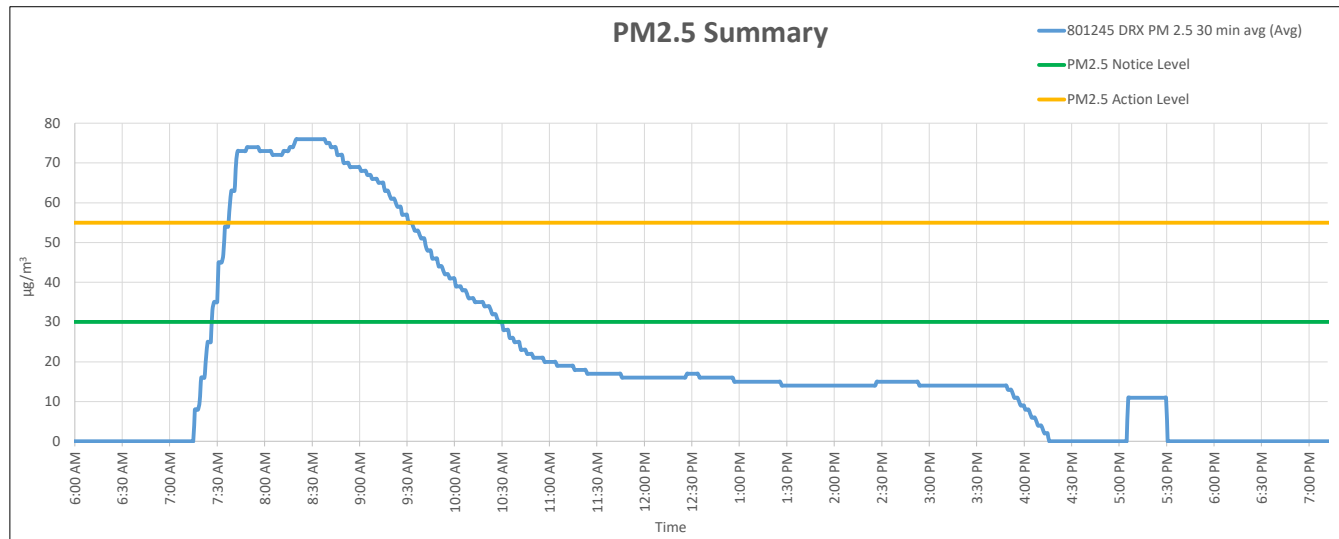
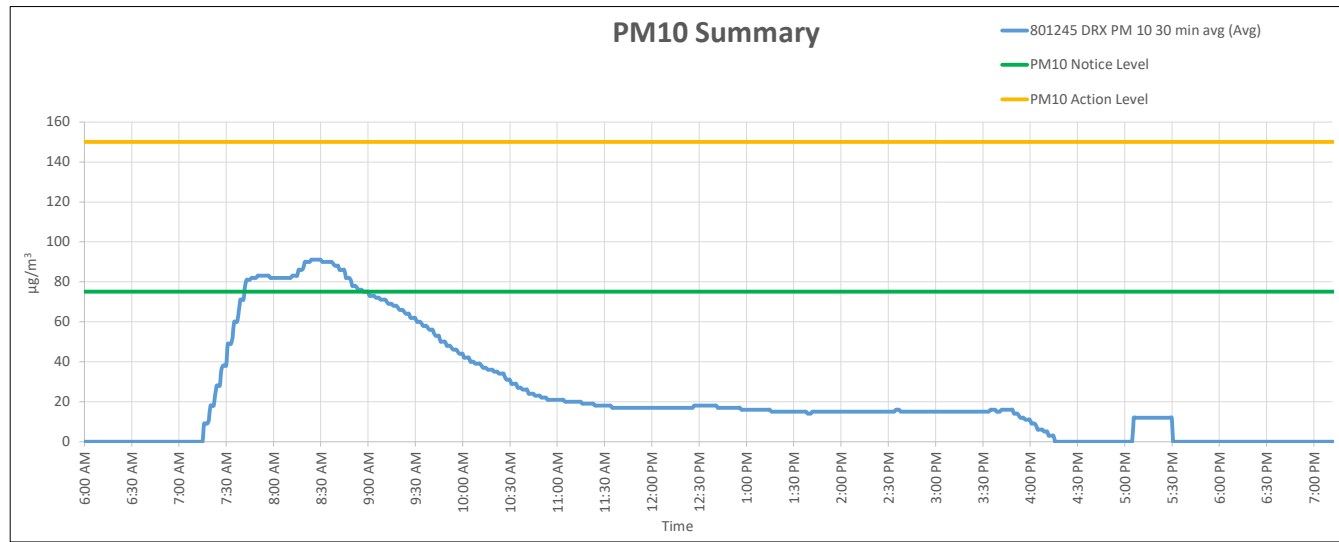
Union Pacific Railroad
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Friday, September 13, 2024

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	6:38 AM	5:30 PM	29.72	84.00	25.45	62.00

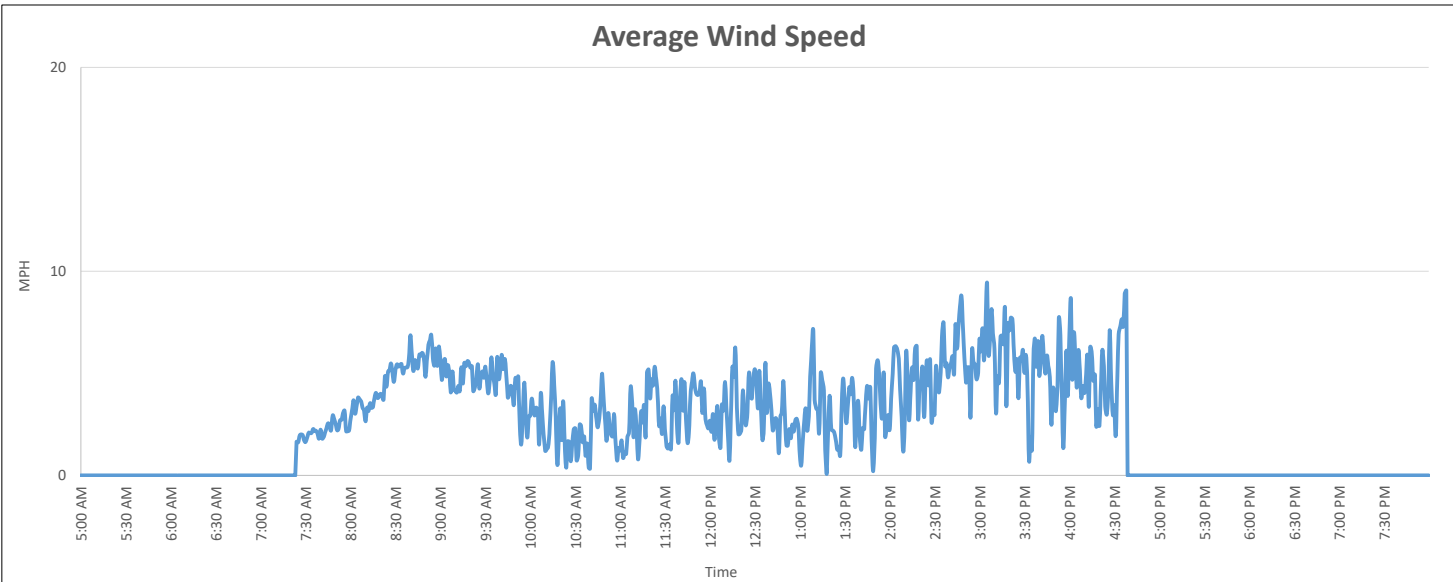
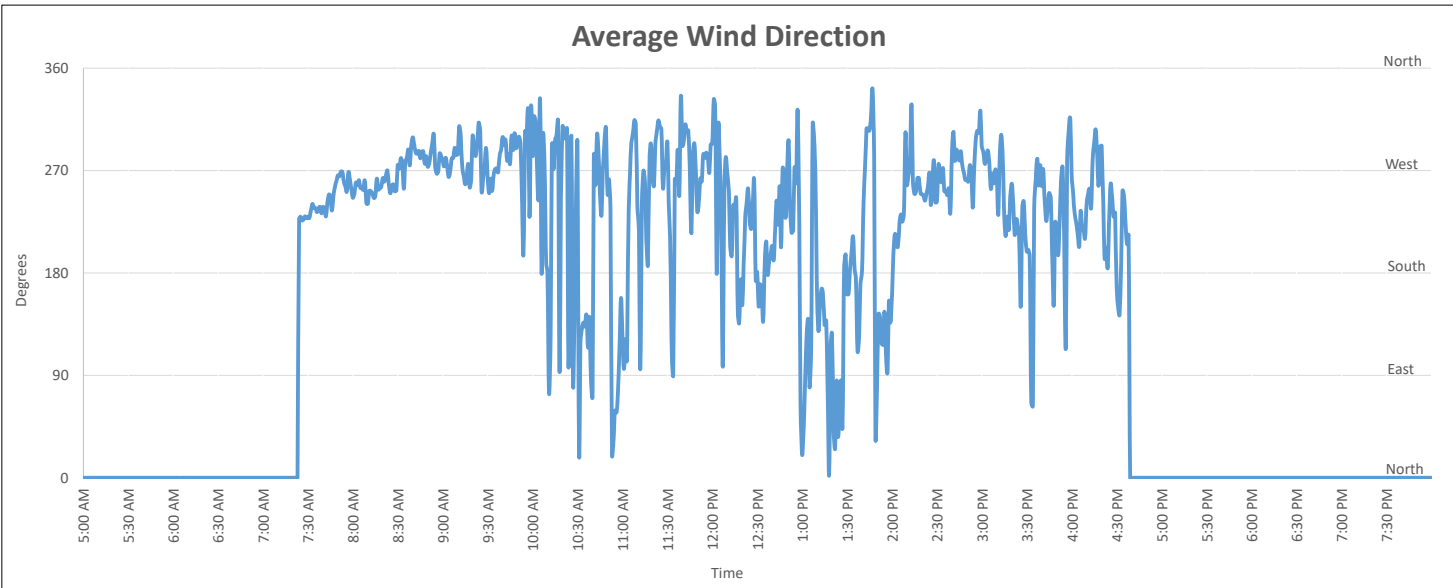


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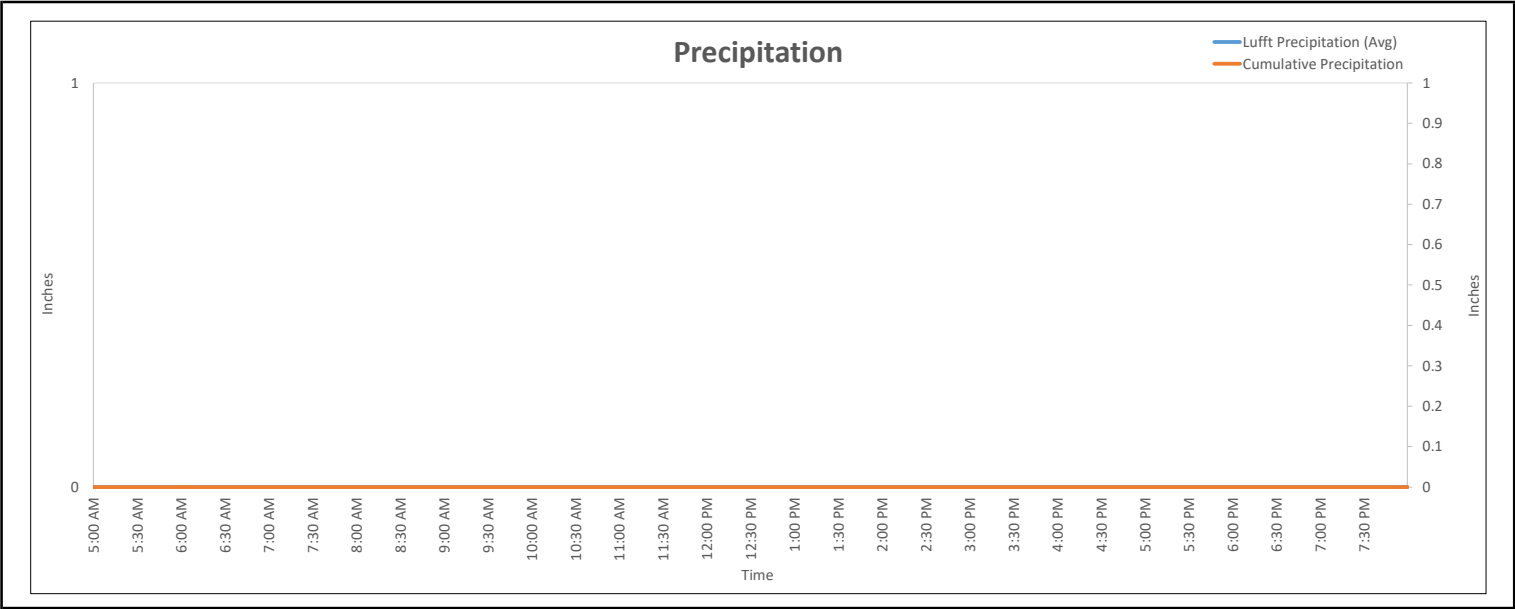
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:16 AM	5:30 PM	32.34	91.00	29.50	76.00



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Weather Daily Summary
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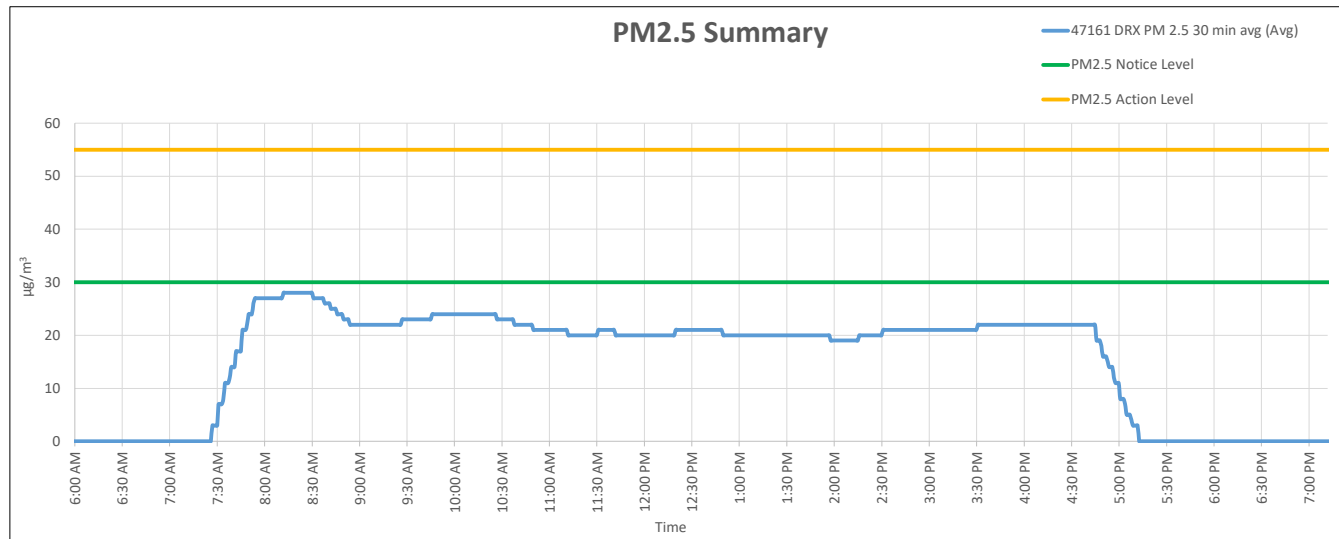
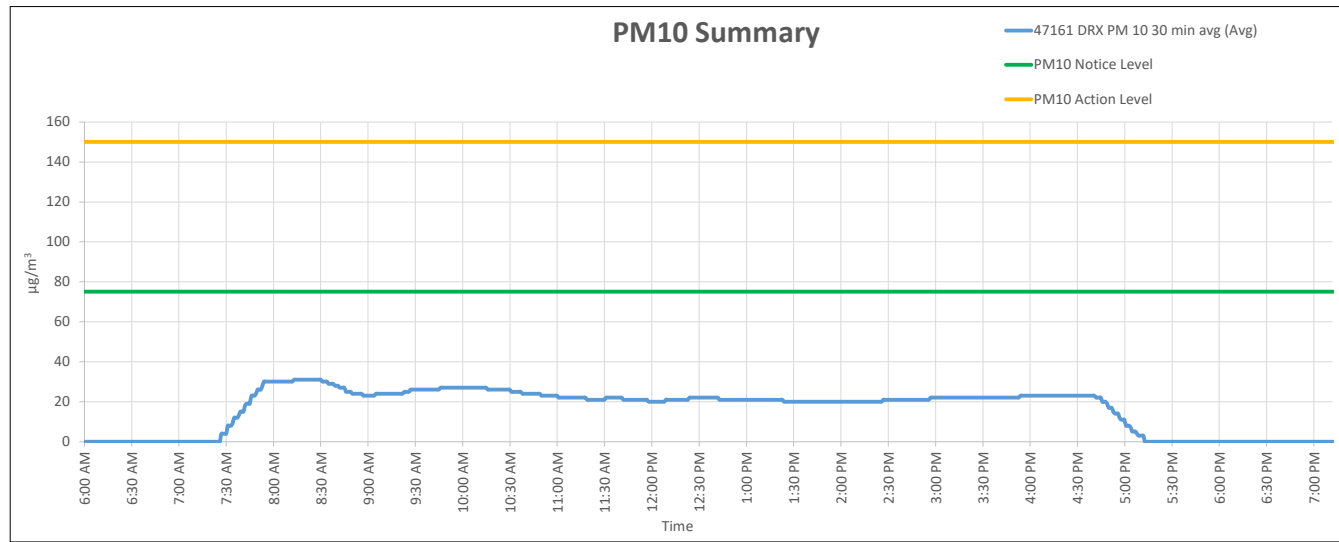


Union Pacific Railroad
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Weather Daily Summary
Monday, September 16, 2024



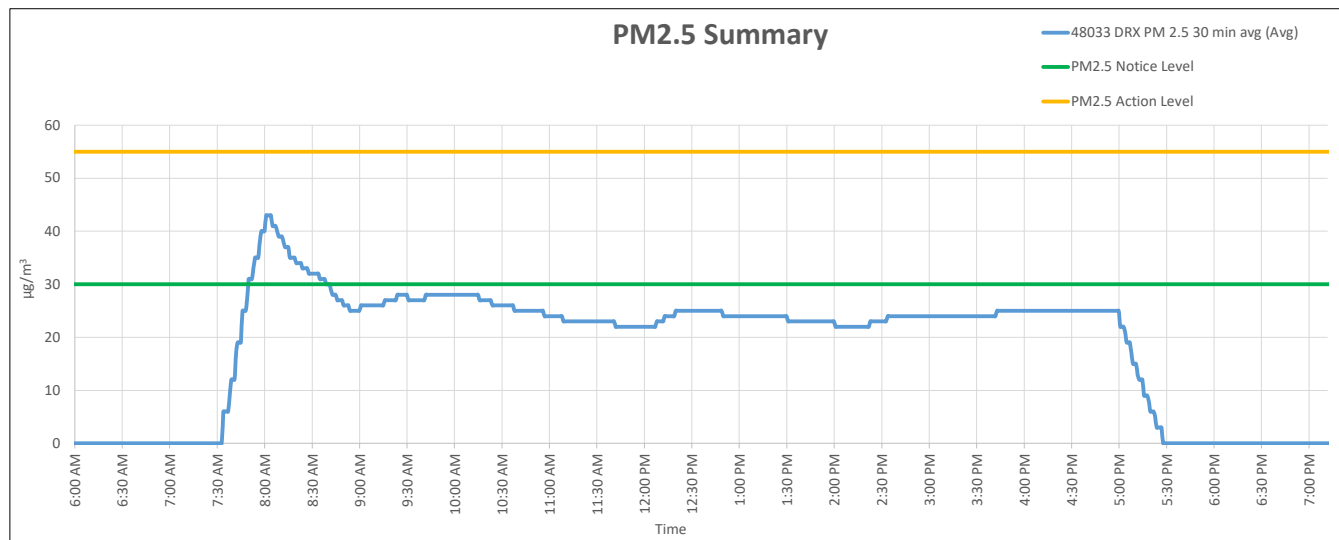
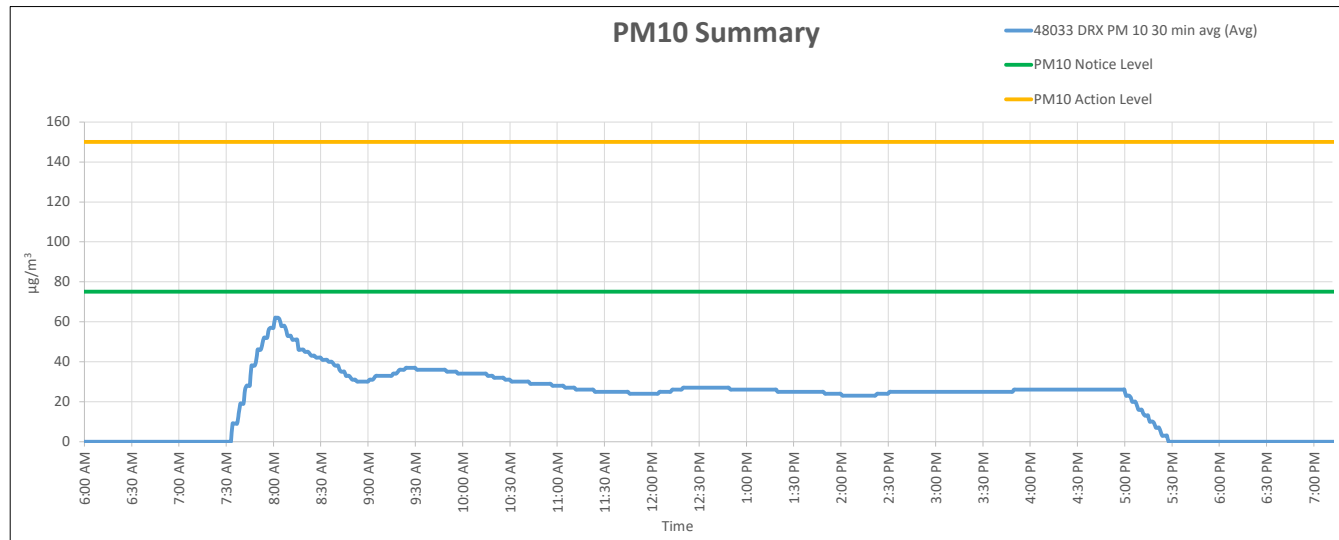
Union Pacific Railroad
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Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:27 AM	5:12 PM	22.25	31.00	21.00	28.00



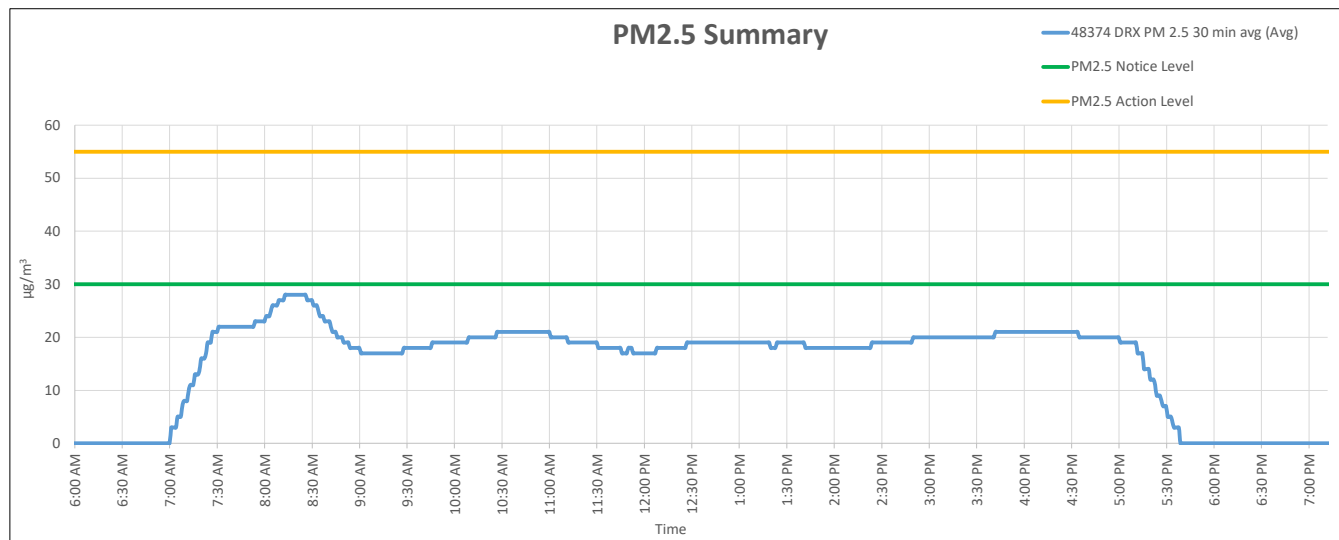
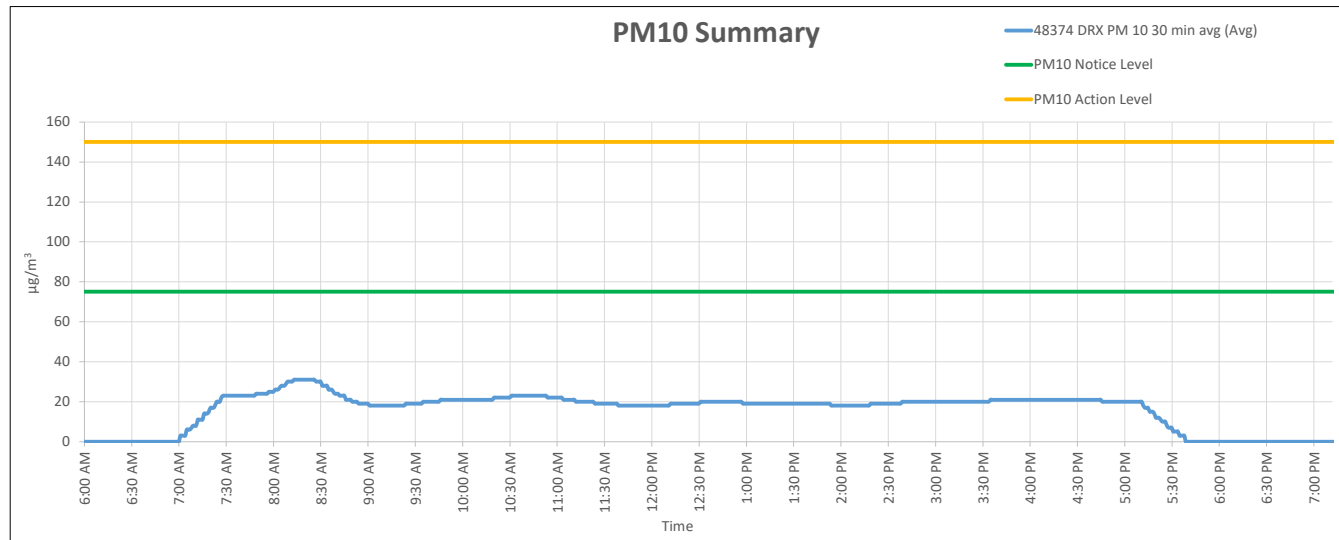
Union Pacific Railroad
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Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:34 AM	5:27 PM	28.48	62.00	24.72	43.00



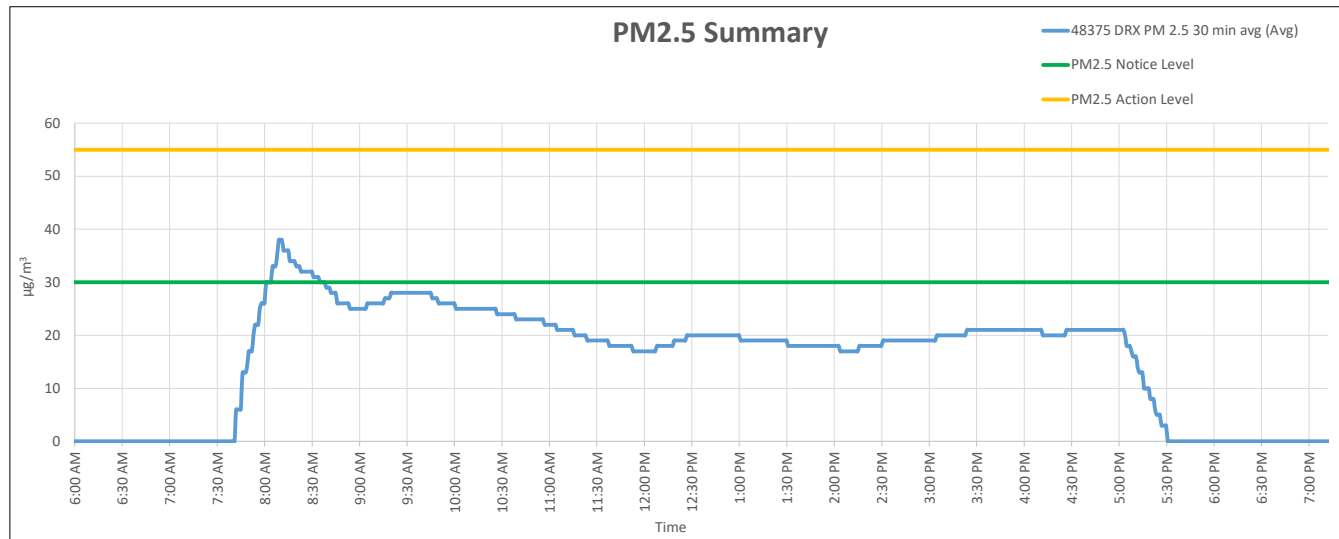
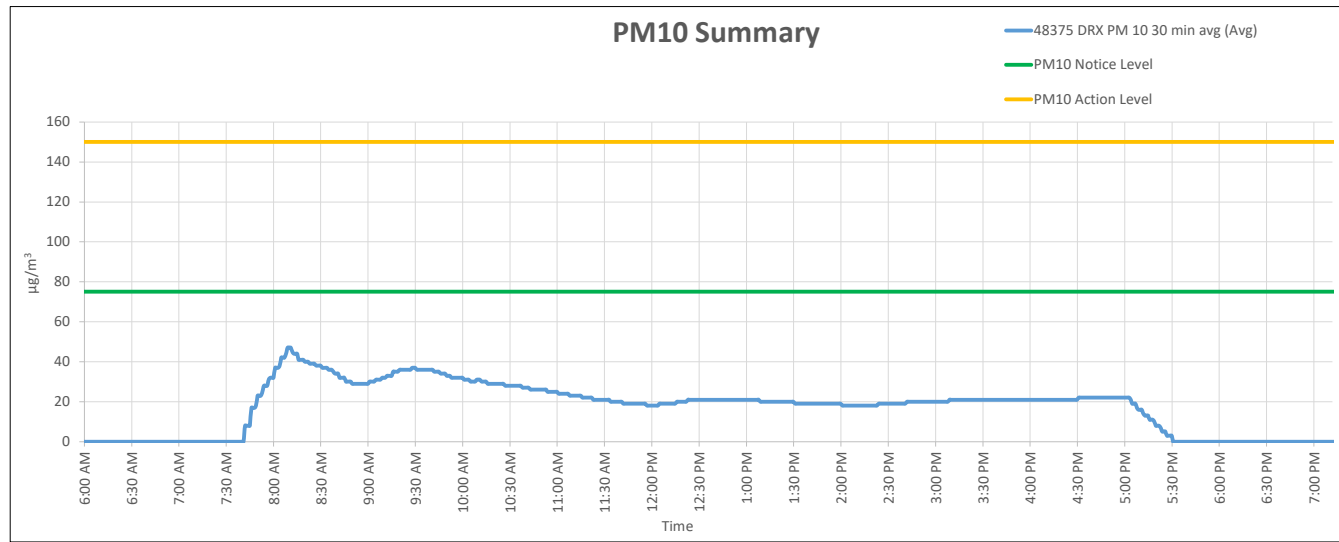
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:01 AM	5:38 PM	19.88	31.00	19.04	28.00



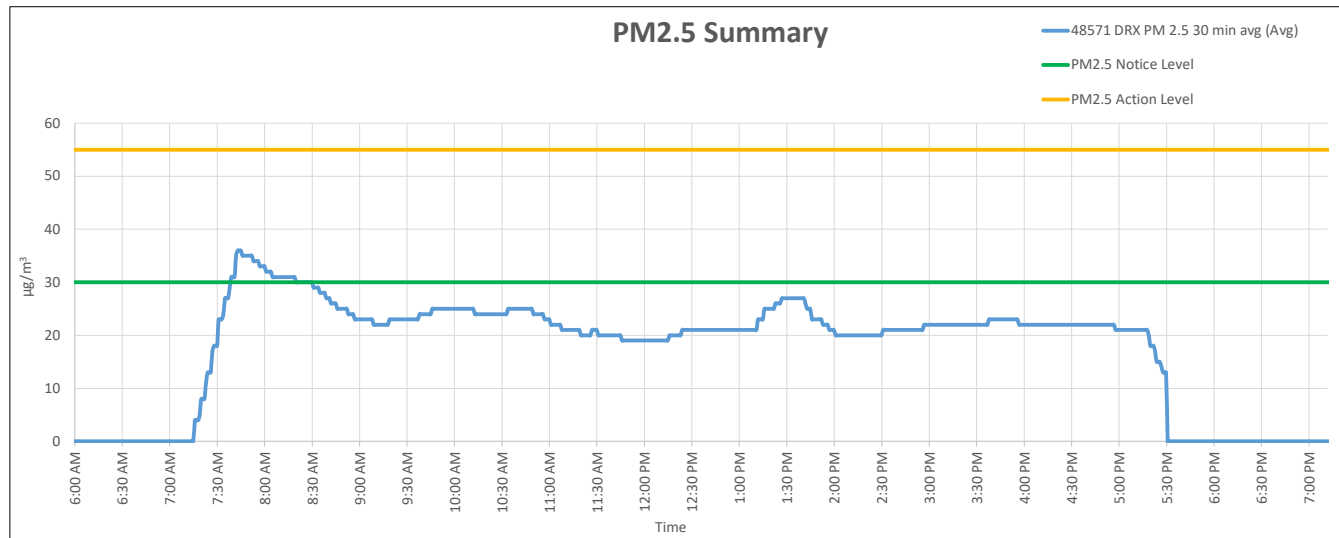
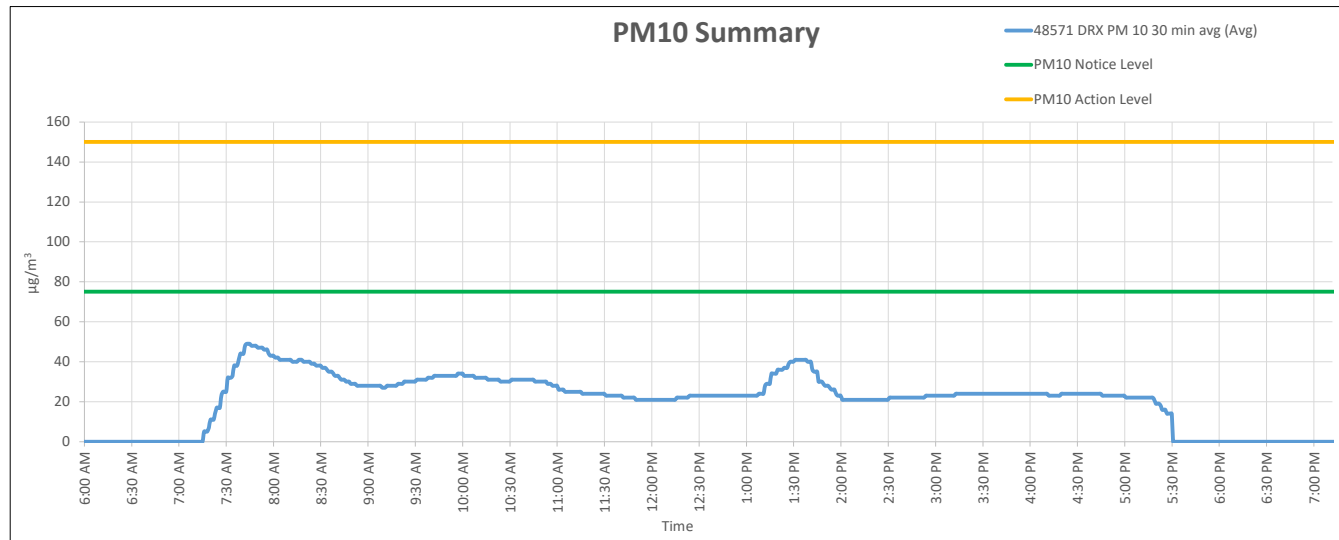
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:42 AM	5:30 PM	23.78	47.00	21.29	38.00



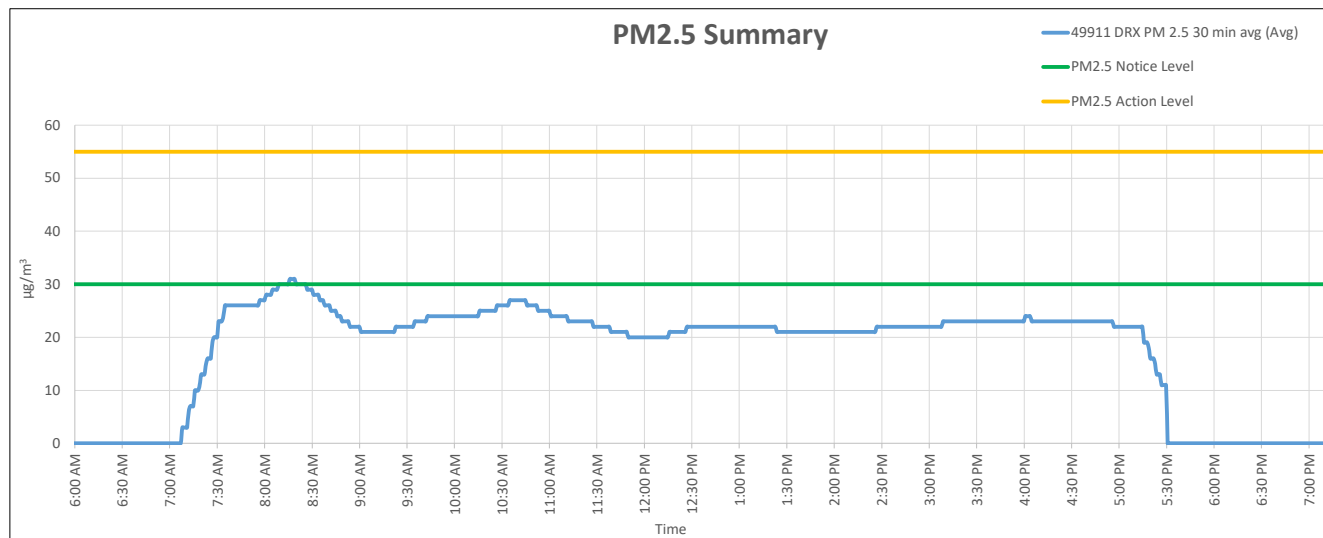
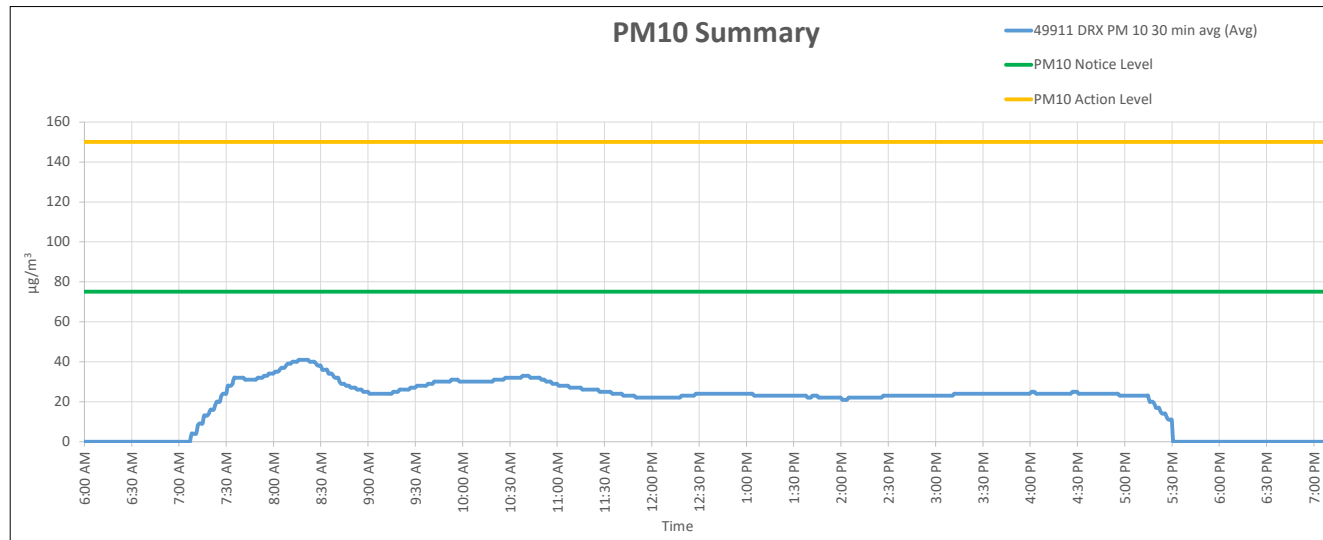
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:16 AM	5:30 PM	27.22	49.00	22.80	36.00



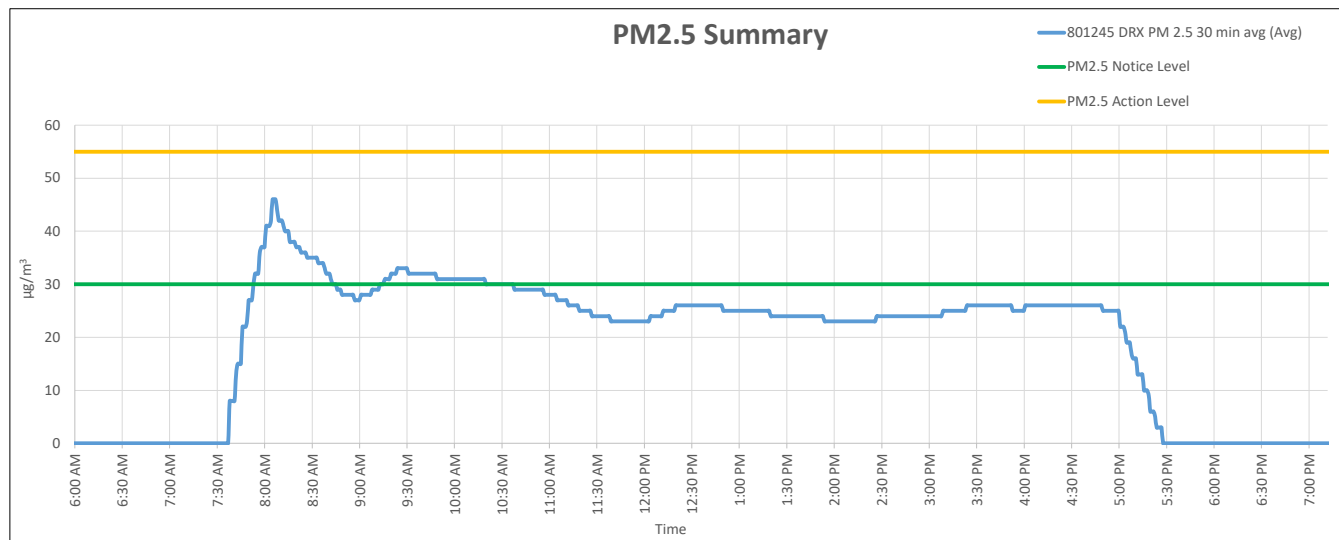
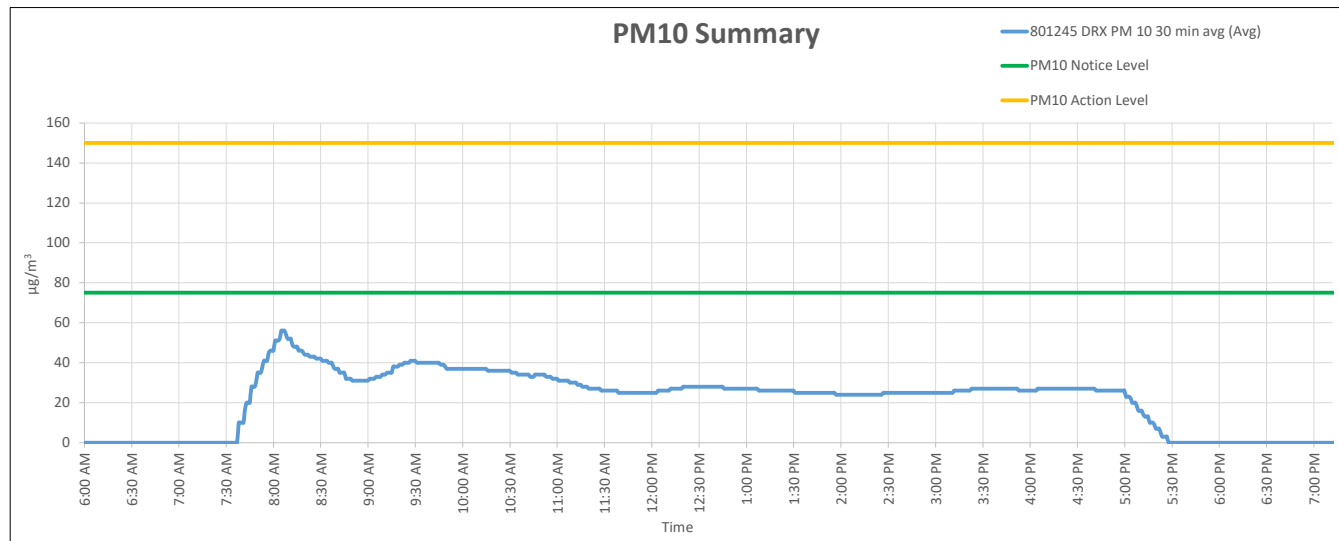
Union Pacific Railroad
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Houston Texas
Air Monitoring Values
Monday, September 16, 2024

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	7:08 AM	5:30 PM	25.48	41.00	22.48	31.00

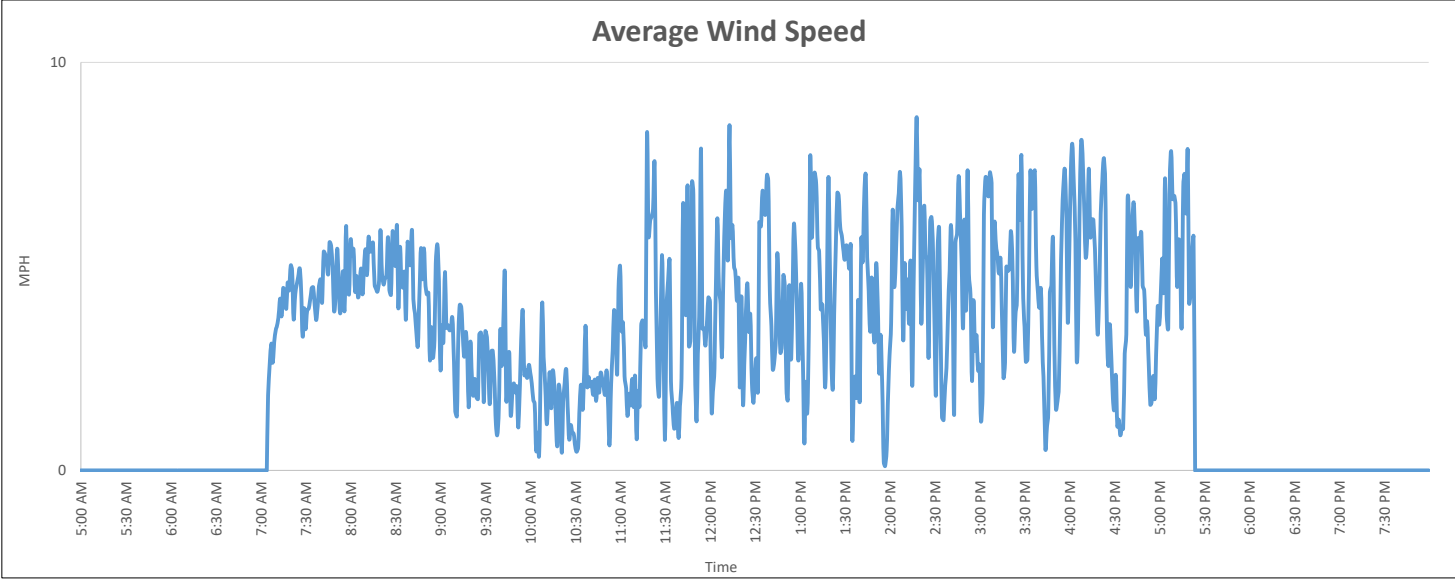
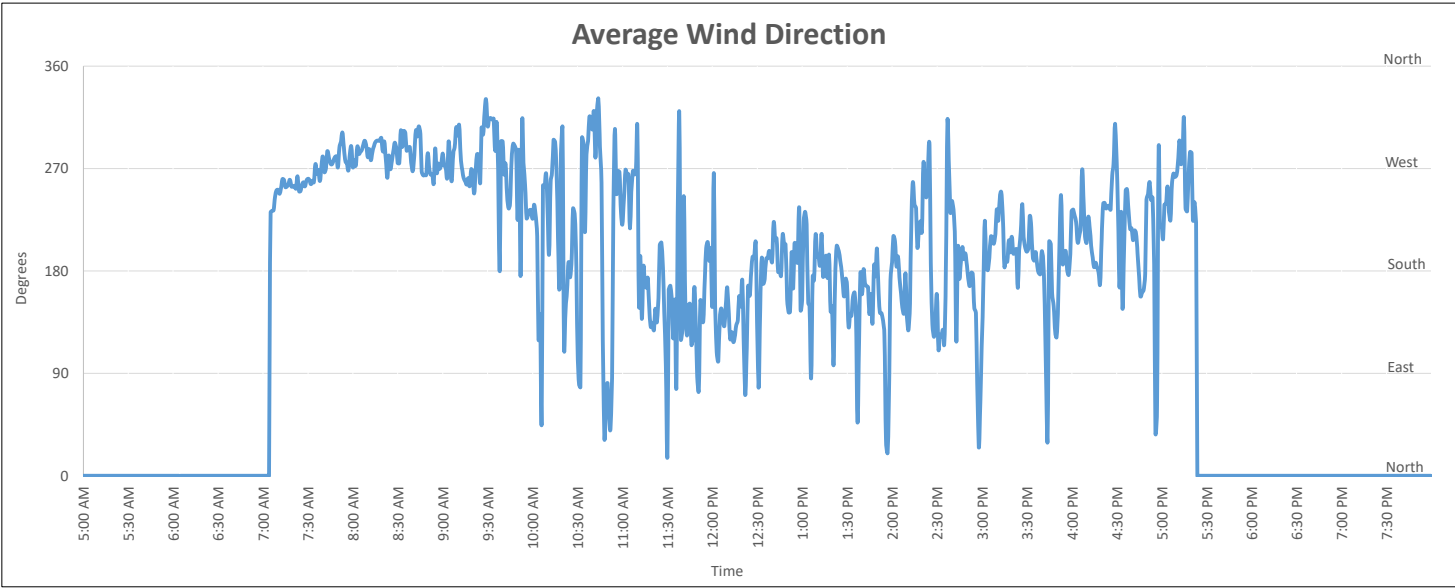


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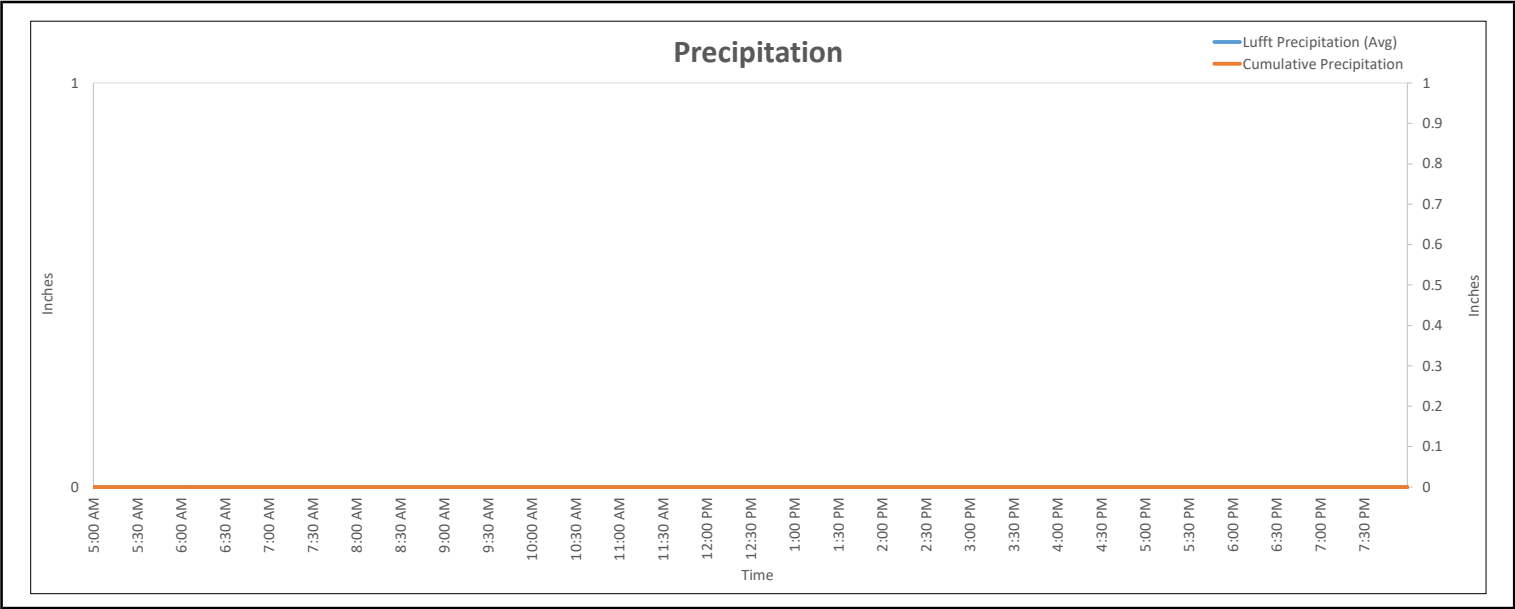
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:38 AM	5:27 PM	29.31	56.00	26.34	46.00



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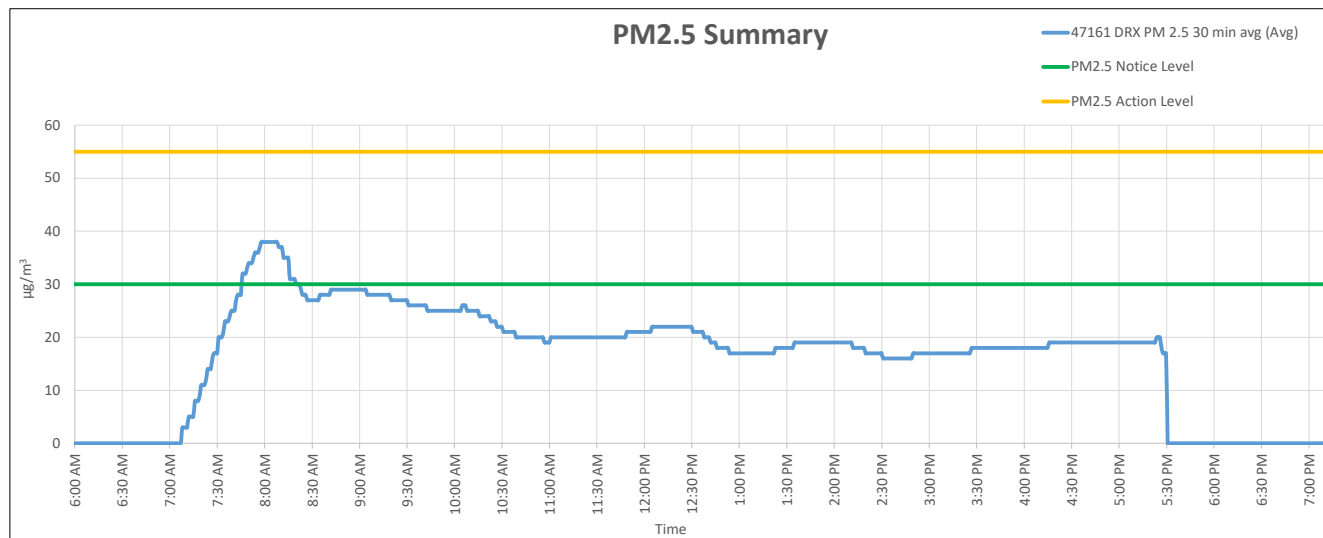
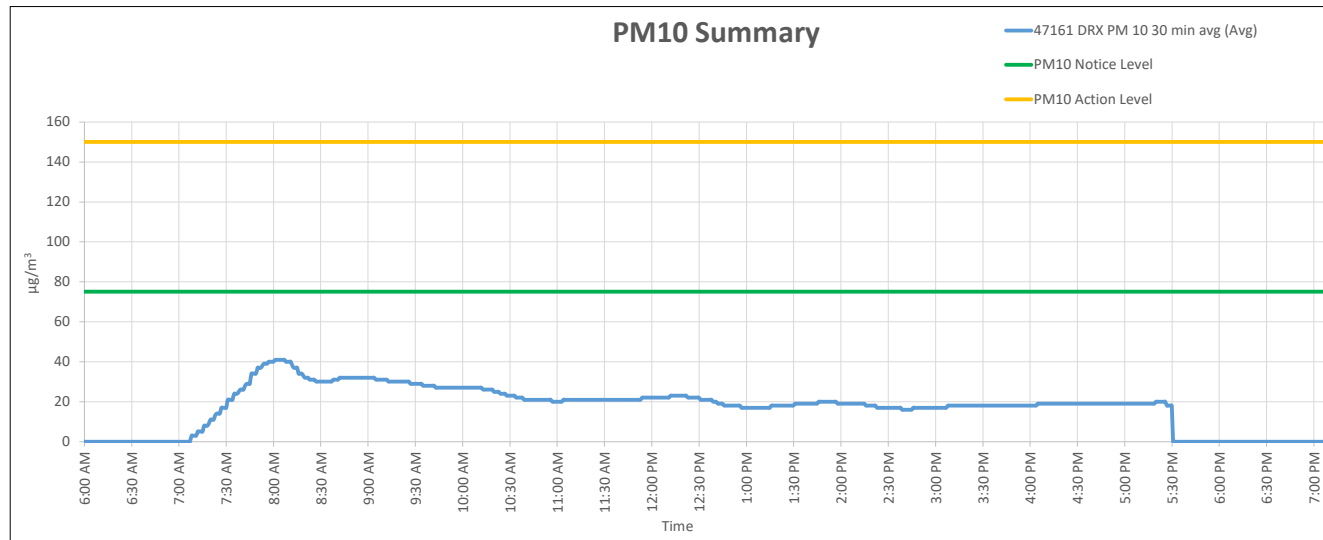


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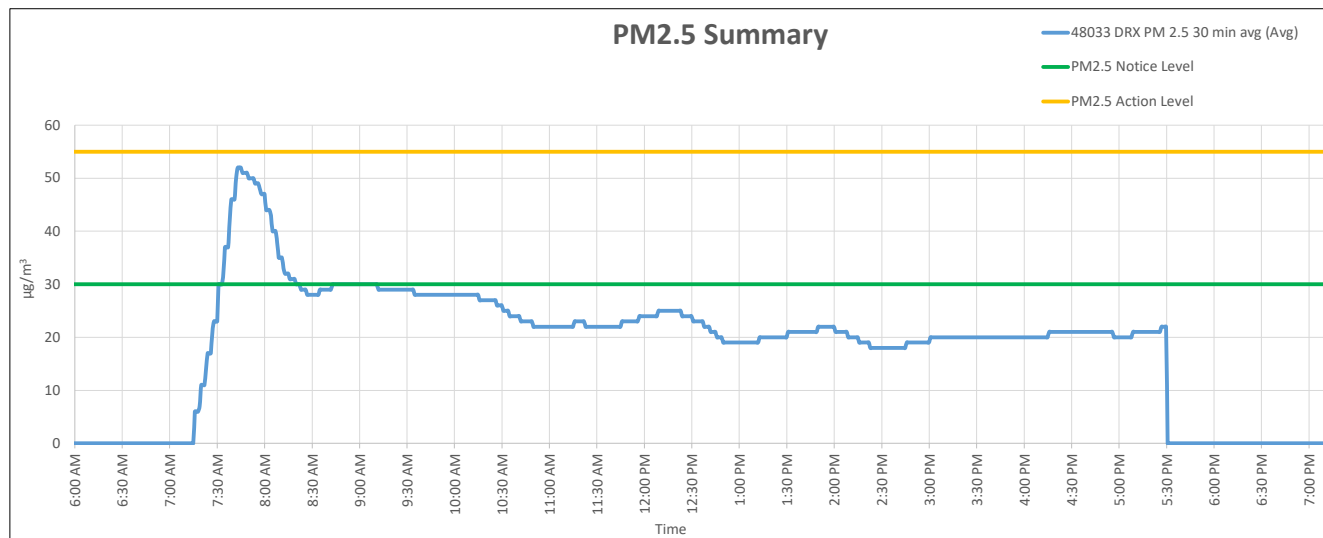
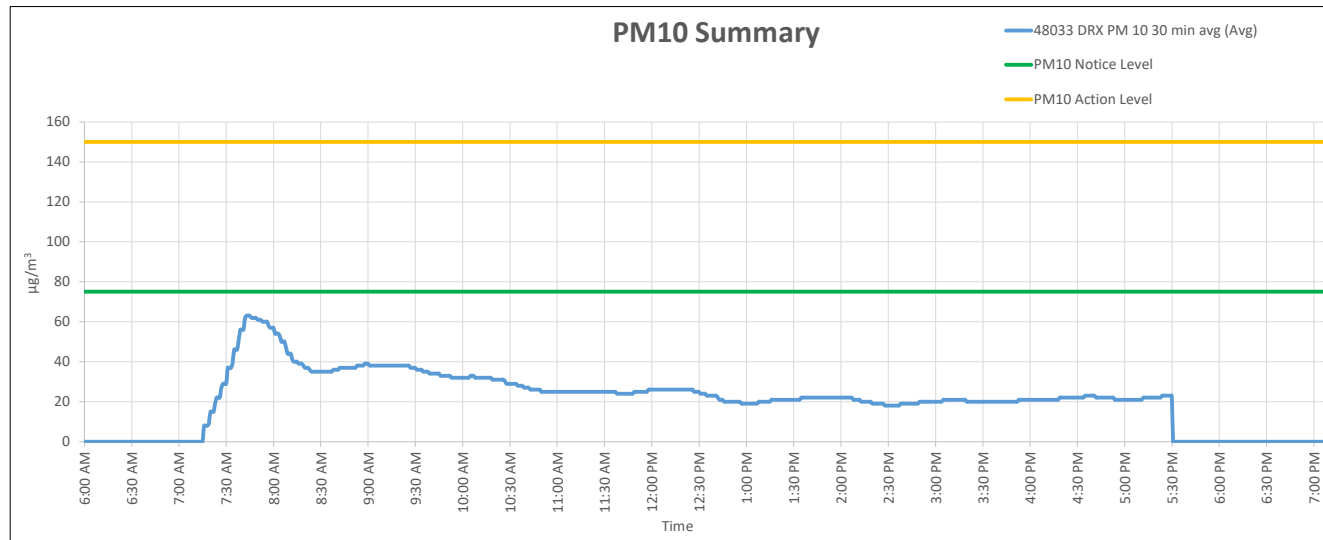
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:08 AM	5:30 PM	22.09	41.00	21.14	38.00



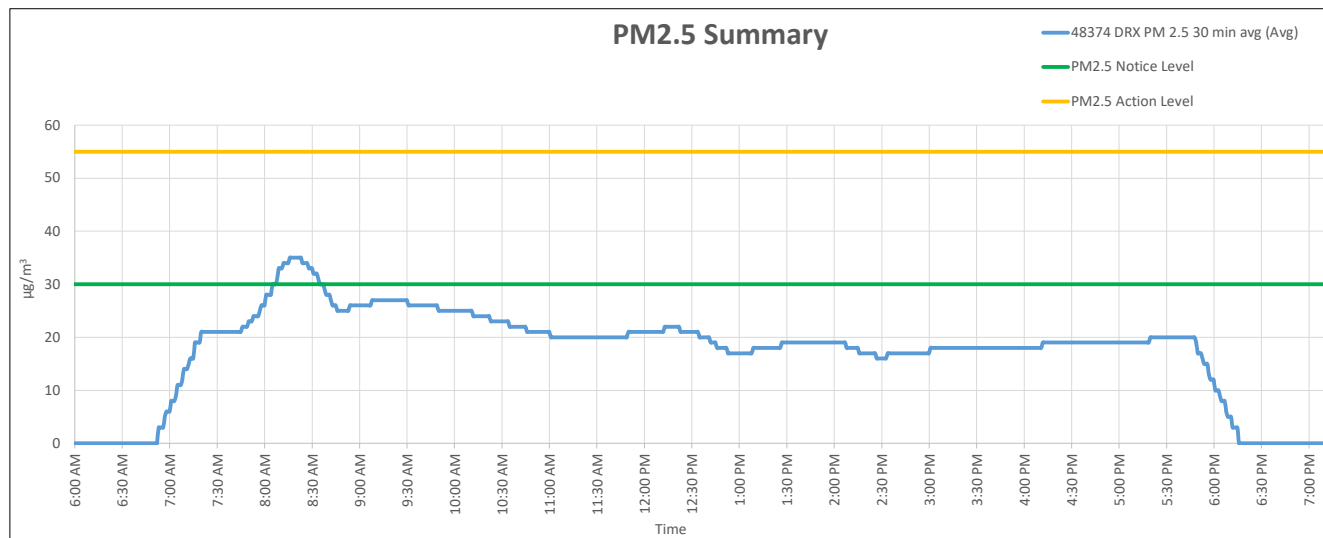
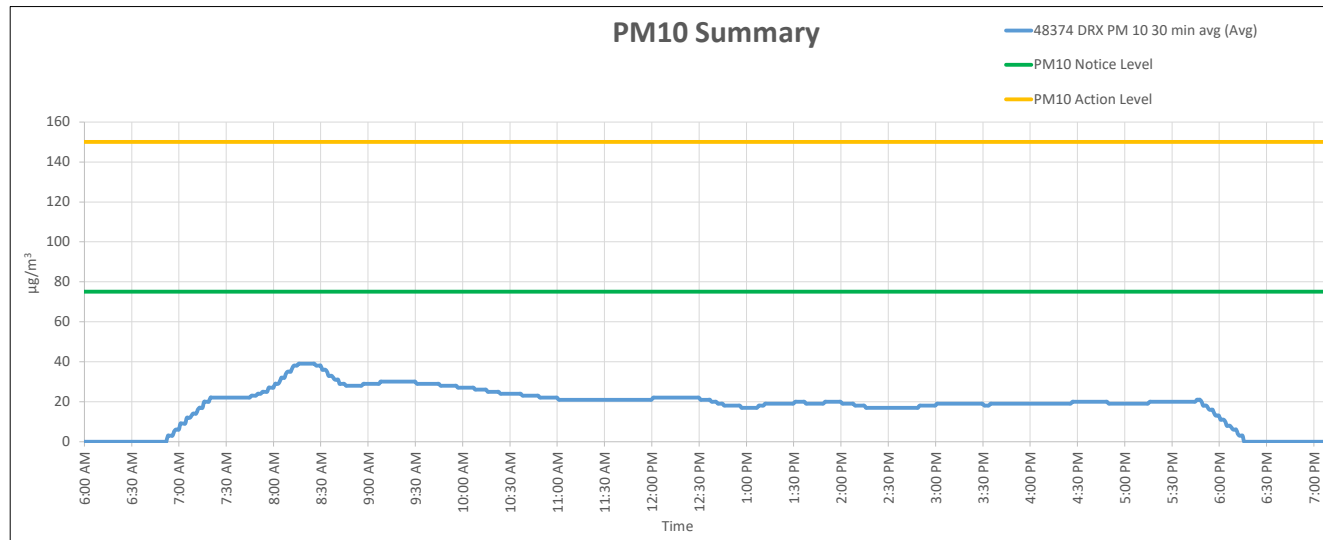
Union Pacific Railroad
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:16 AM	5:30 PM	27.16	63.00	24.14	52.00



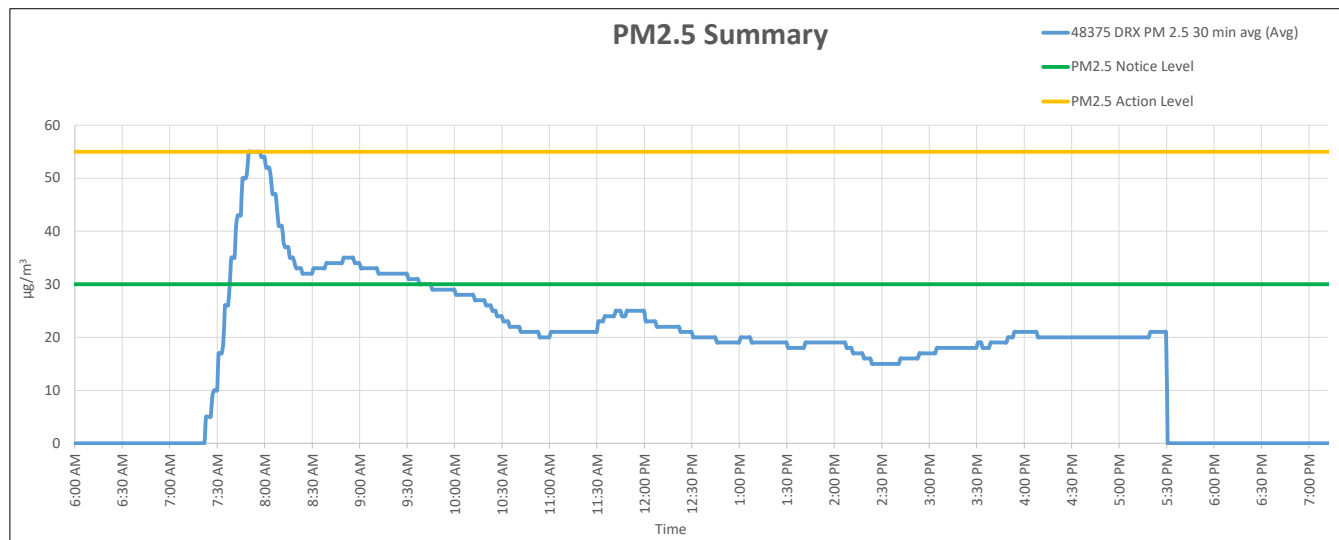
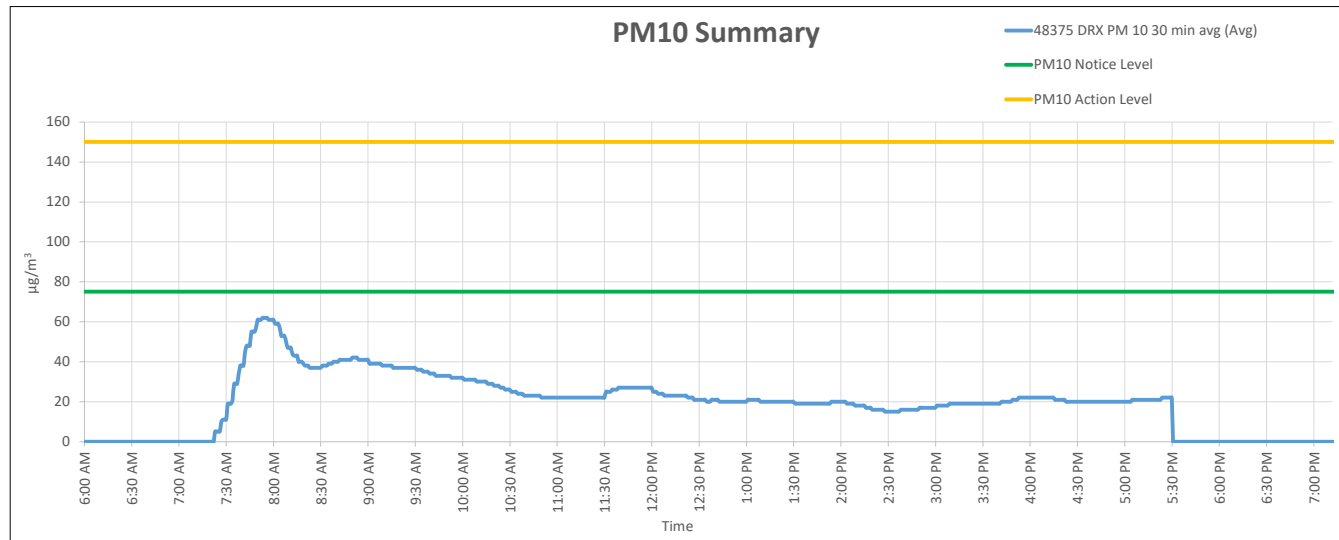
Union Pacific Railroad
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Houston Texas
Air Monitoring Values
Tuesday, September 17, 2024

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	6:53 AM	6:15 PM	21.47	39.00	20.38	35.00



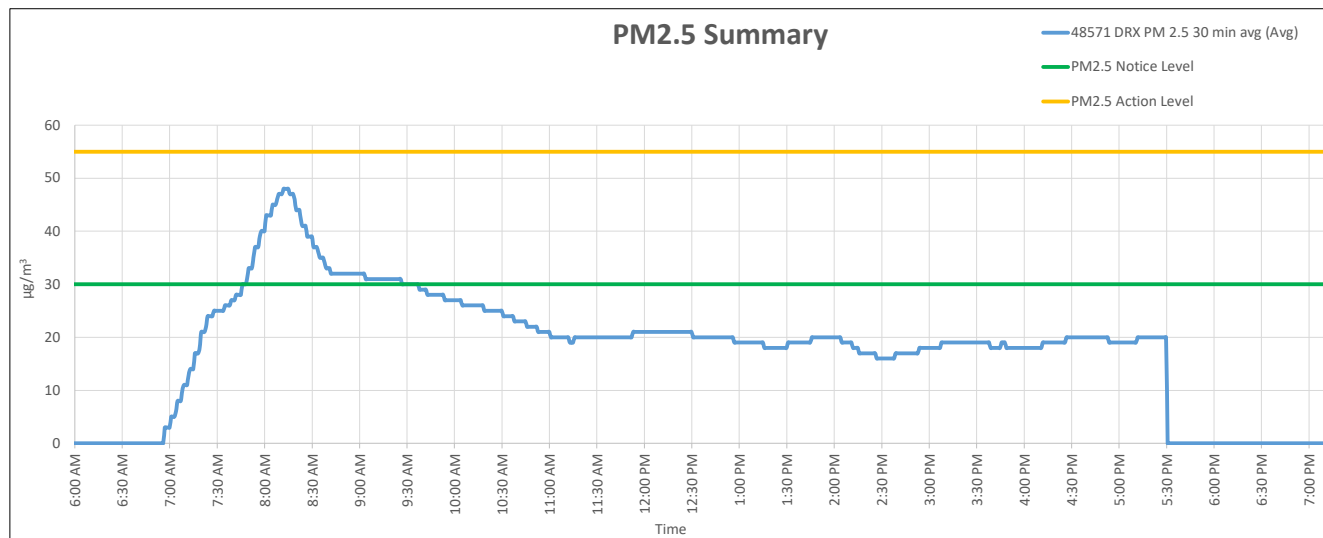
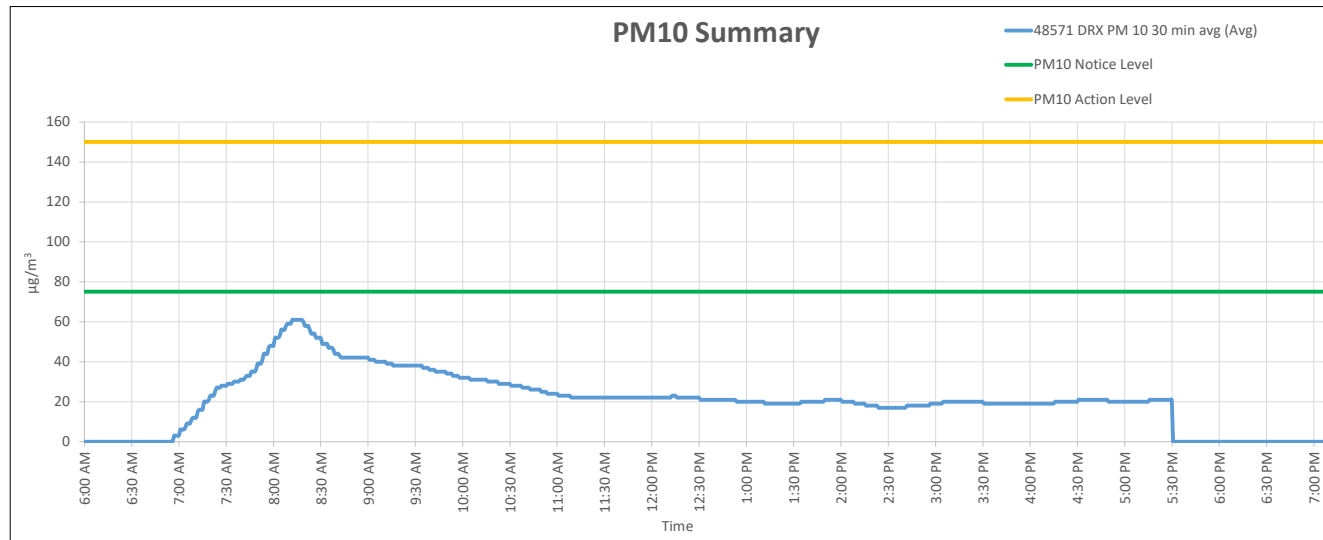
Union Pacific Railroad
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Tuesday, September 17, 2024

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	7:23 AM	5:30 PM	25.80	62.00	23.78	55.00



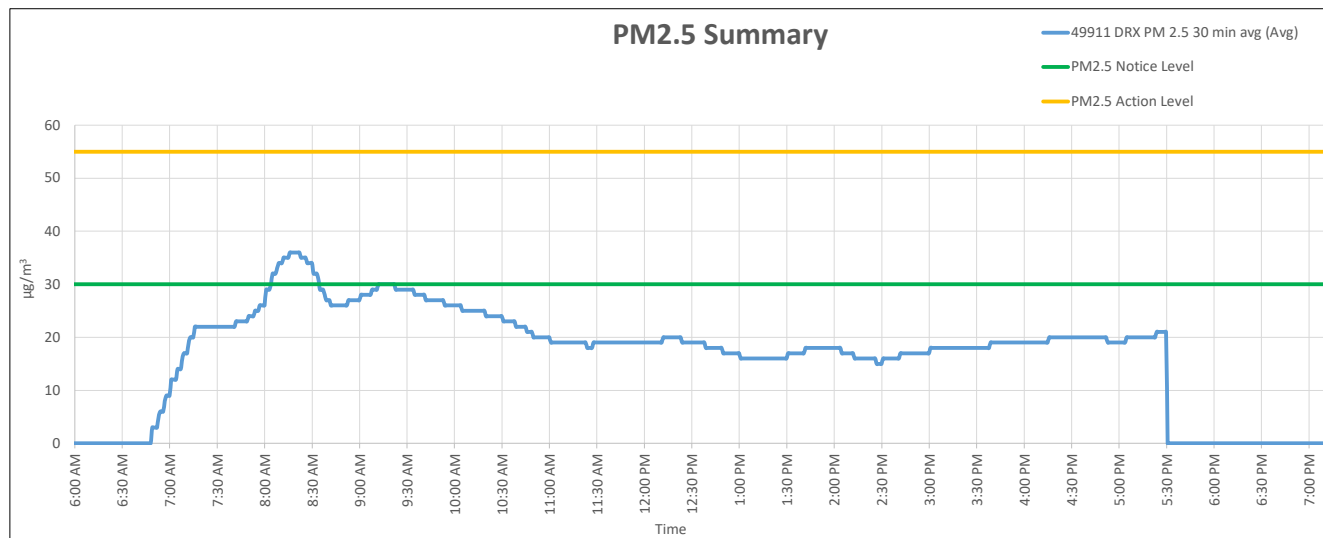
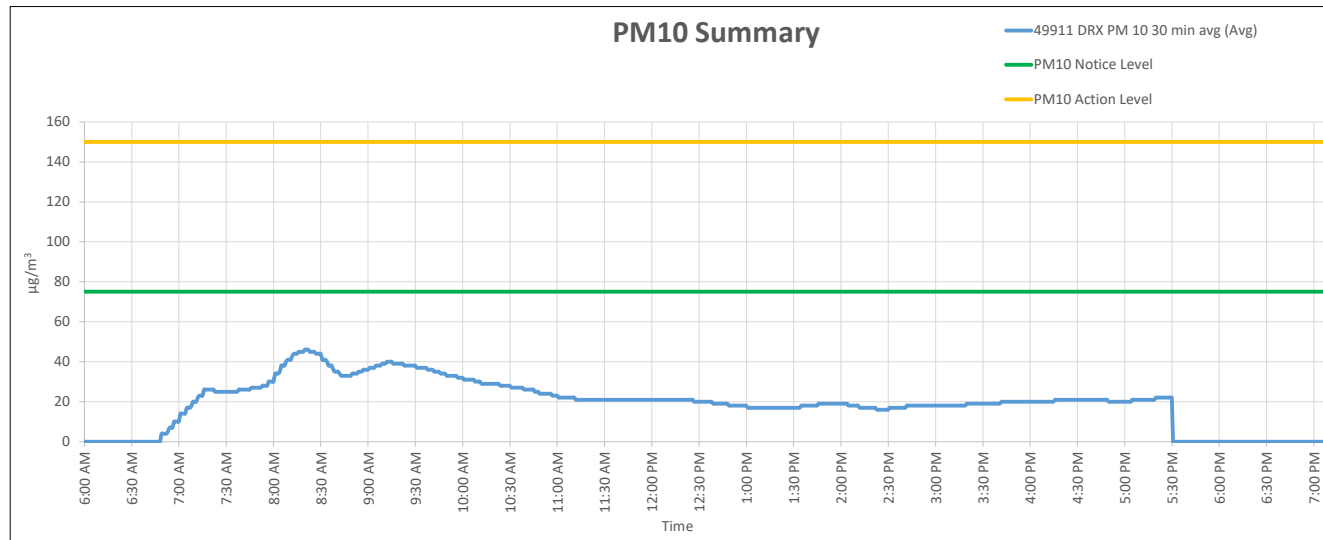
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	6:57 AM	5:30 PM	25.91	61.00	22.75	48.00



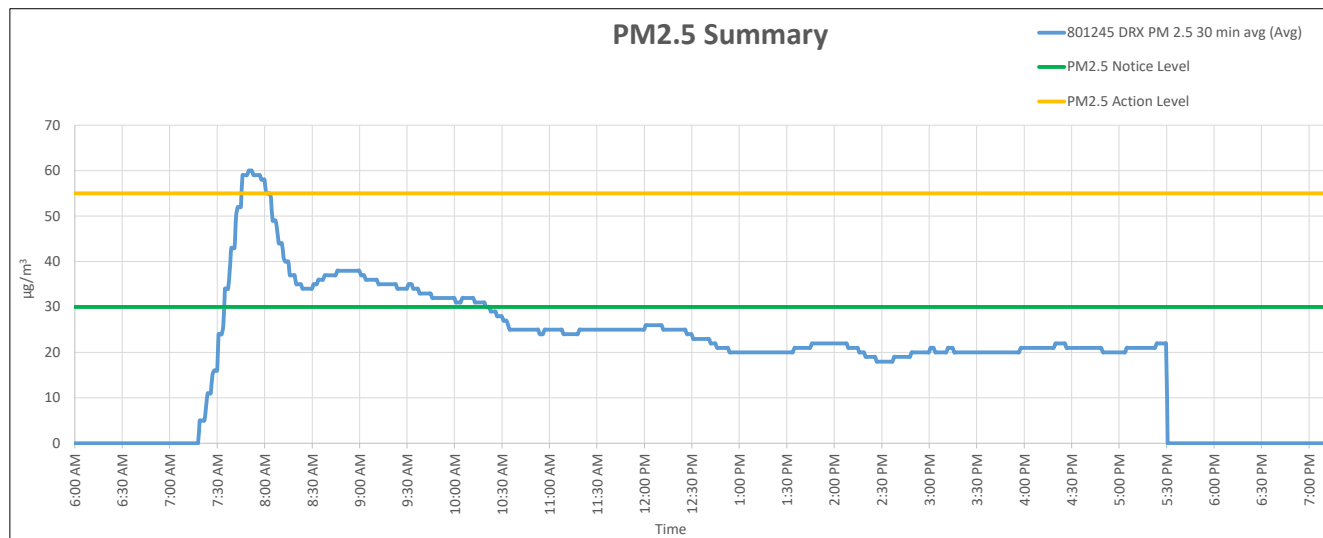
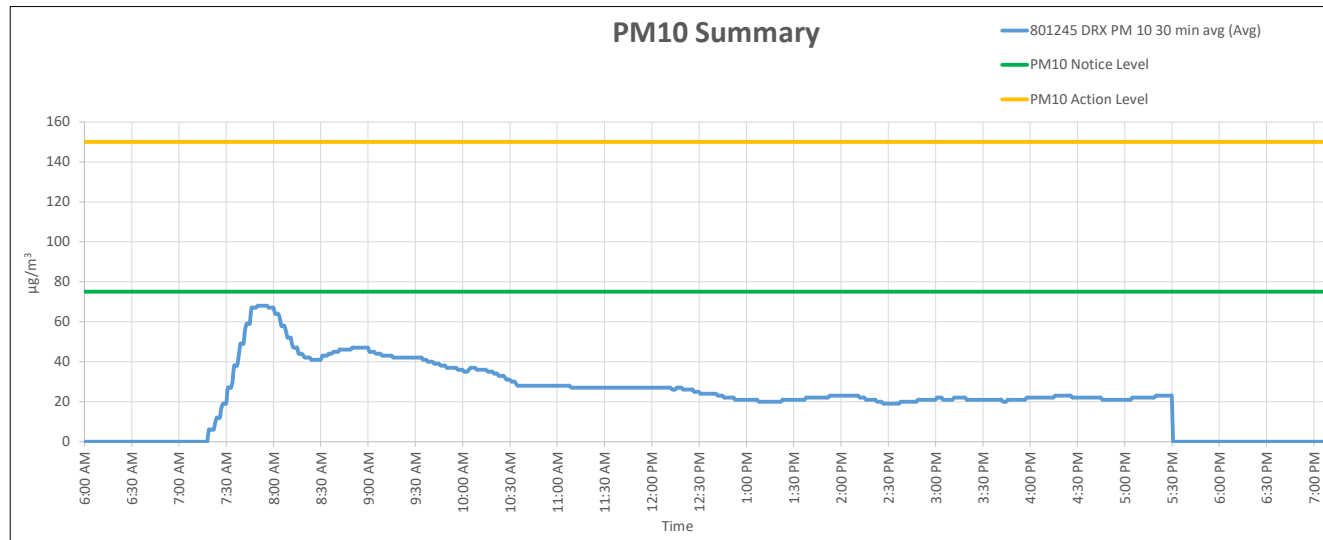
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
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Tuesday, September 17, 2024

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	6:49 AM	5:30 PM	23.81	46.00	20.86	36.00

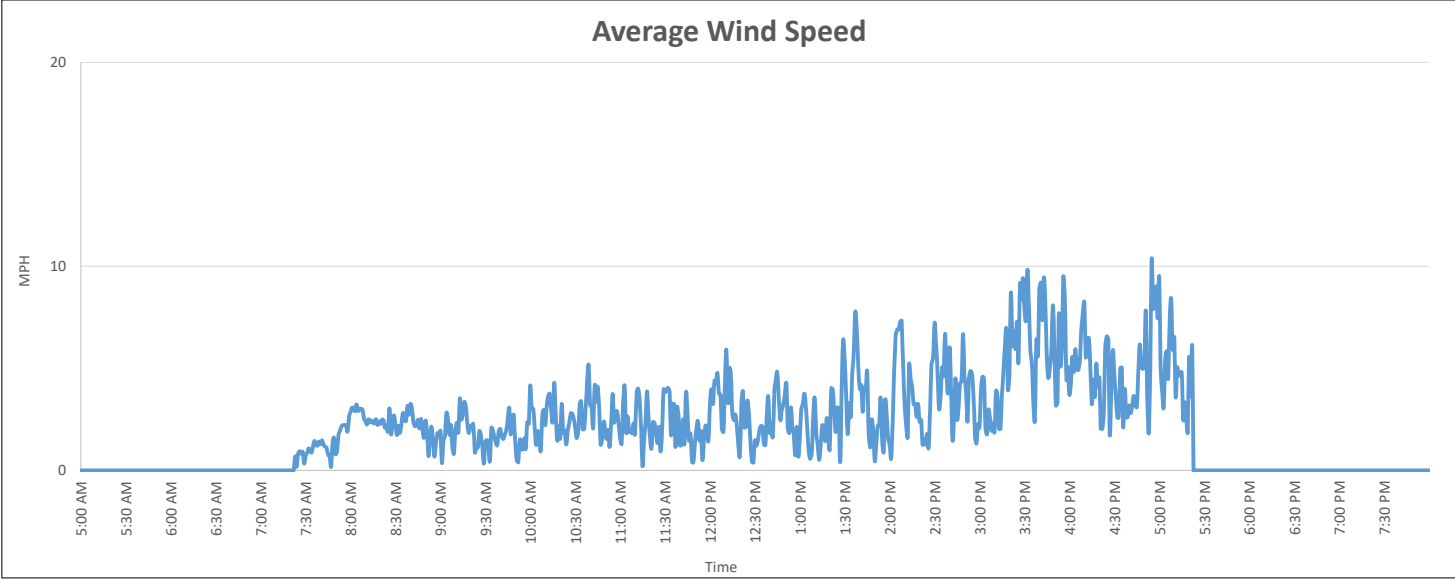
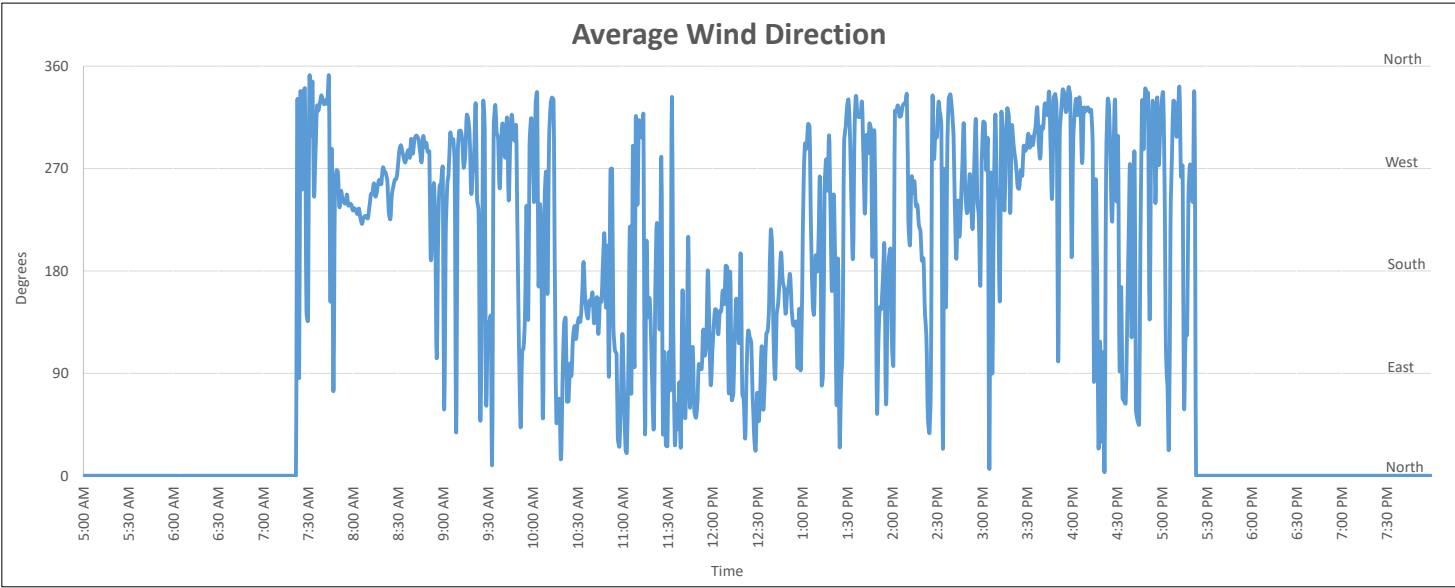


Union Pacific Railroad
Houston Wood Preserving Works Site
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Air Monitoring Values
Tuesday, September 17, 2024

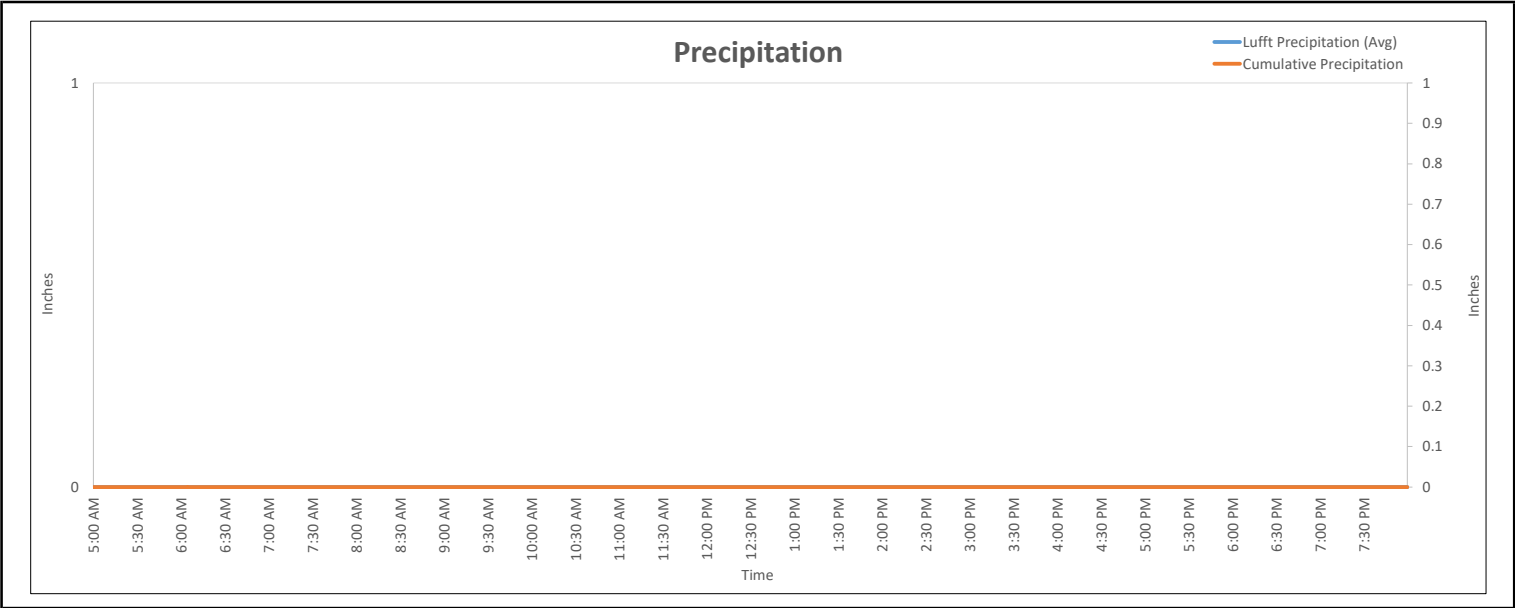
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:19 AM	5:30 PM	29.16	68.00	26.24	60.00



Union Pacific Railroad
Houston Wood Preserving Works Site
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Weather Daily Summary
Wednesday, September 18, 2024

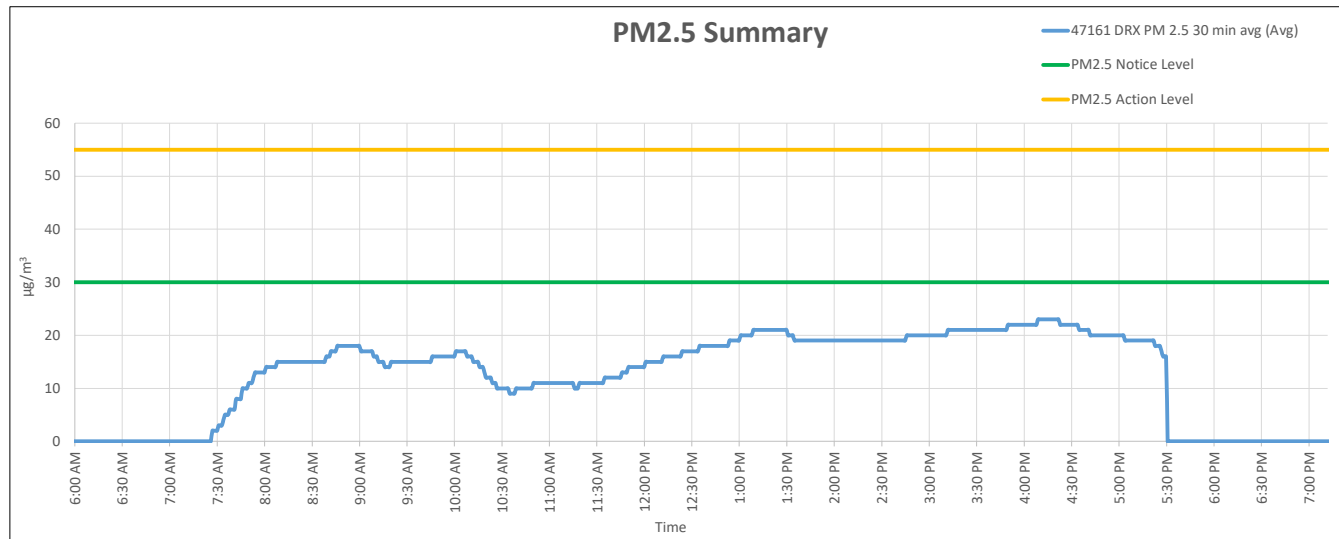
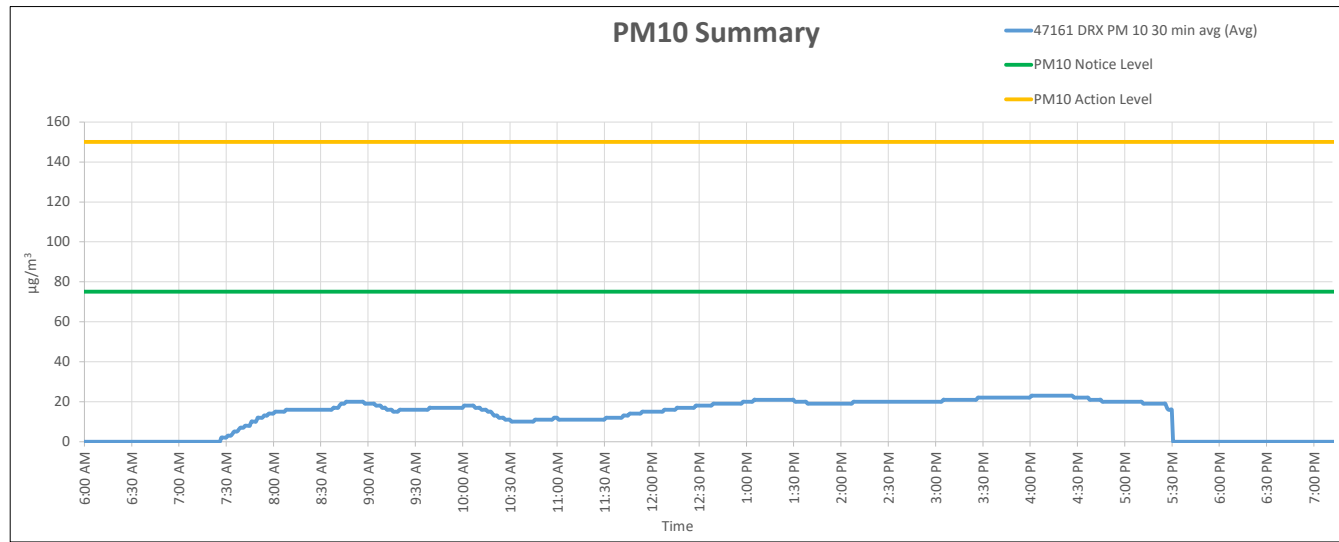


Union Pacific Railroad
Houston Wood Preserving Works Site
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Weather Daily Summary
Wednesday, September 18, 2024



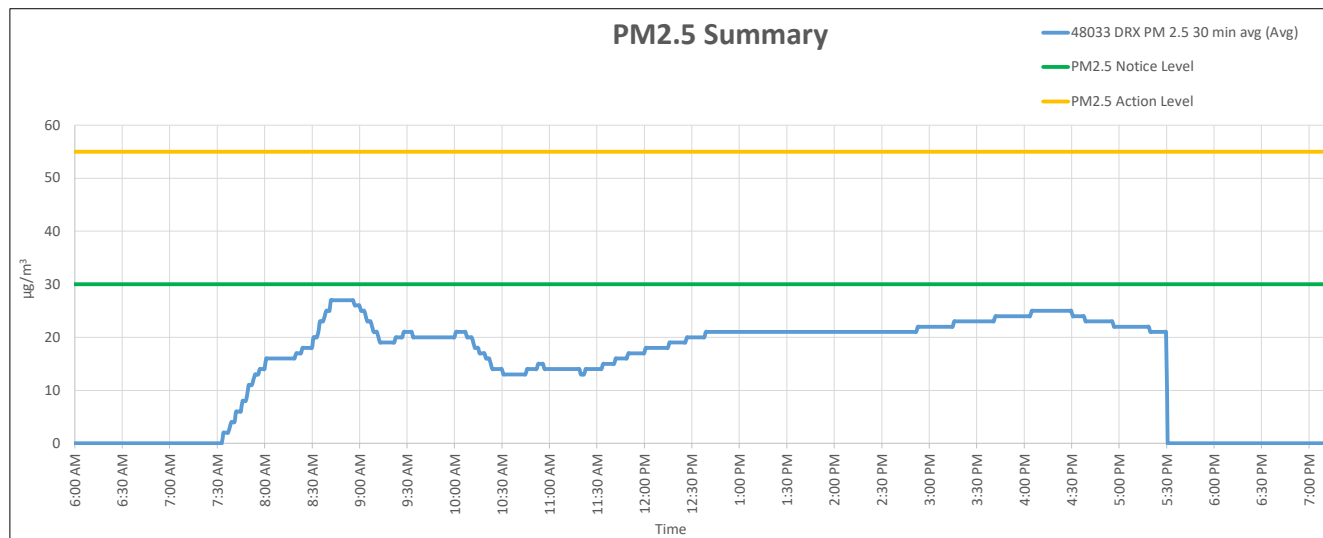
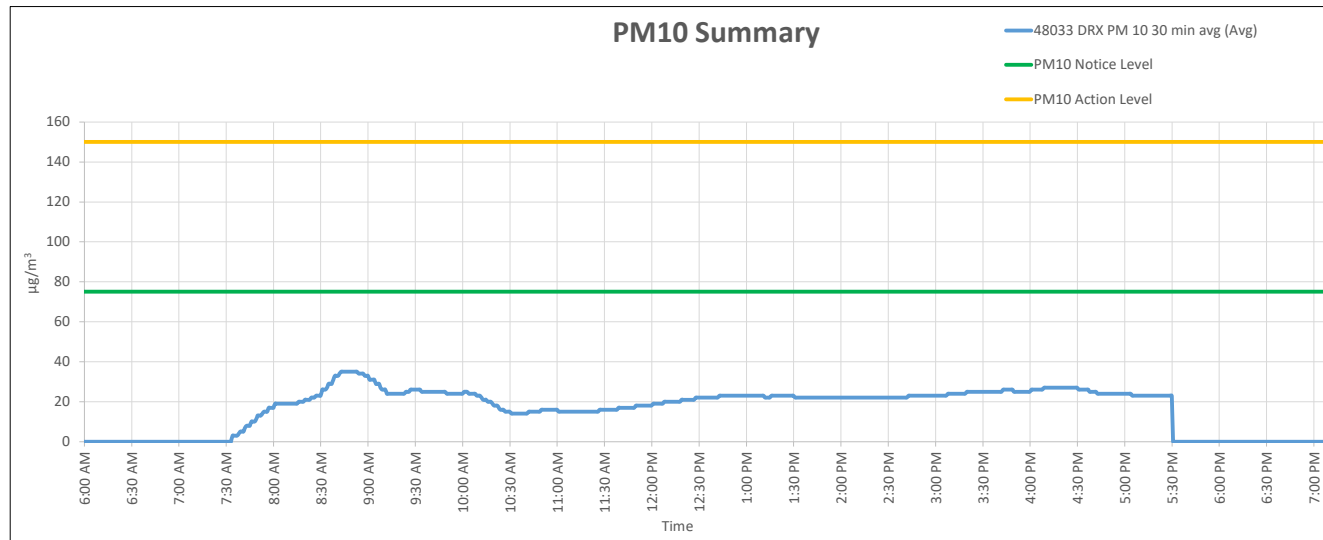
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Wednesday, September 18, 2024

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	7:27 AM	5:30 PM	17.26	23.00	16.65	23.00



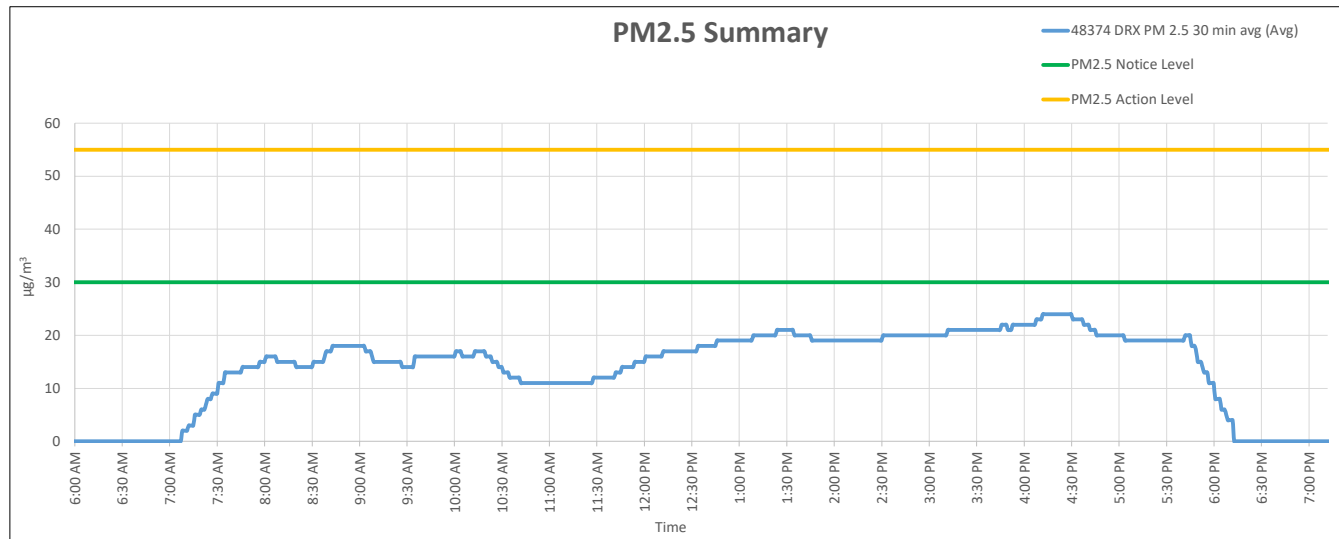
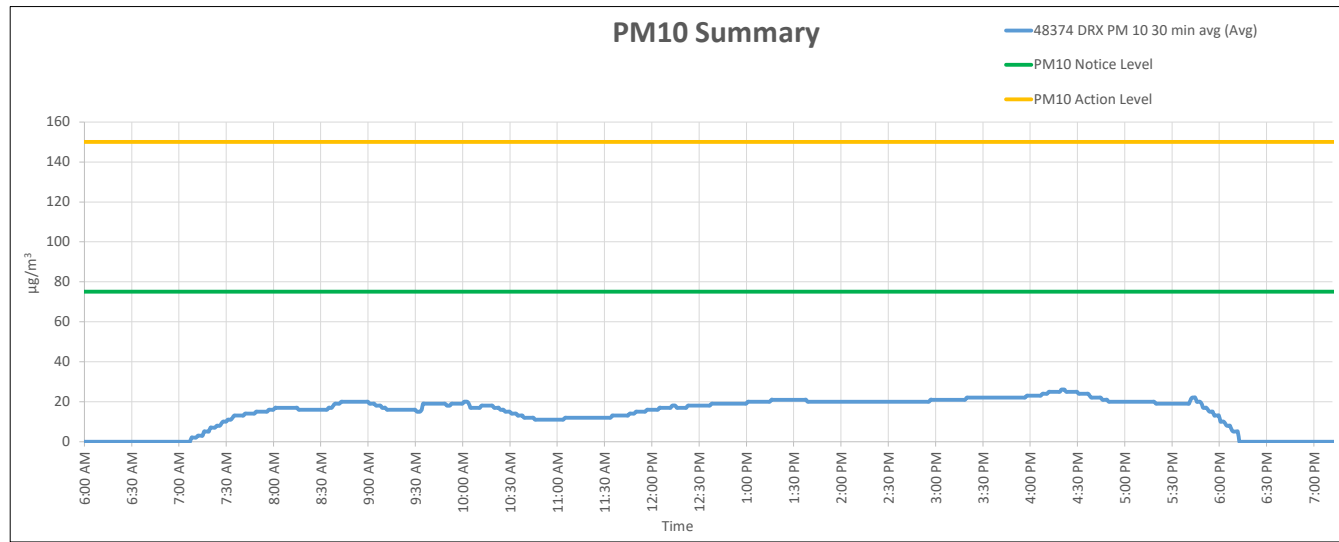
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Wednesday, September 18, 2024

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	7:34 AM	5:30 PM	21.92	35.00	19.63	27.00



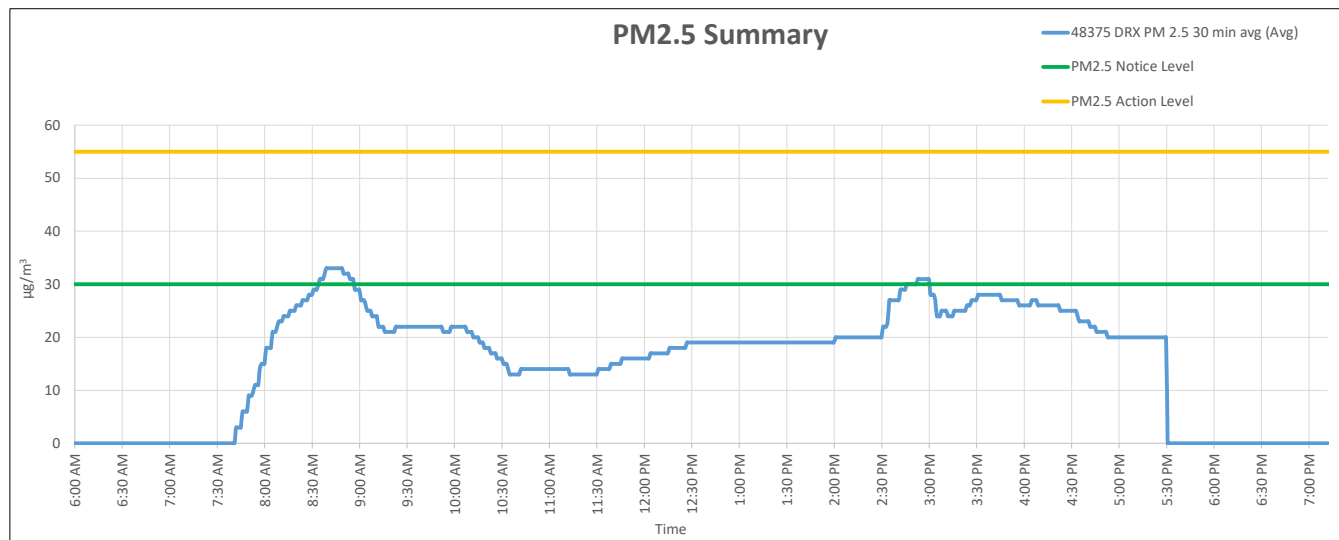
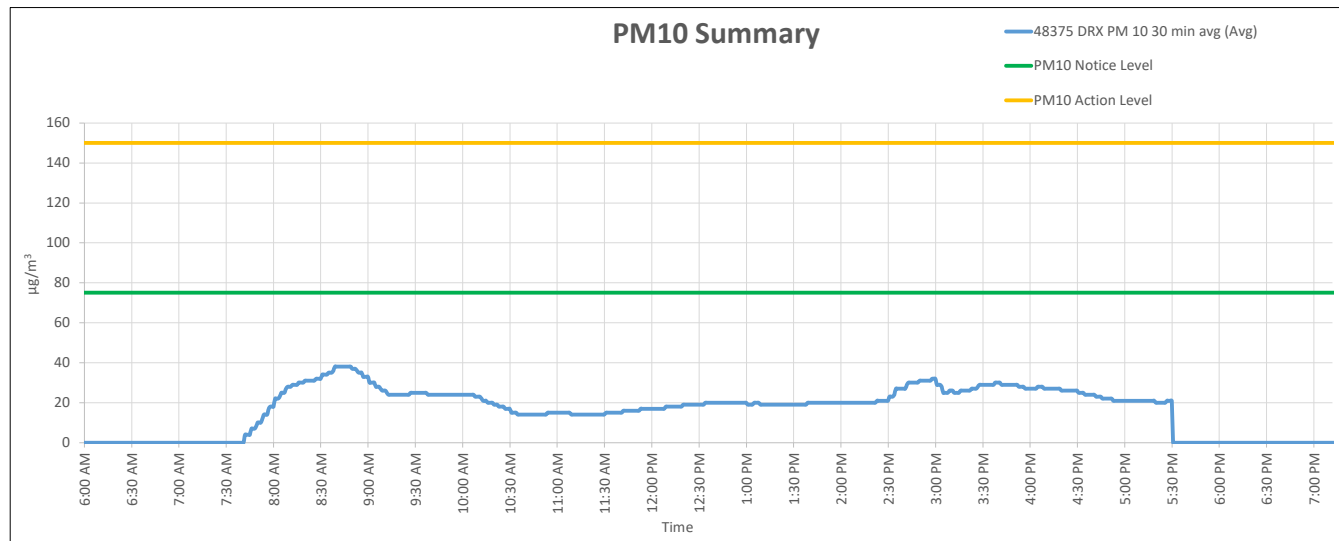
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Wednesday, September 18, 2024

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	7:08 AM	6:12 PM	17.63	26.00	16.74	24.00



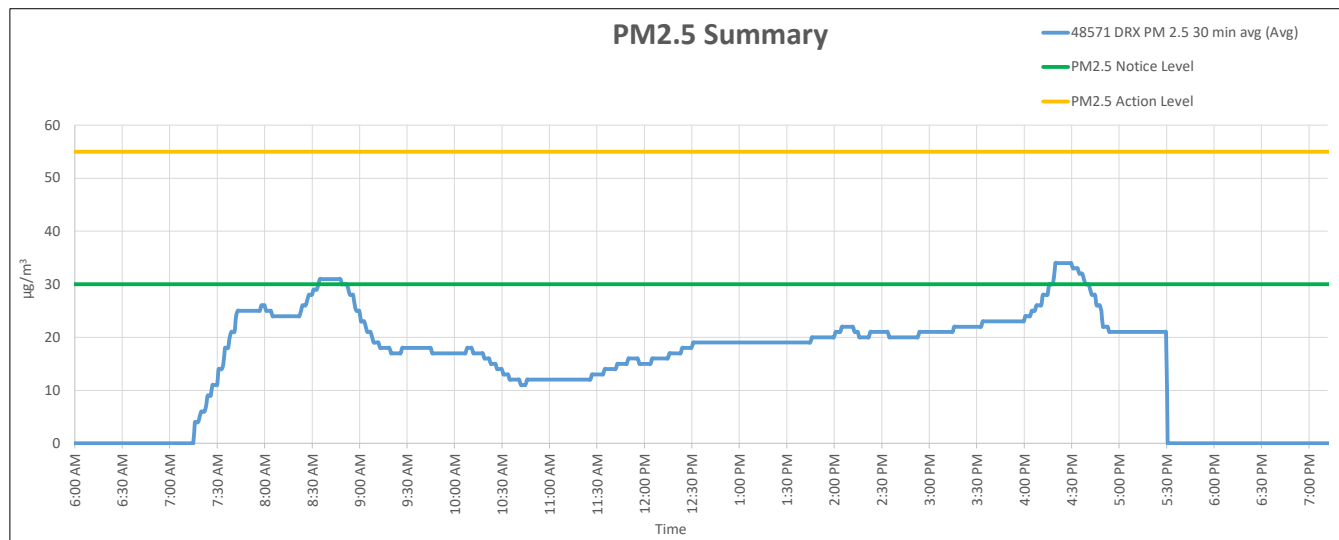
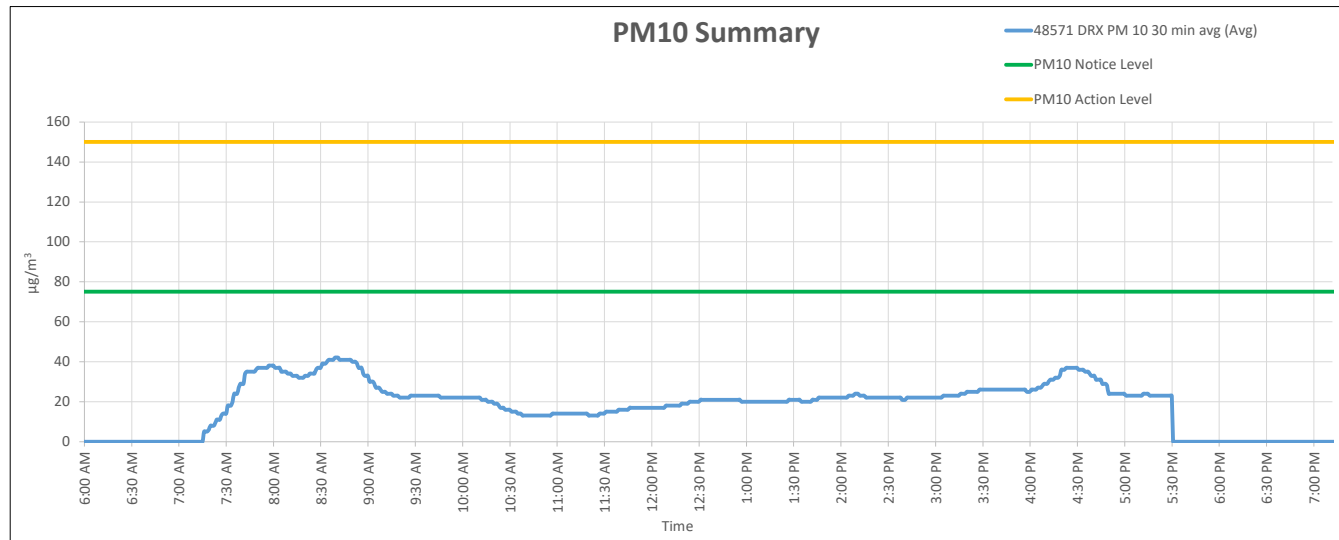
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Wednesday, September 18, 2024

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	7:42 AM	5:30 PM	22.30	38.00	20.93	33.00



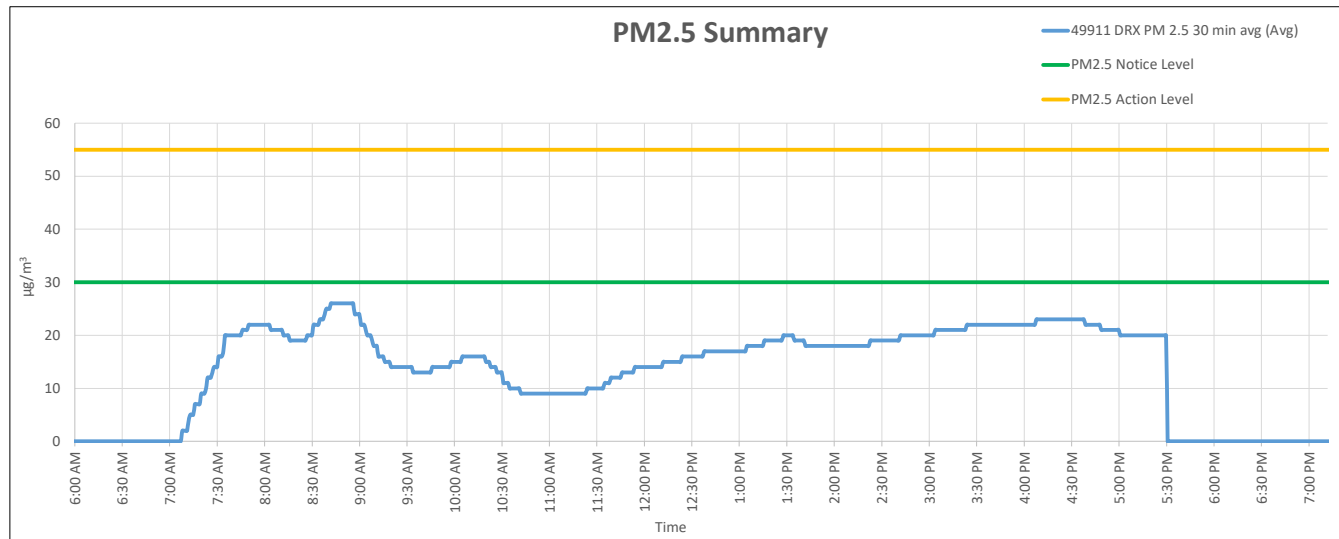
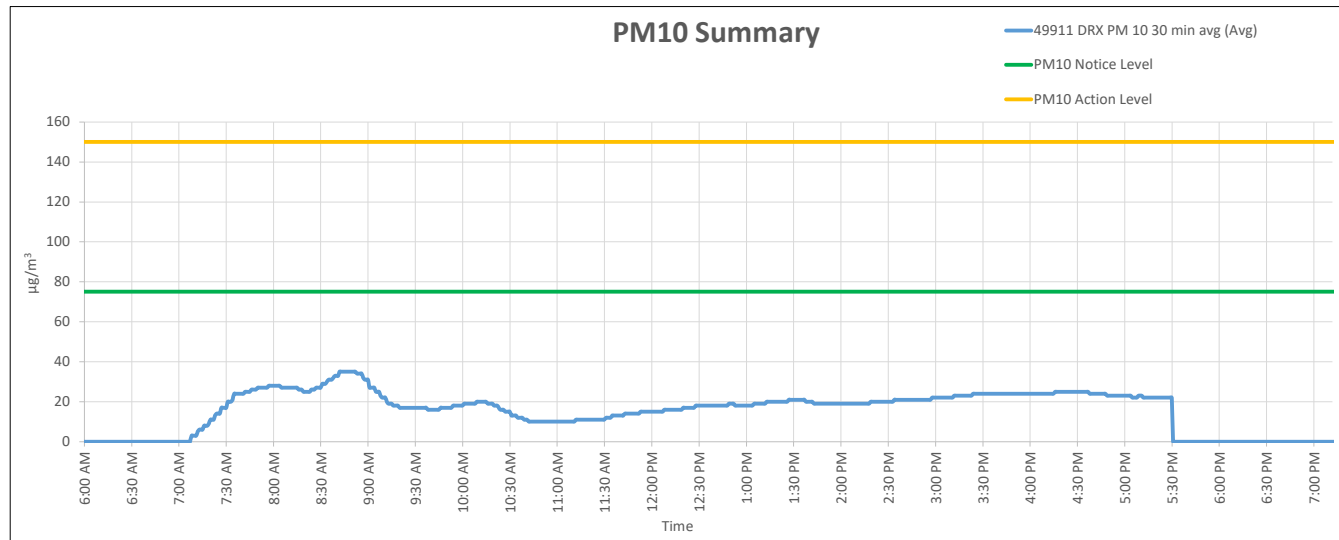
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Wednesday, September 18, 2024

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	7:16 AM	5:30 PM	23.40	42.00	19.95	34.00



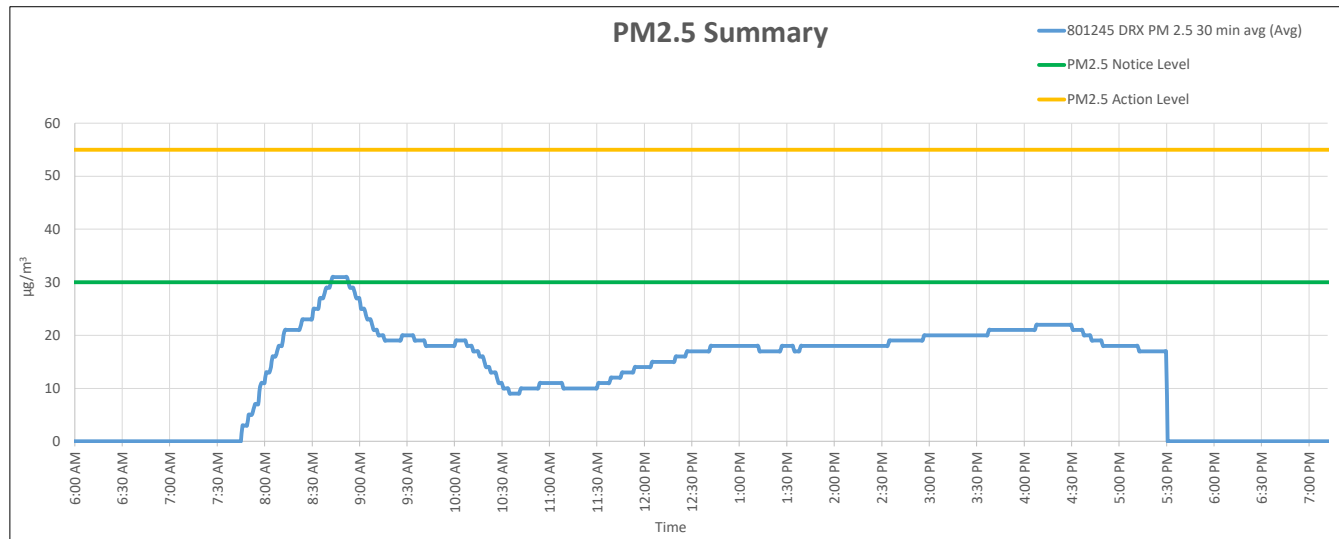
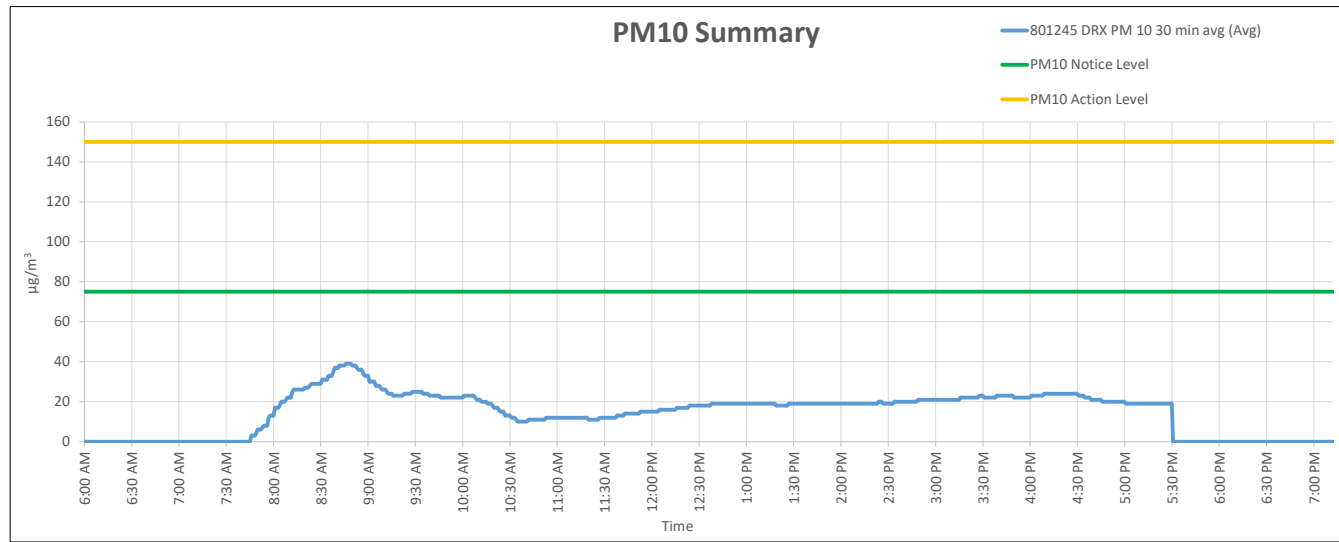
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
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Wednesday, September 18, 2024

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	7:08 AM	5:30 PM	19.94	35.00	17.43	26.00

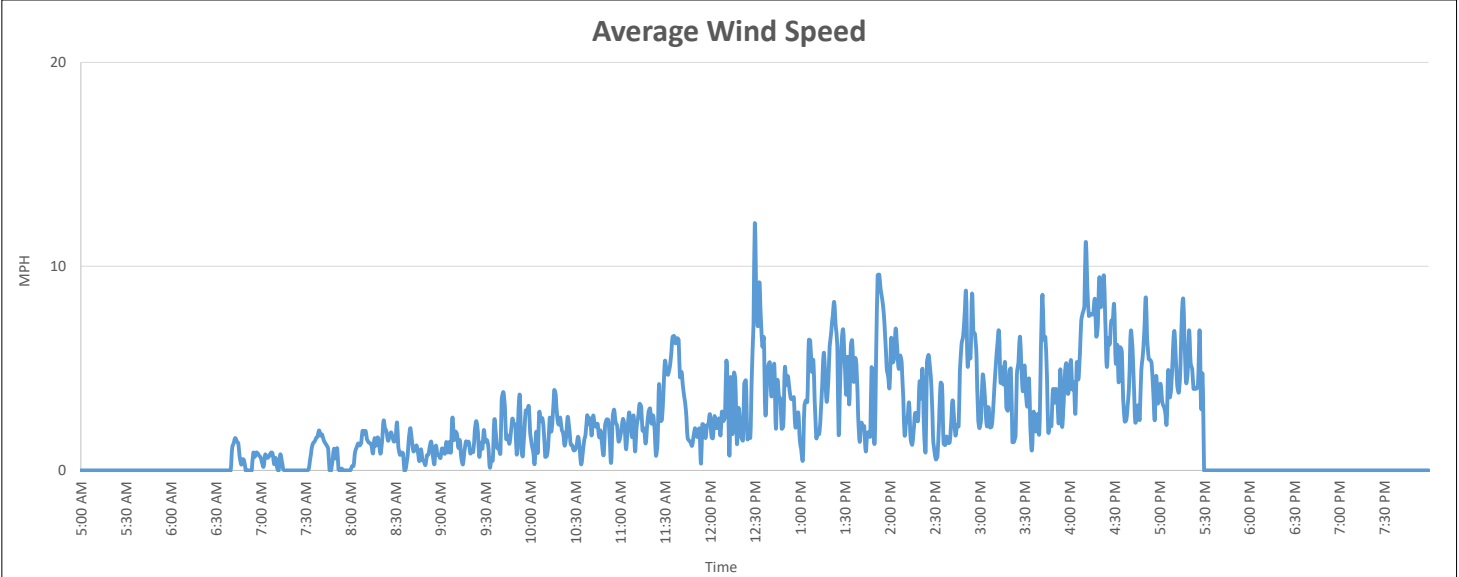
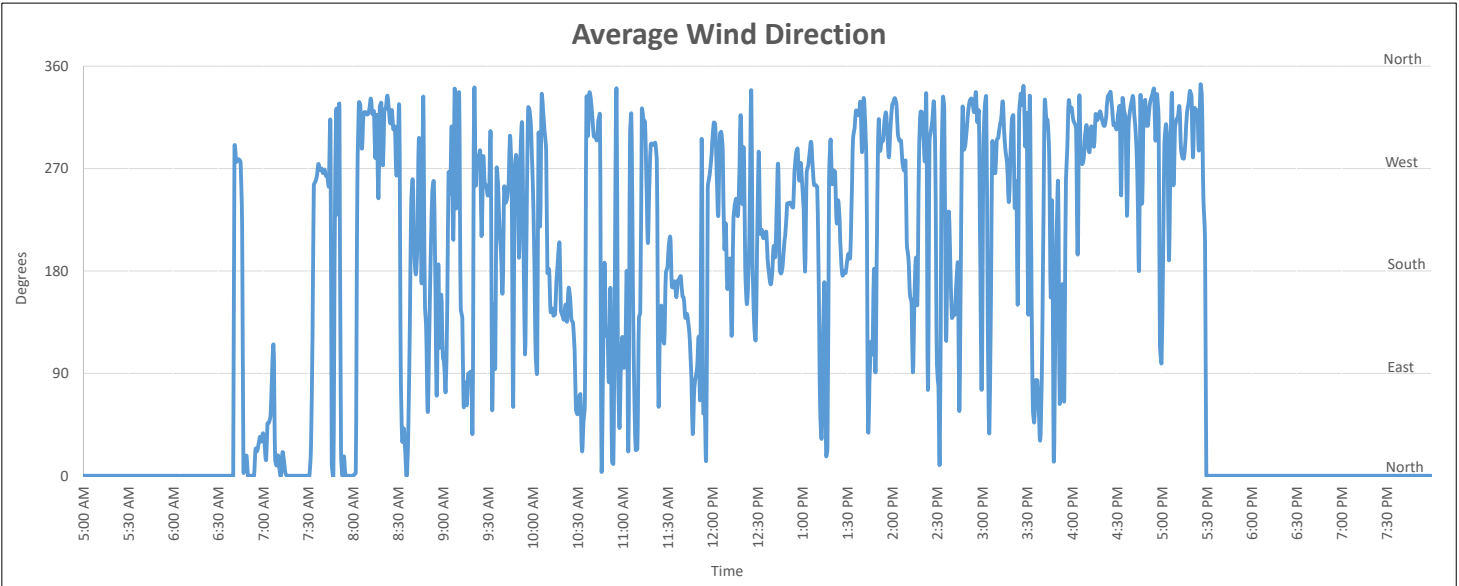


Union Pacific Railroad
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Wednesday, September 18, 2024

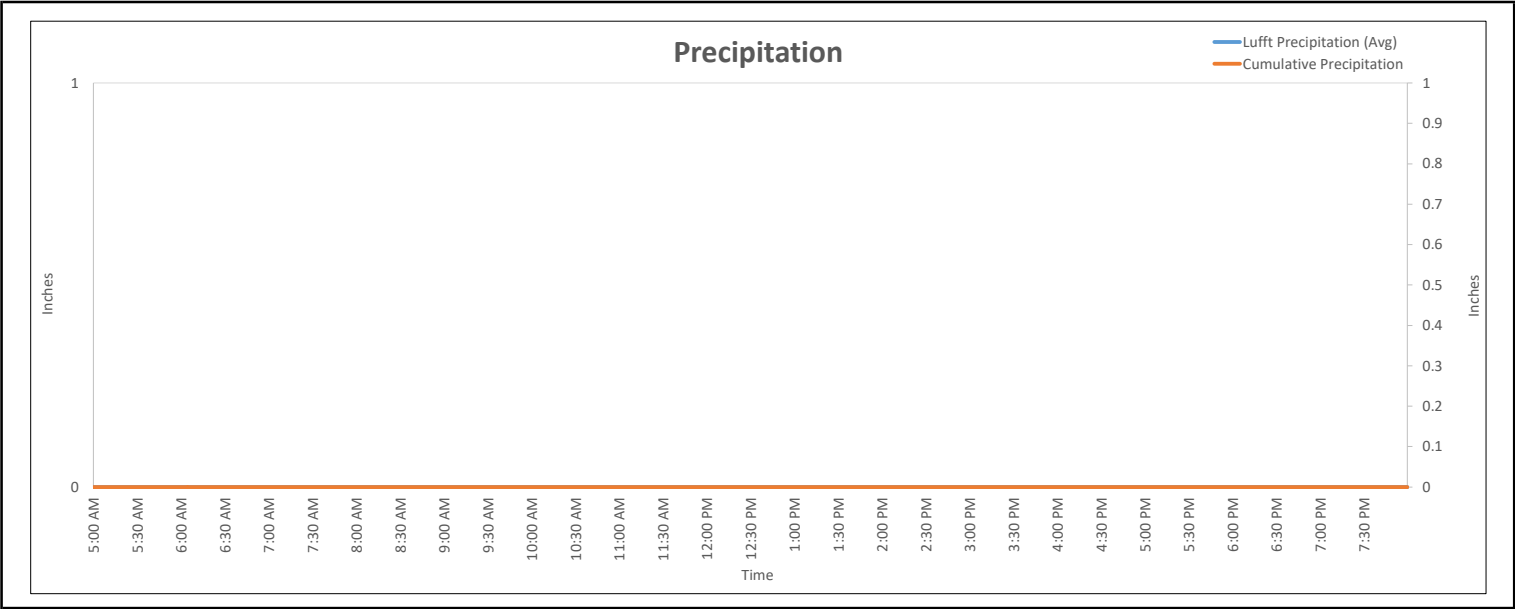
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:46 AM	5:30 PM	19.88	39.00	17.63	31.00



Union Pacific Railroad
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Thursday, September 19, 2024

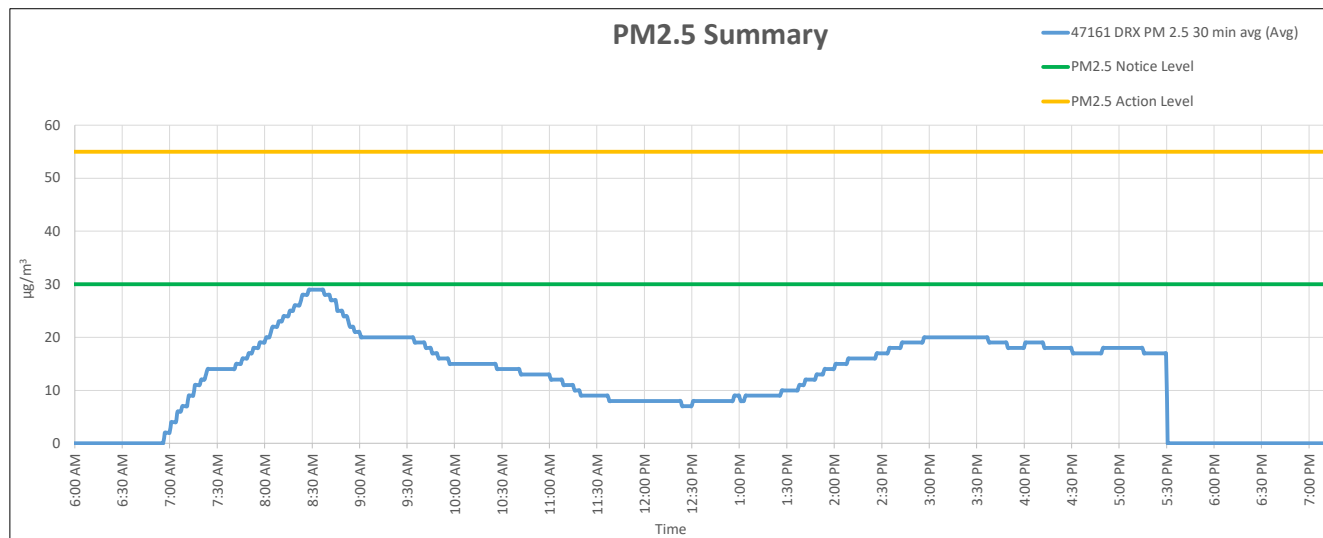
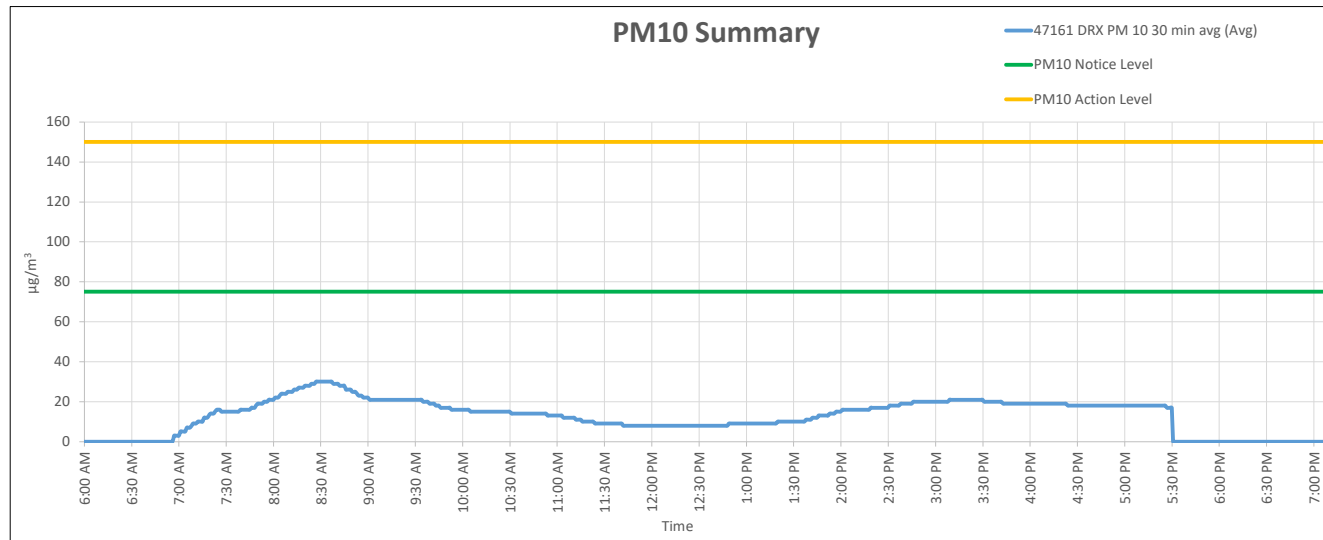


Union Pacific Railroad
Houston Wood Preserving Works Site
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Thursday, September 19, 2024



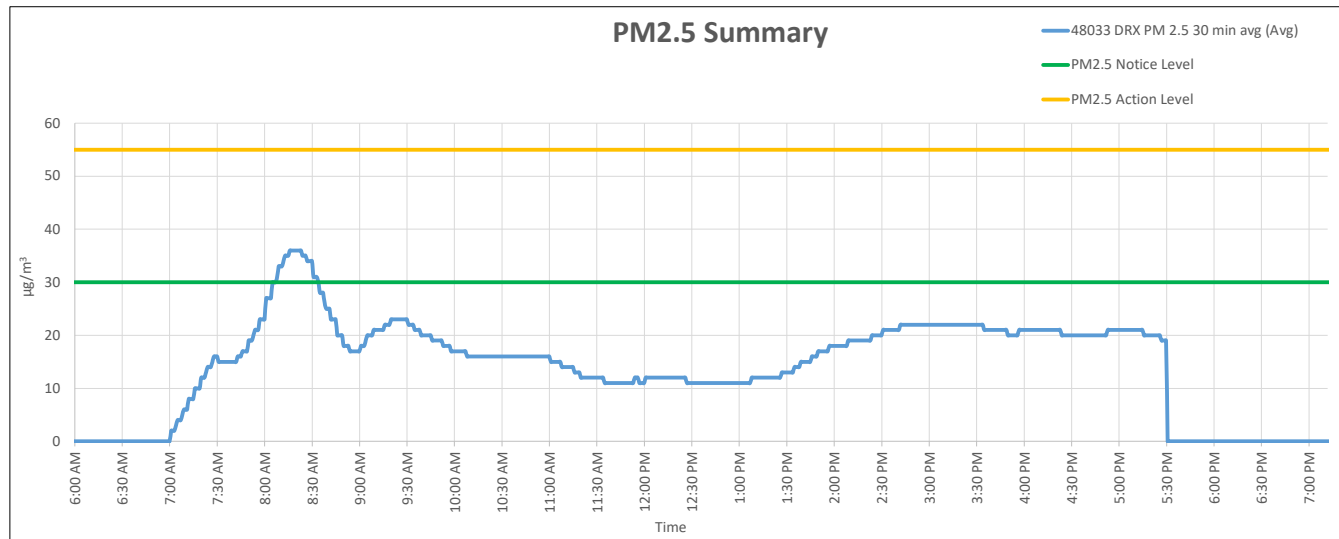
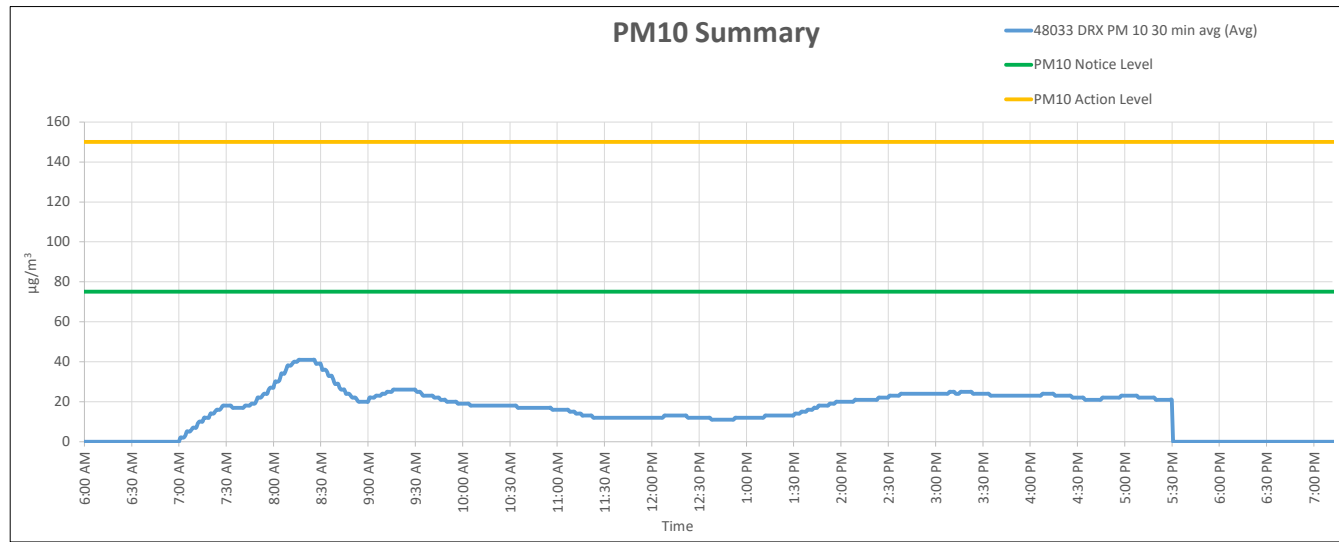
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	6:57 AM	5:30 PM	15.96	30.00	15.33	29.00



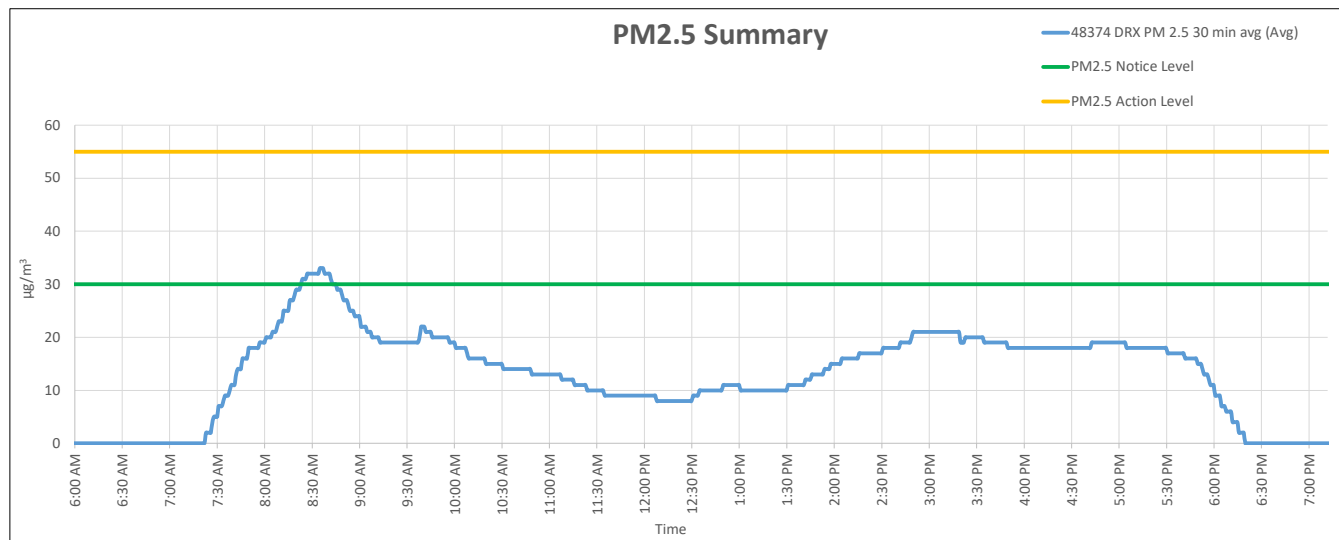
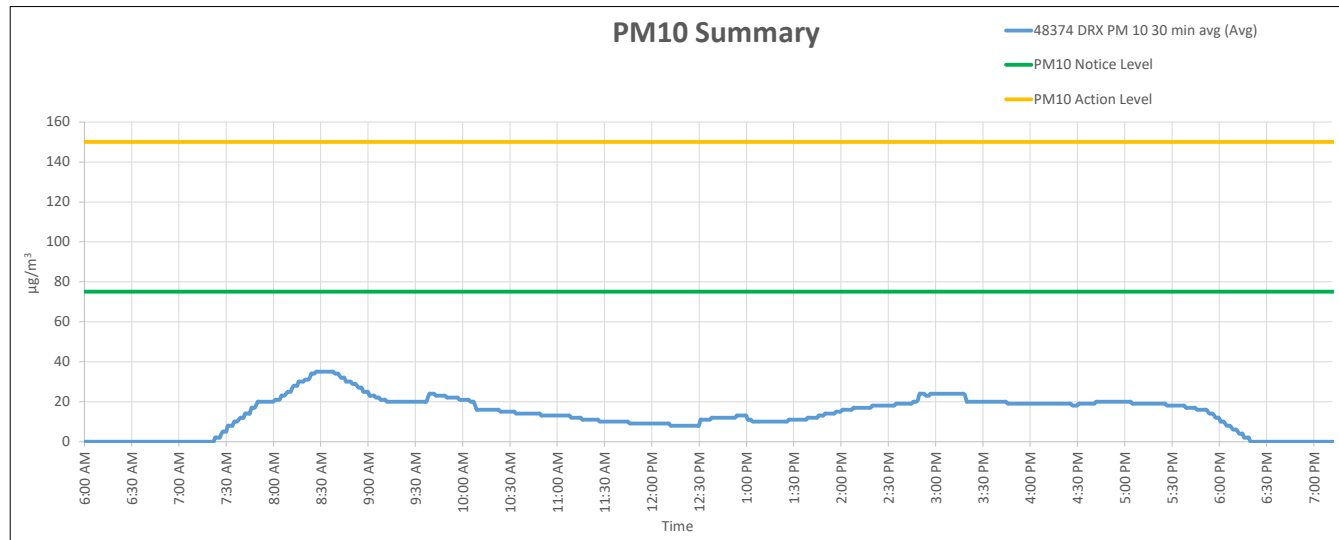
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	7:01 AM	5:30 PM	19.76	41.00	17.87	36.00



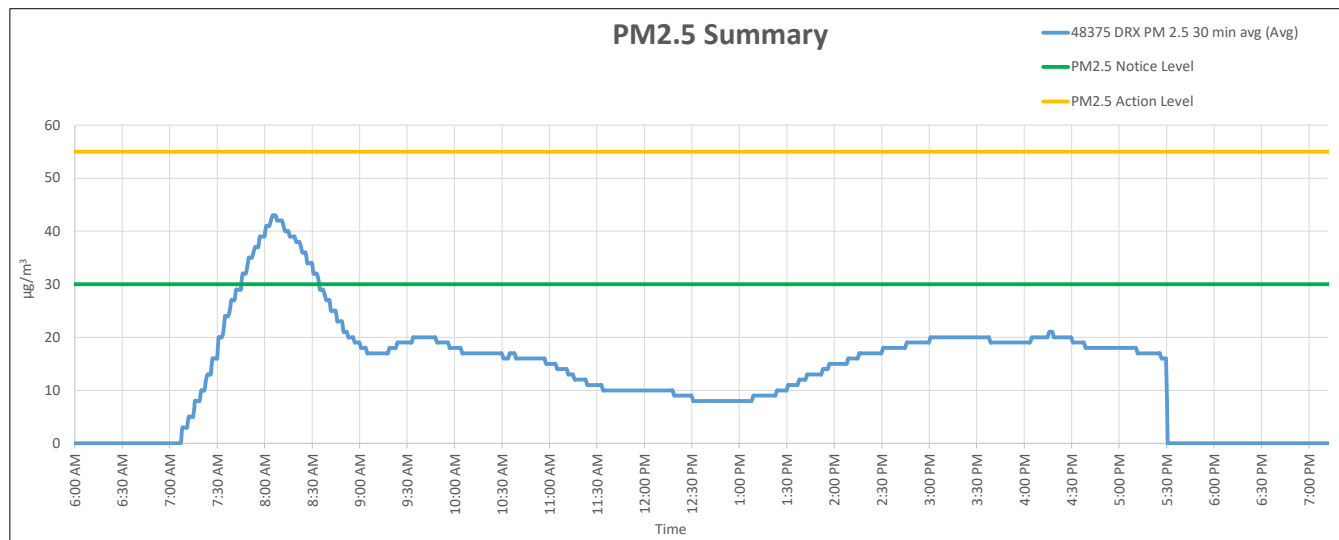
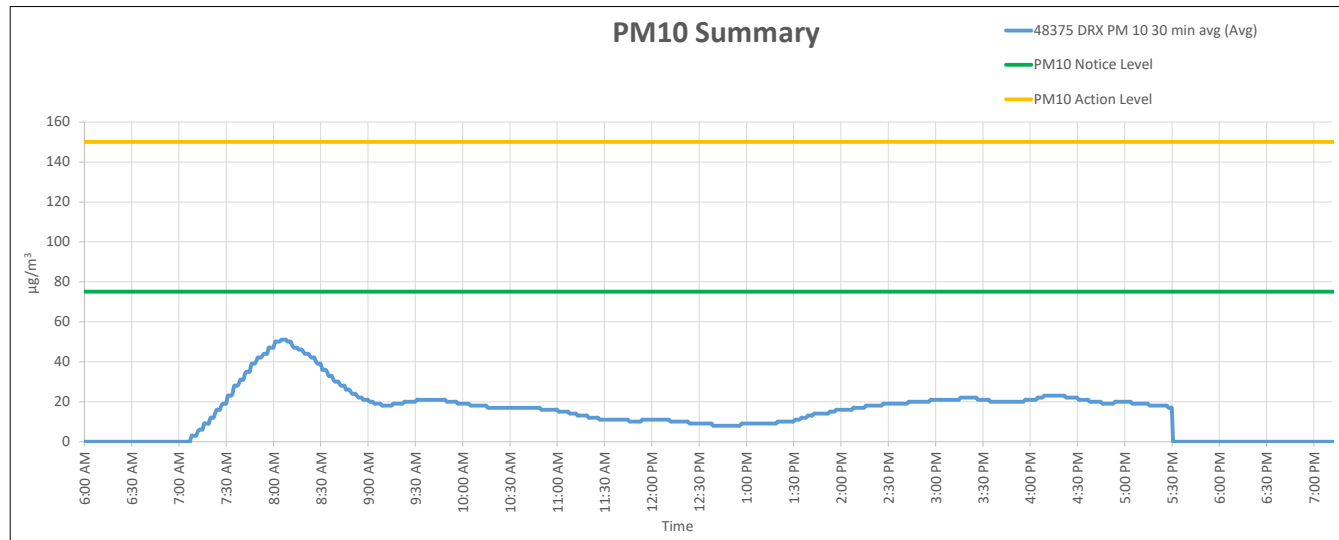
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	7:23 AM	6:19 PM	16.91	35.00	15.96	33.00



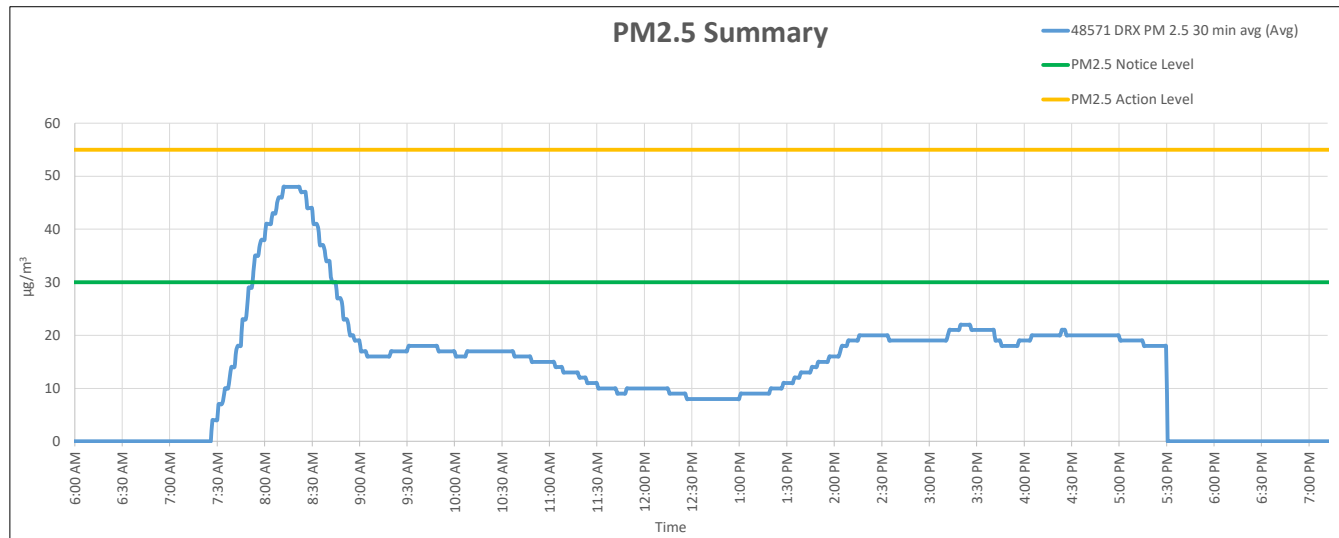
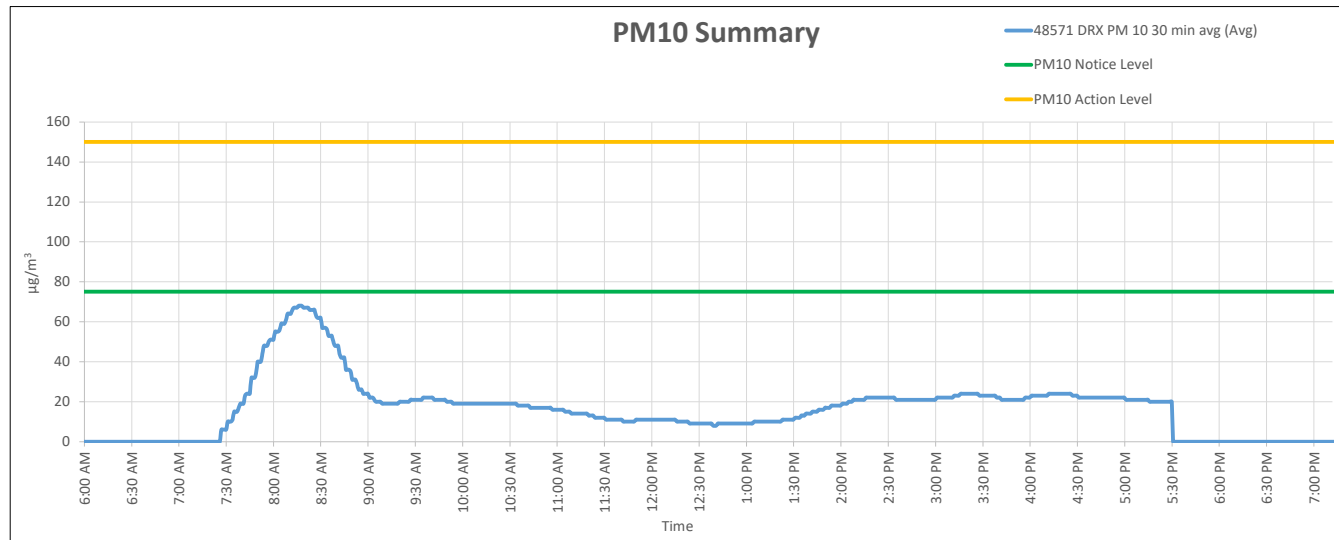
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	7:08 AM	5:30 PM	19.10	51.00	17.48	43.00



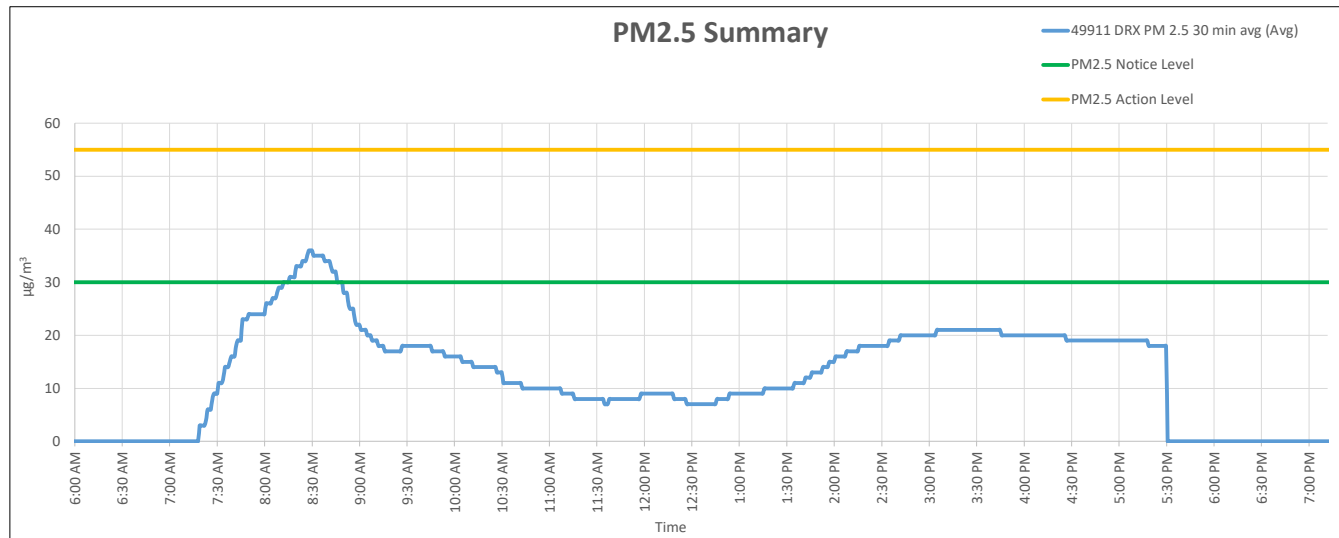
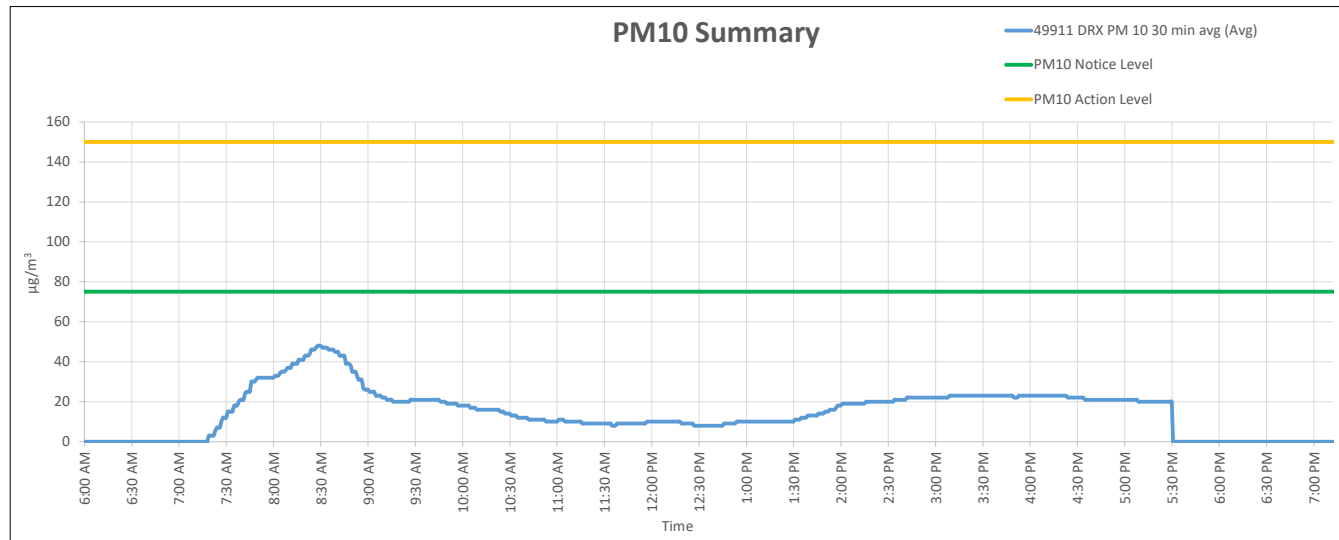
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	5:30 PM	21.51	68.00	18.03	48.00



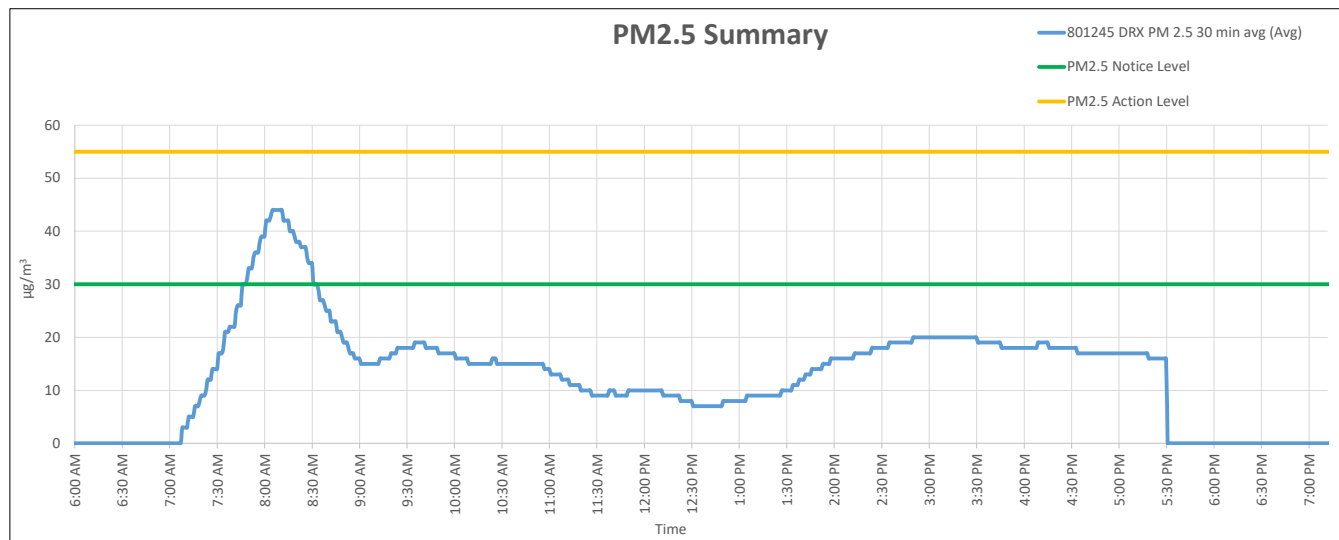
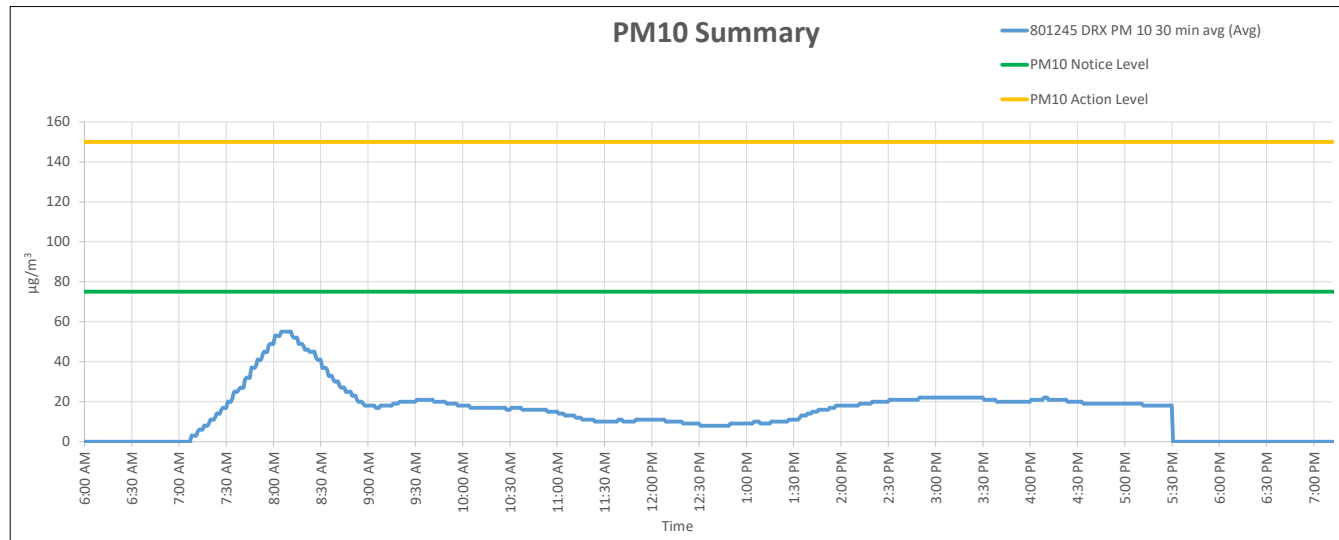
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 19, 2024

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	7:19 AM	5:30 PM	19.03	48.00	16.34	36.00

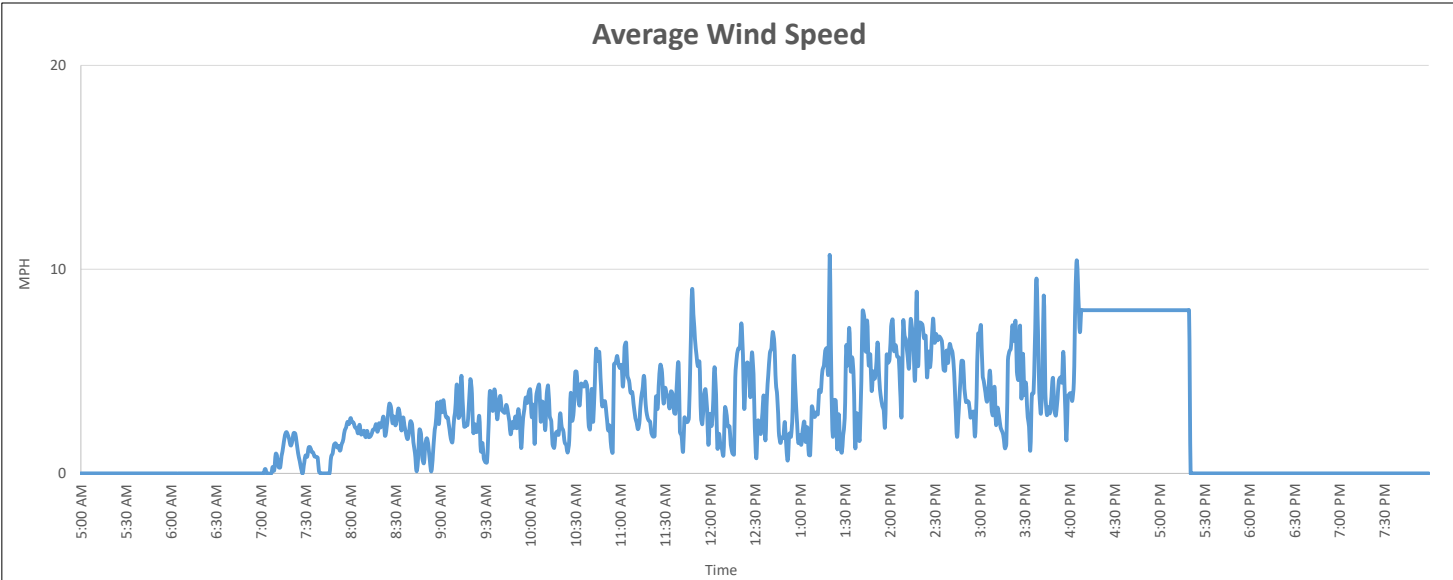
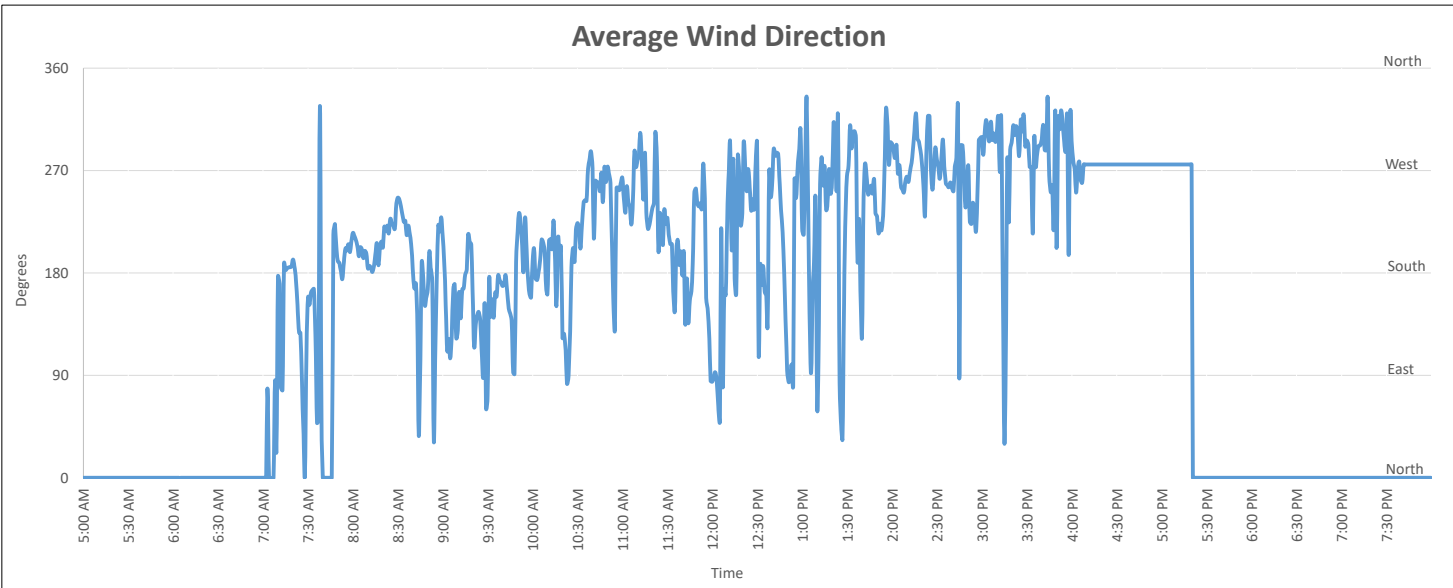


Union Pacific Railroad
Houston Wood Preserving Works Site
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Air Monitoring Values
Thursday, September 19, 2024

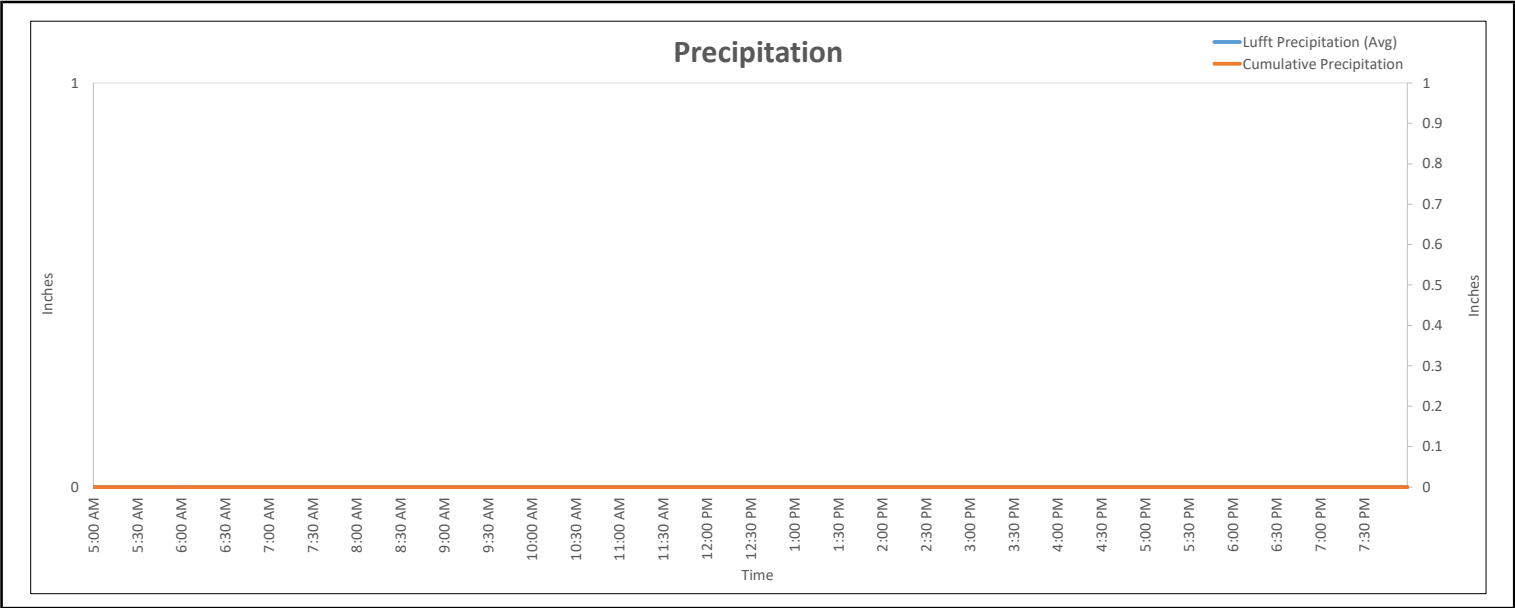
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:08 AM	5:30 PM	19.07	55.00	16.70	44.00



Union Pacific Railroad
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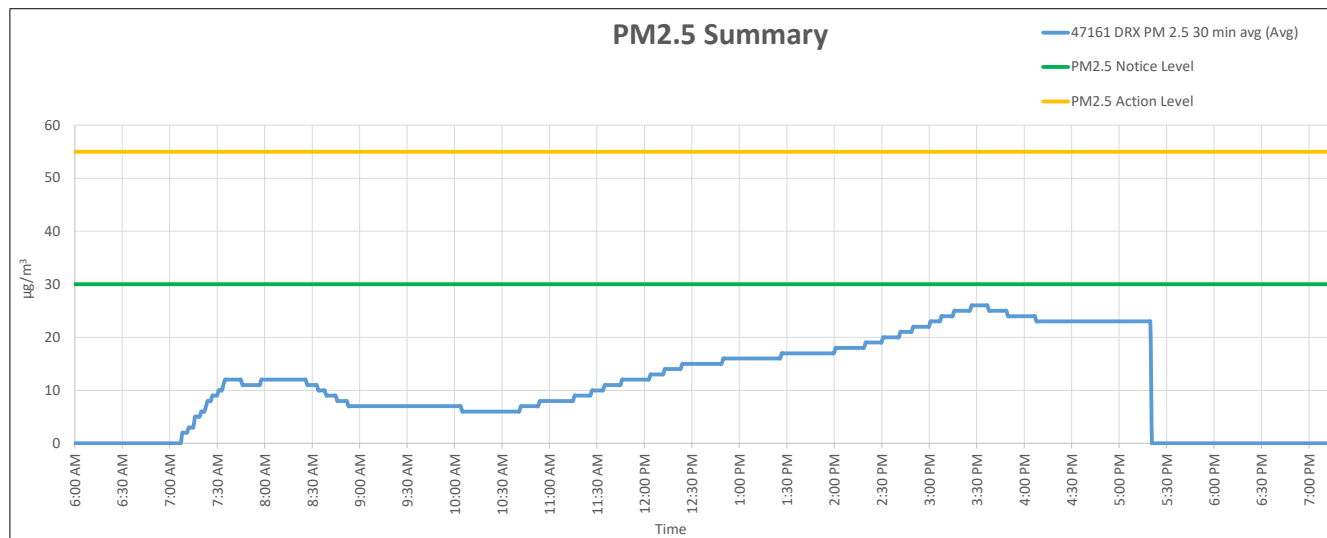
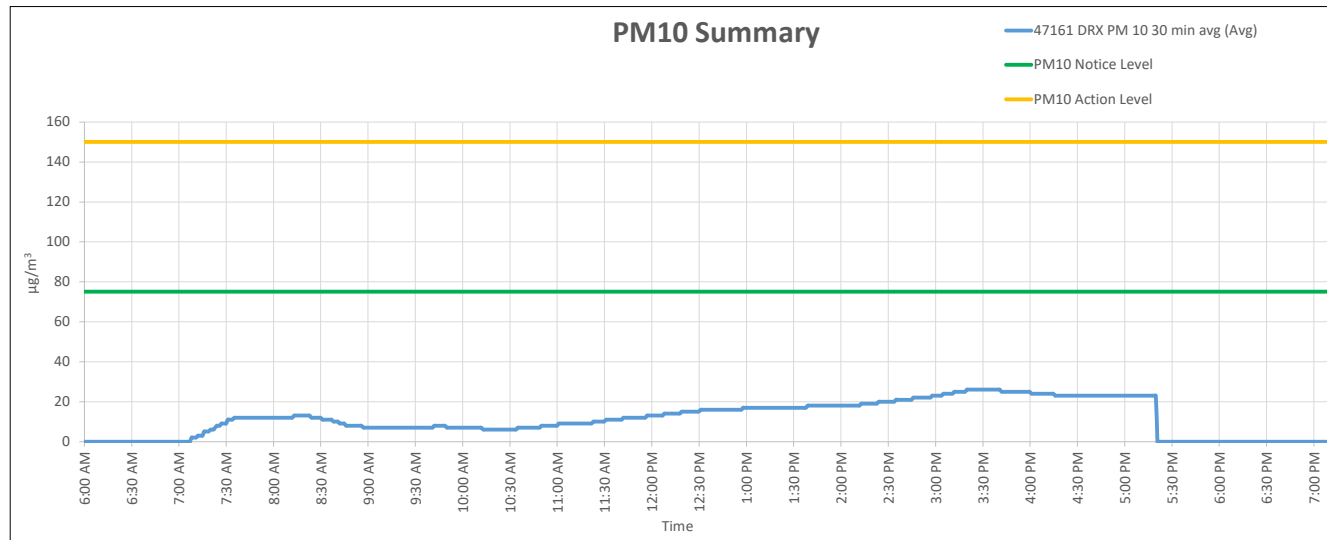


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Friday, September 20, 2024



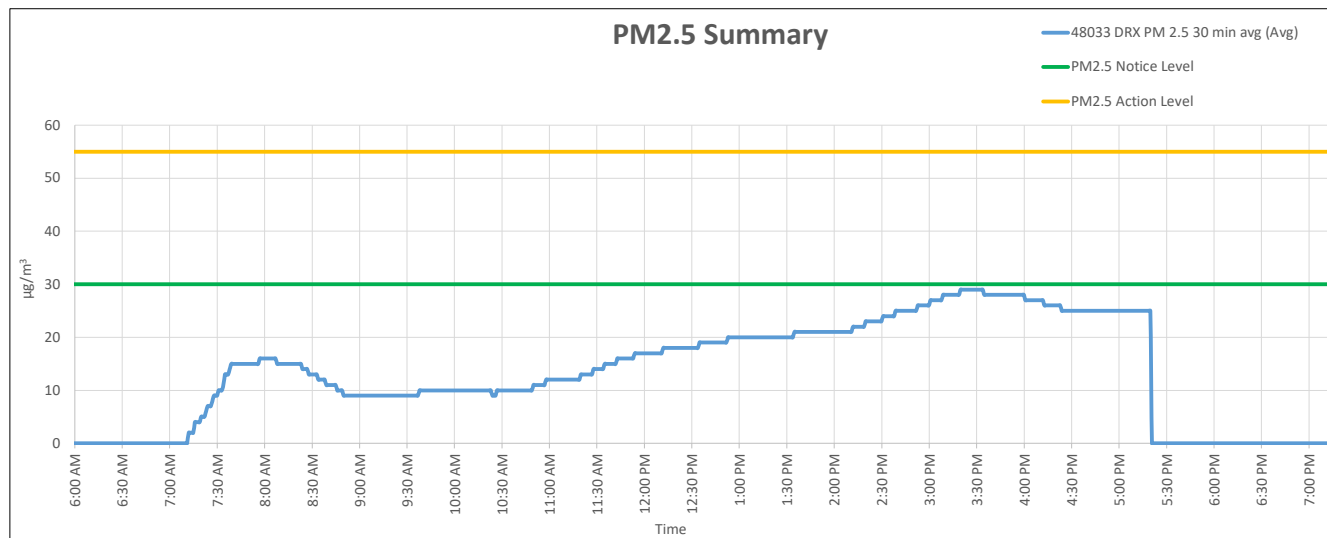
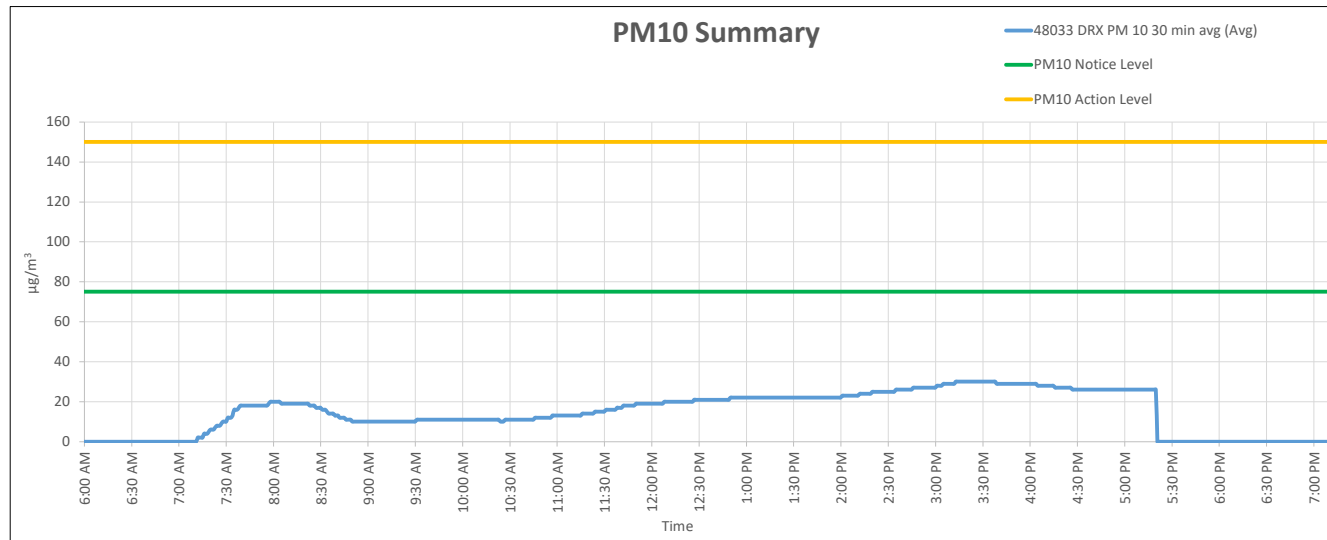
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 20, 2024

Monitor Number	Start	Stop	Daily PM ₁₀ Average (µg/m ³)	Daily PM ₁₀ Maximum (µg/m ³)	Daily PM _{2.5} Average (µg/m ³)	Daily PM _{2.5} Maximum (µg/m ³)
47161	7:08 AM	5:20 PM	14.86	26.00	14.46	26.00



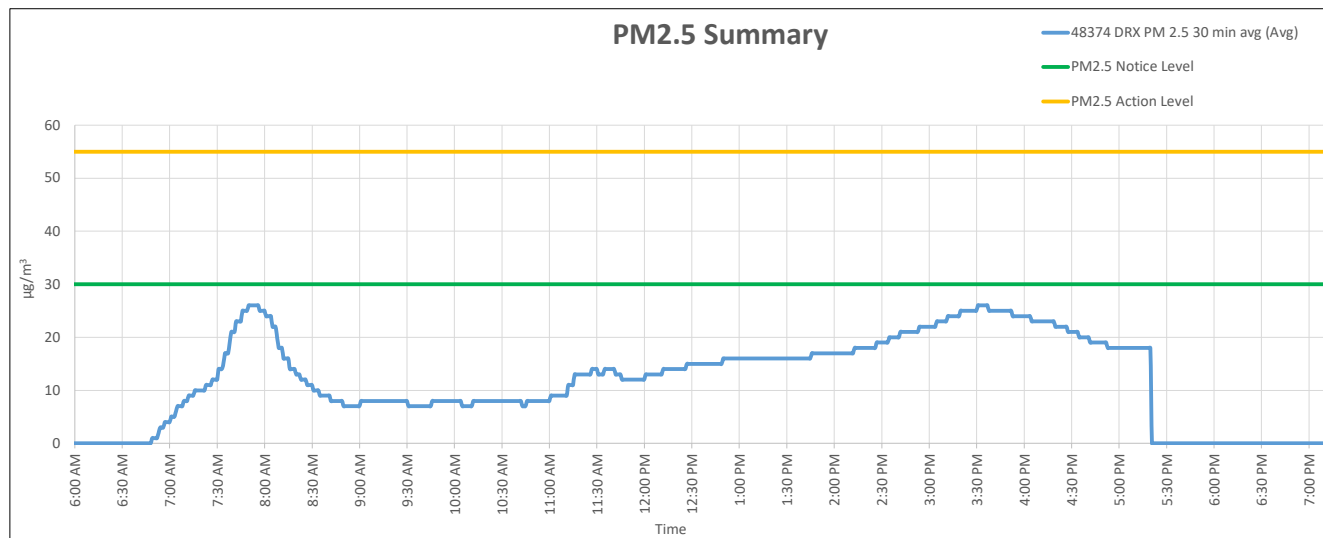
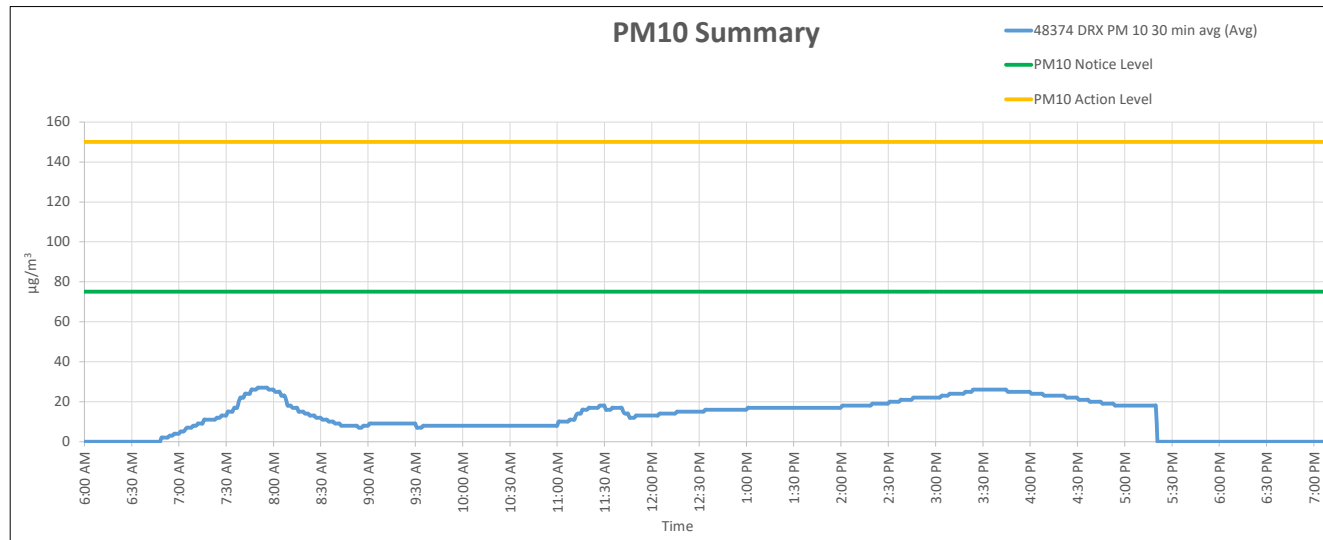
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 20, 2024

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	7:12 AM	5:20 PM	19.31	30.00	17.69	29.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 20, 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	6:49 AM	5:20 PM	15.62	27.00	14.94	26.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 20, 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	6:57 AM	5:20 PM	17.33	30.00	15.28	27.00

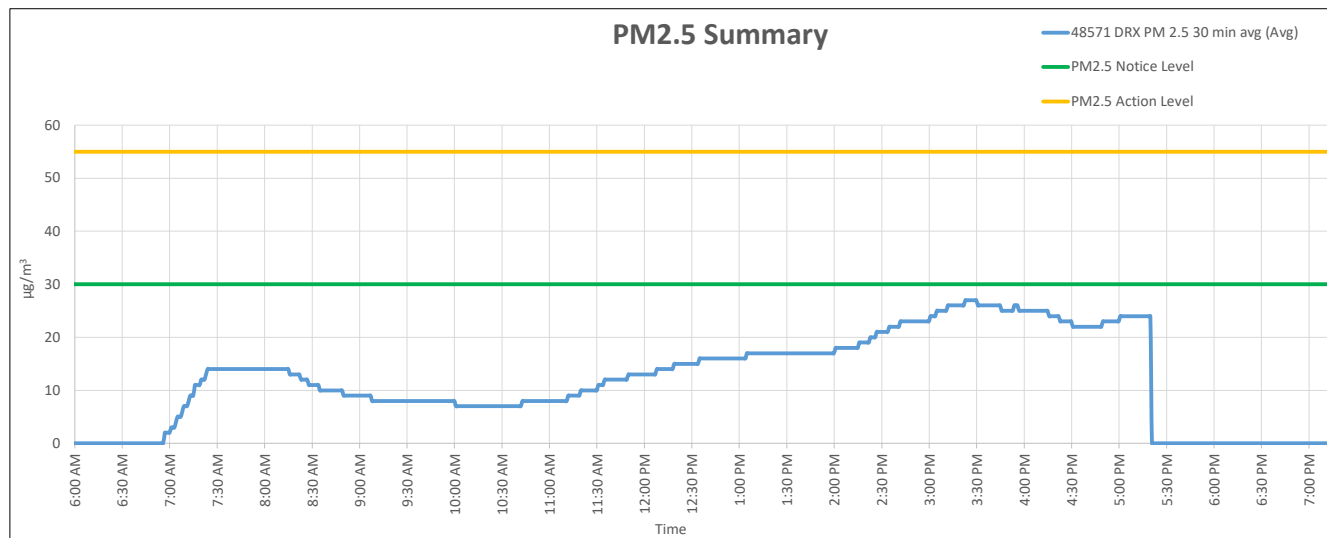
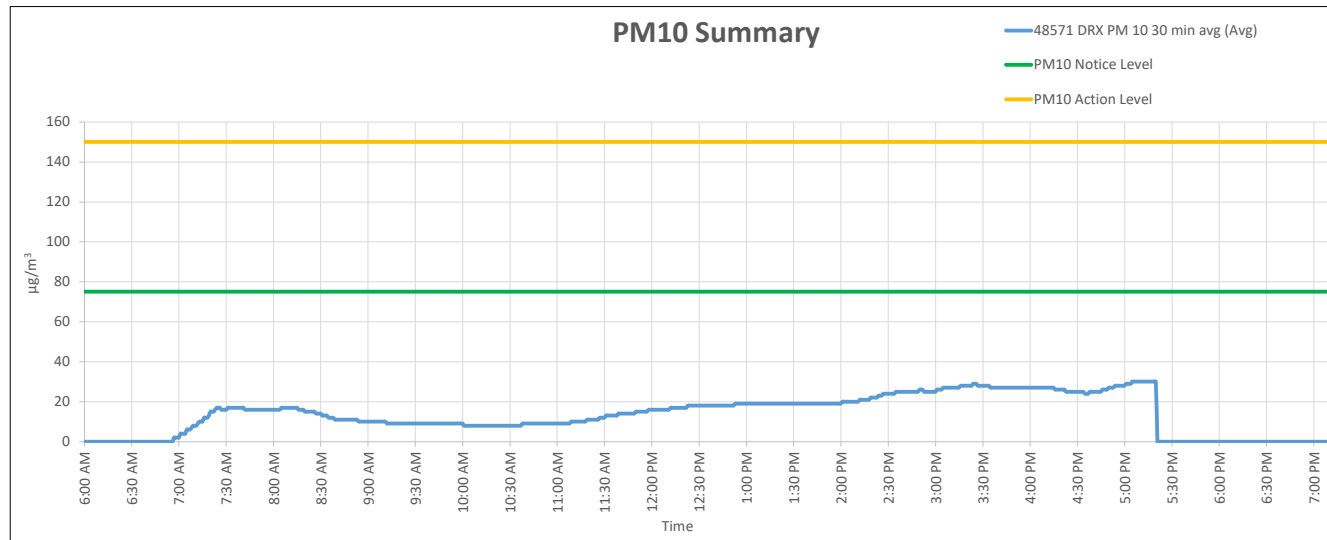
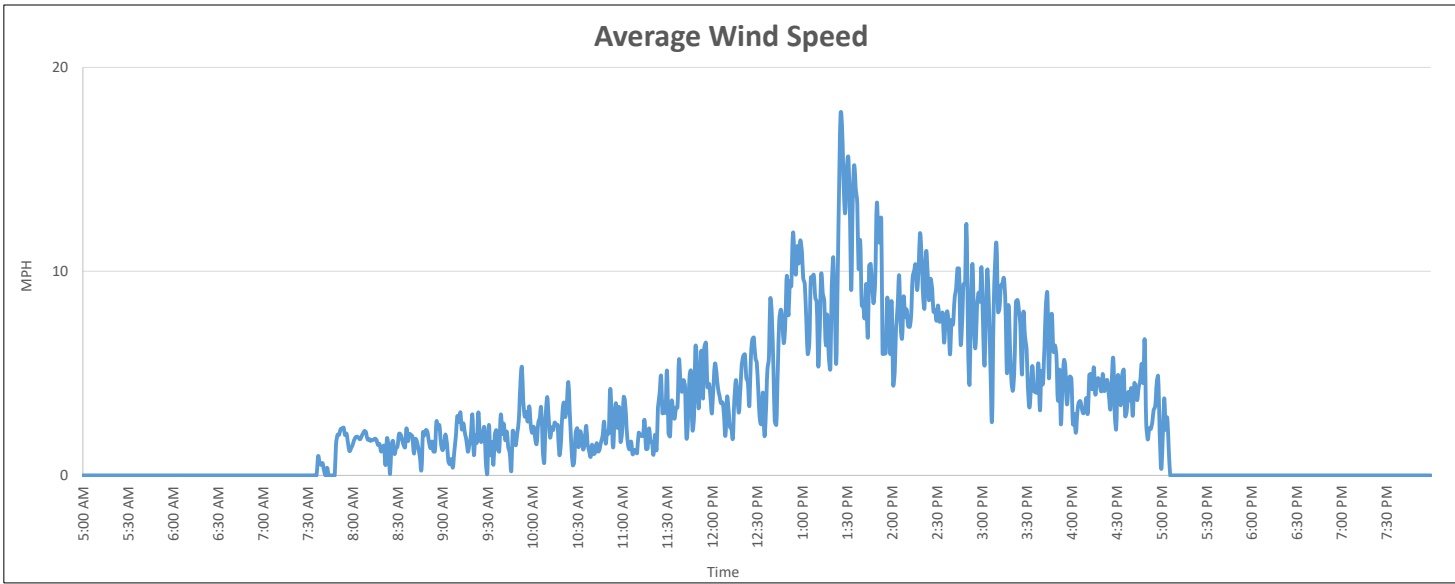
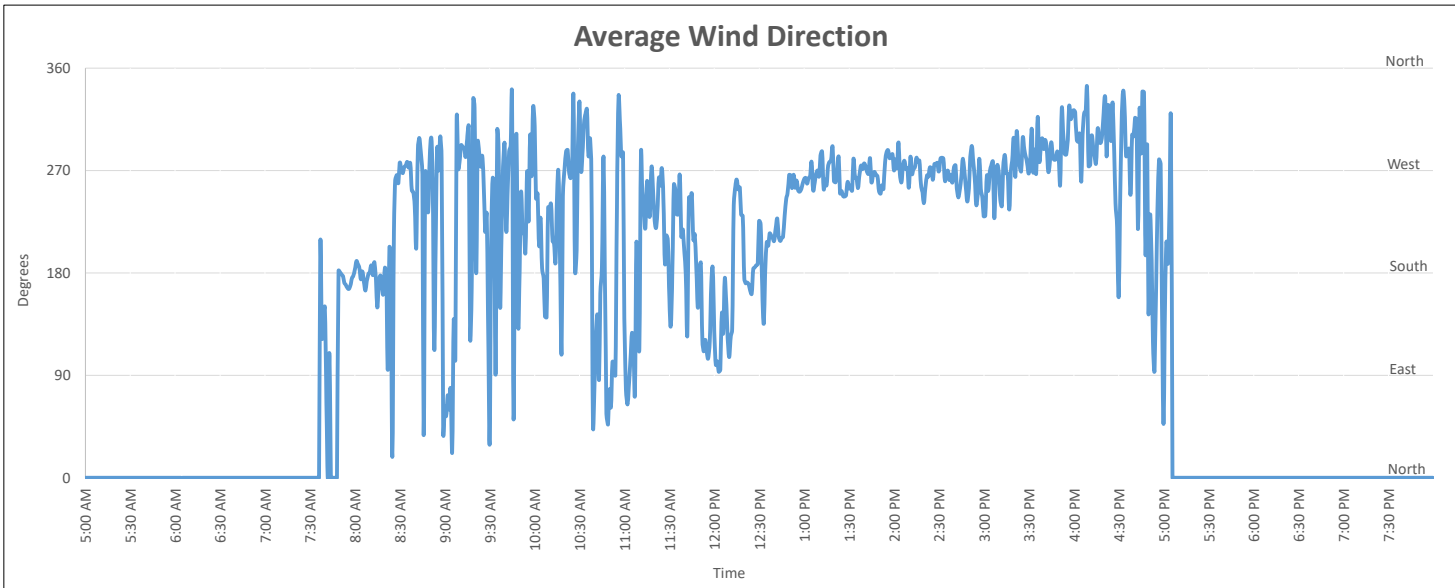
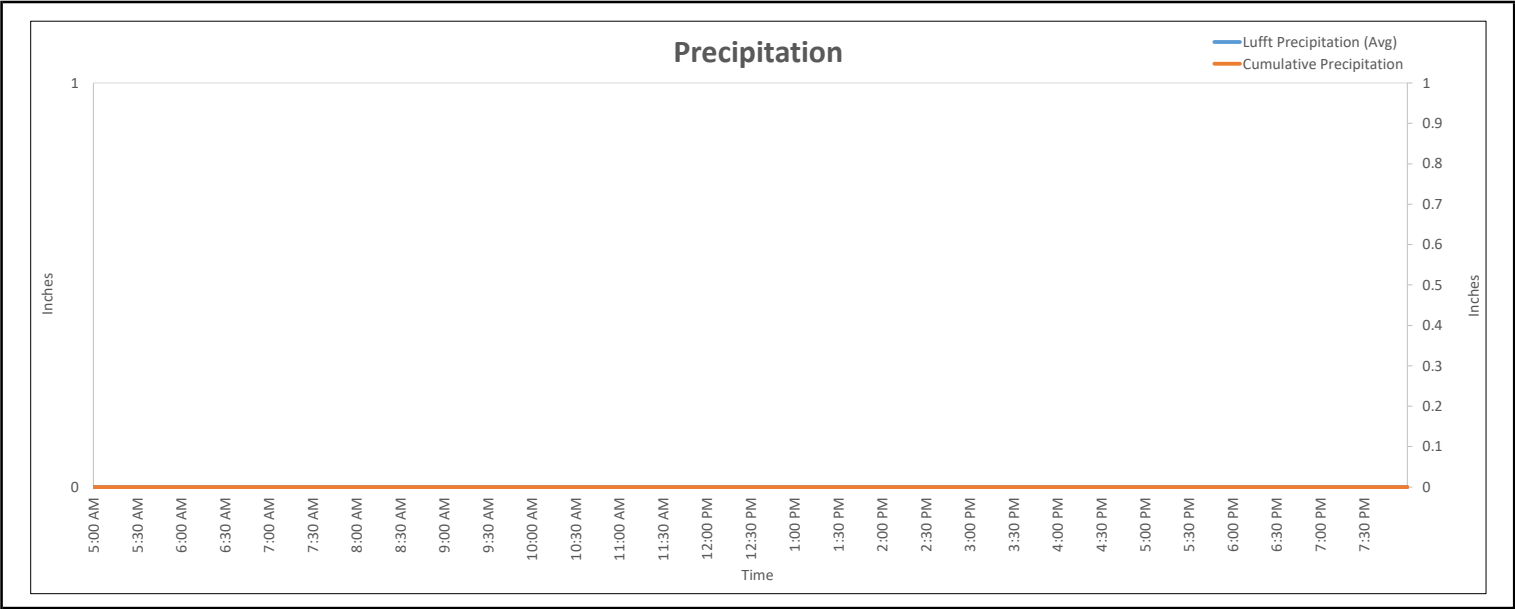


Table 4 – Direct Read Summary							
Union Pacific Houston Wood Preserving Works							
Houston, Texas							
Date	Modem #	PM ₁₀ Concentration (µg/m ³)			PM _{2.5} Concentration (µg/m ³)		
		Min	Max	Average	Min	Max	Average
Week 18							
9/23/2024	48374	2.000	25.000	16.961	1.000	24.000	15.779
	47161	2.000	26.000	16.078	2.000	25.000	15.527
	48033	2.000	30.000	21.215	2.000	26.000	19.606
	48571	2.000	44.000	21.348	2.000	34.000	18.372
	48375	2.000	40.000	21.482	2.000	35.000	19.467
	801245	2.000	40.000	21.250	2.000	36.000	19.325
	49911	2.000	30.000	21.872	2.000	26.000	19.603
9/24/2024	48374	1.000	64.000	19.867	1.000	54.000	18.297
	47161	1.000	54.000	21.317	1.000	49.000	20.070
	48033	2.000	74.000	28.298	2.000	59.000	24.432
	48571	1.000	92.000	26.926	1.000	61.000	21.809
	48375	2.000	85.000	27.174	1.000	69.000	24.031
	801245	1.000	83.000	27.528	1.000	67.000	23.880
	49911	2.000	94.000	27.236	2.000	66.000	23.359
9/25/2024	48374	1.000	14.000	10.504	1.000	14.000	10.366
	47161	1.000	19.000	12.525	1.000	18.000	12.146
	48033	2.000	22.000	16.372	2.000	20.000	15.127
	48571	1.000	22.000	13.321	1.000	20.000	12.249
	48375	1.000	31.000	18.030	1.000	25.000	16.579
	801245	1.000	23.000	14.377	1.000	20.000	12.929
	49911	1.000	20.000	12.336	1.000	17.000	11.126
9/26/2024	48374	2.00	22.00	10.86	2.00	22.00	10.69
	47161	2.00	25.00	13.14	2.00	24.00	12.52
	48033	2.00	39.00	18.41	2.00	32.00	15.76
	48571	2.00	25.00	15.09	2.00	24.00	13.40
	48375	3.00	26.00	17.48	2.00	25.00	16.04
	801245	2.00	48.00	17.36	2.00	30.00	14.83
	49911	2.00	26.00	16.03	2.00	25.00	14.26
9/27/2024	48374	3.00	29.00	11.62	3.00	27.00	11.11
	47161	4.00	32.00	13.08	4.00	30.00	12.33
	48033	4.00	38.00	20.10	4.00	32.00	17.17
	48571	4.00	41.00	15.36	4.00	34.00	12.83
	48375	6.00	51.00	17.03	5.00	41.00	15.15
	801245	9.00	57.00	17.89	8.00	47.00	15.40
	49911	3.00	54.00	19.18	2.00	48.00	15.81
Note:							
1. Values shown in GREEN are above the Notice Level Threshold.							
2. Values shown in ORANGE are above the Action Level Threshold.							
3. Values shown in RED are above the Stop-Work Level Threshold.							

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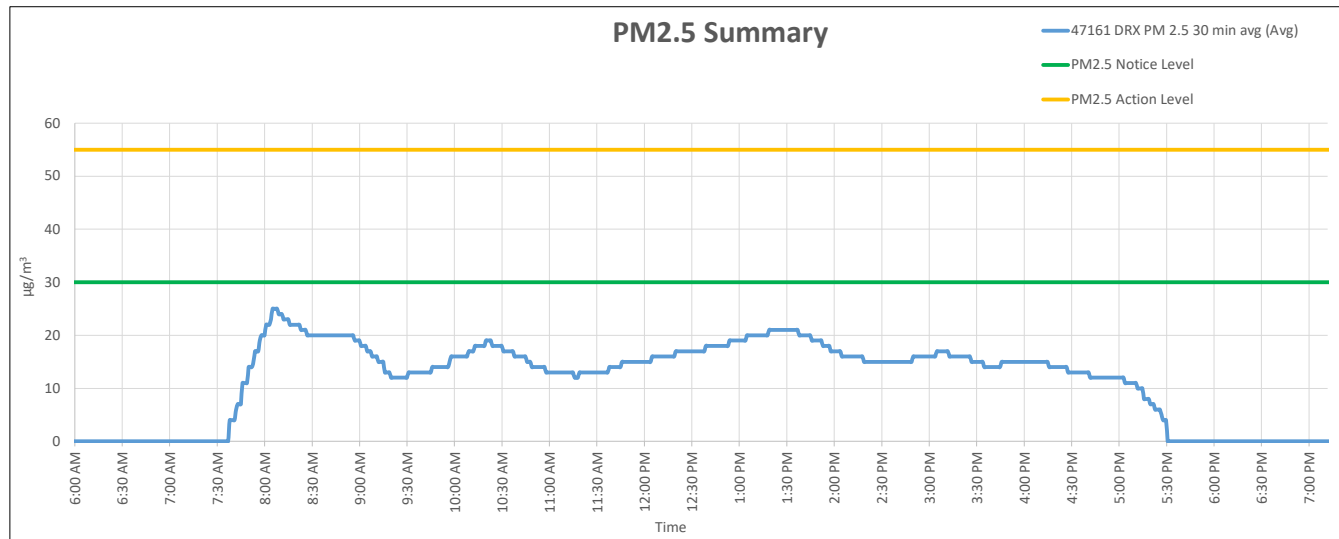
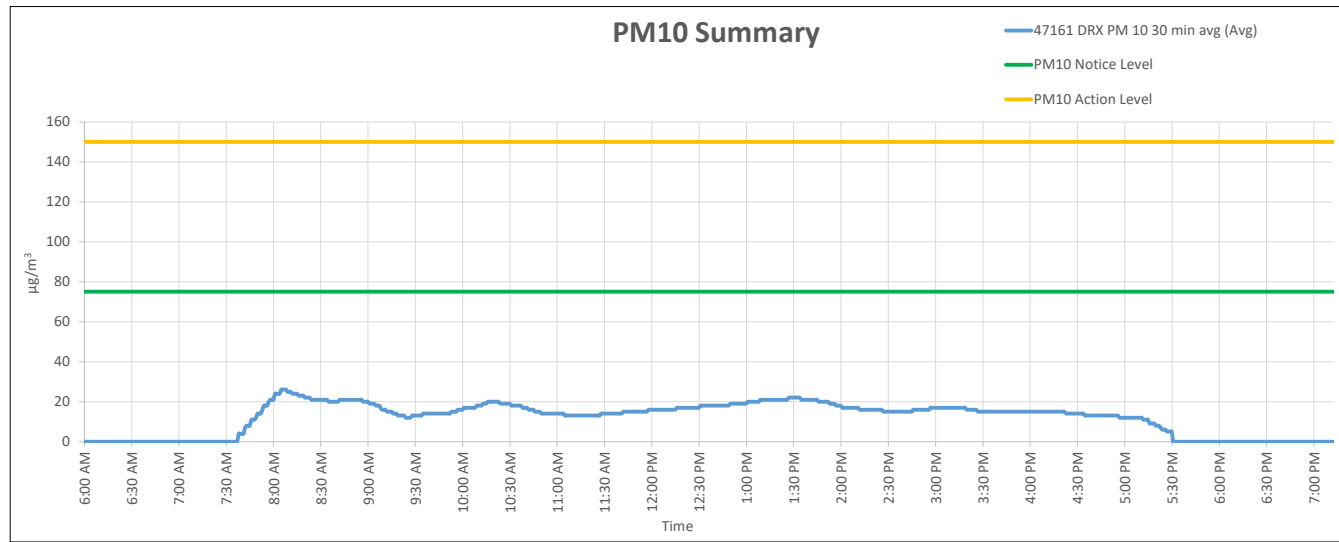


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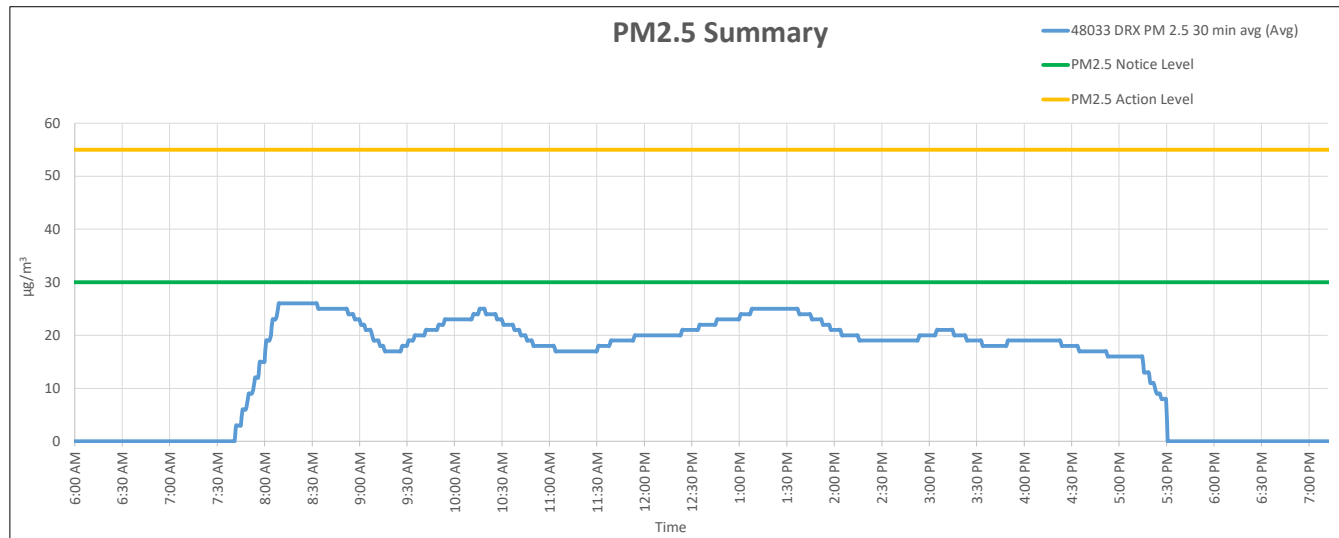
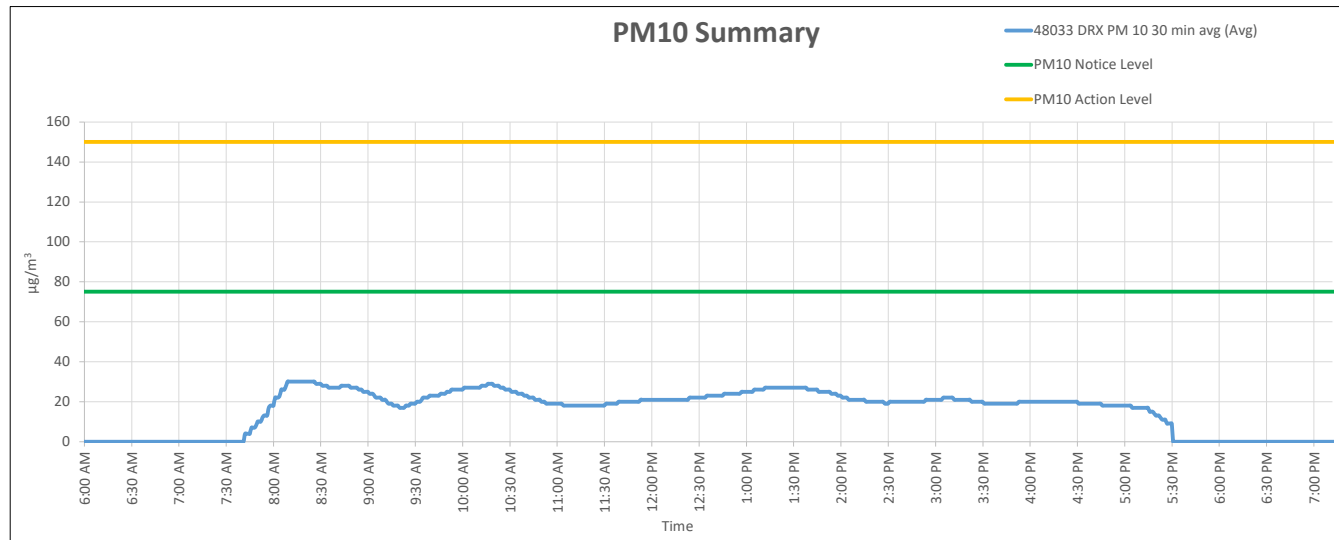
Union Pacific Railroad
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:38 AM	5:30 PM	16.26	26.00	15.70	25.00



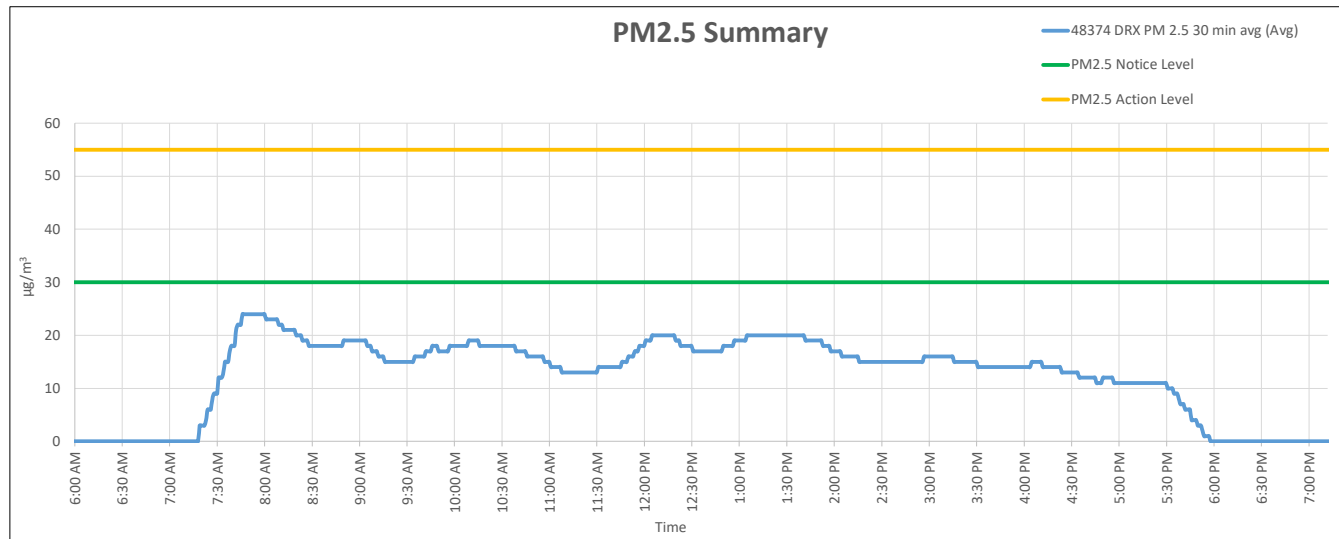
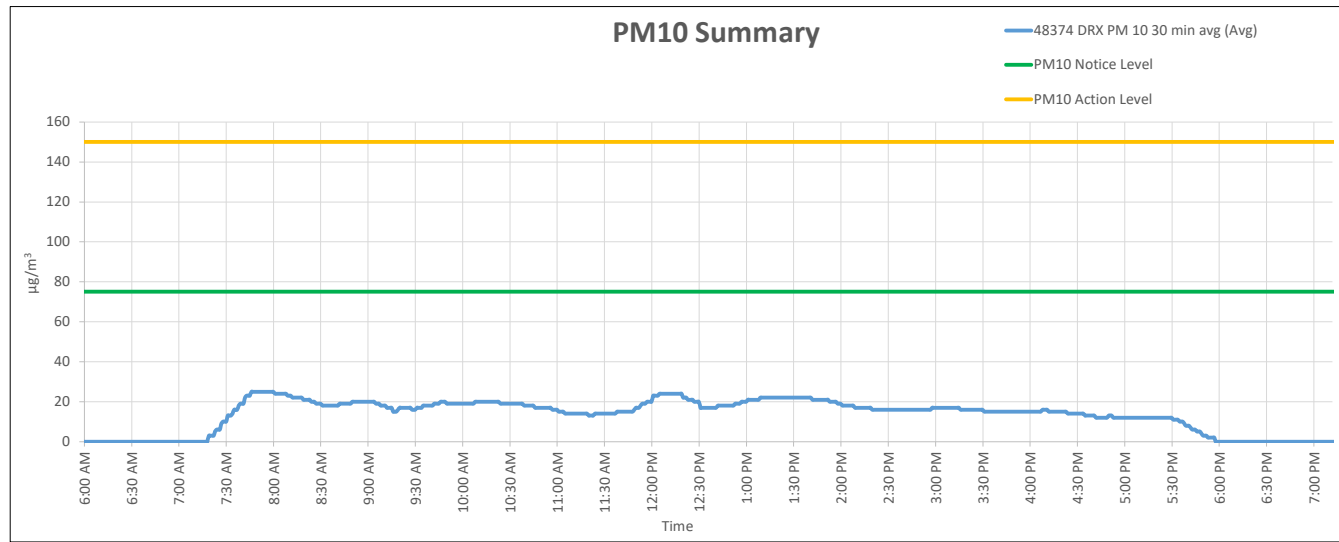
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:42 AM	5:30 PM	21.56	30.00	19.93	26.00



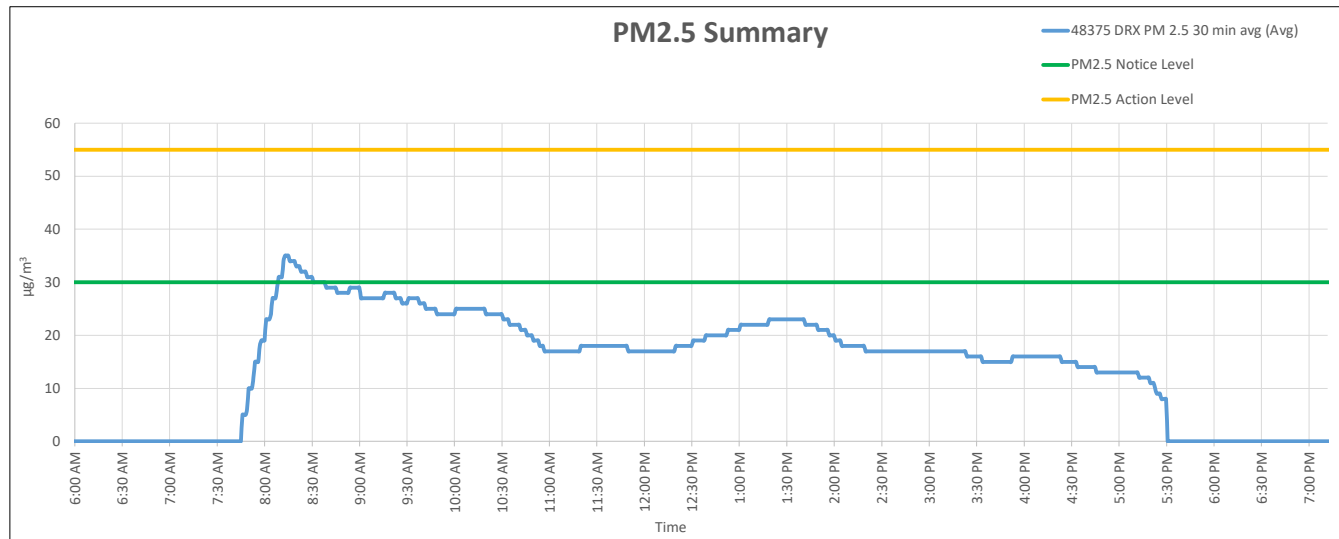
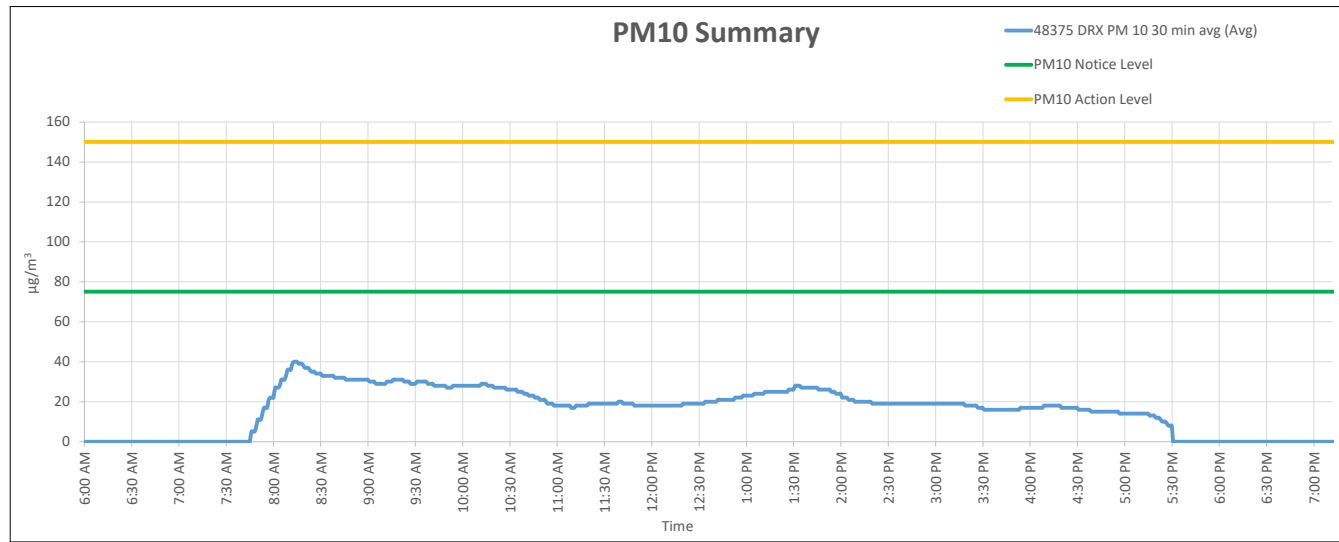
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	7:19 AM	5:57 PM	16.96	25.00	15.78	24.00



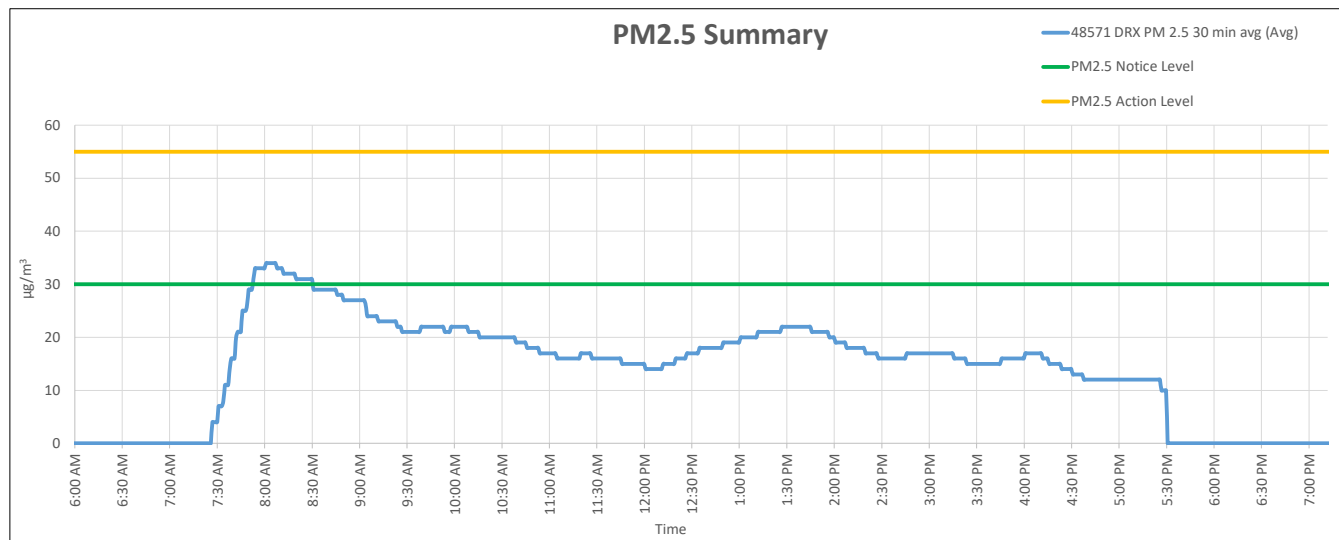
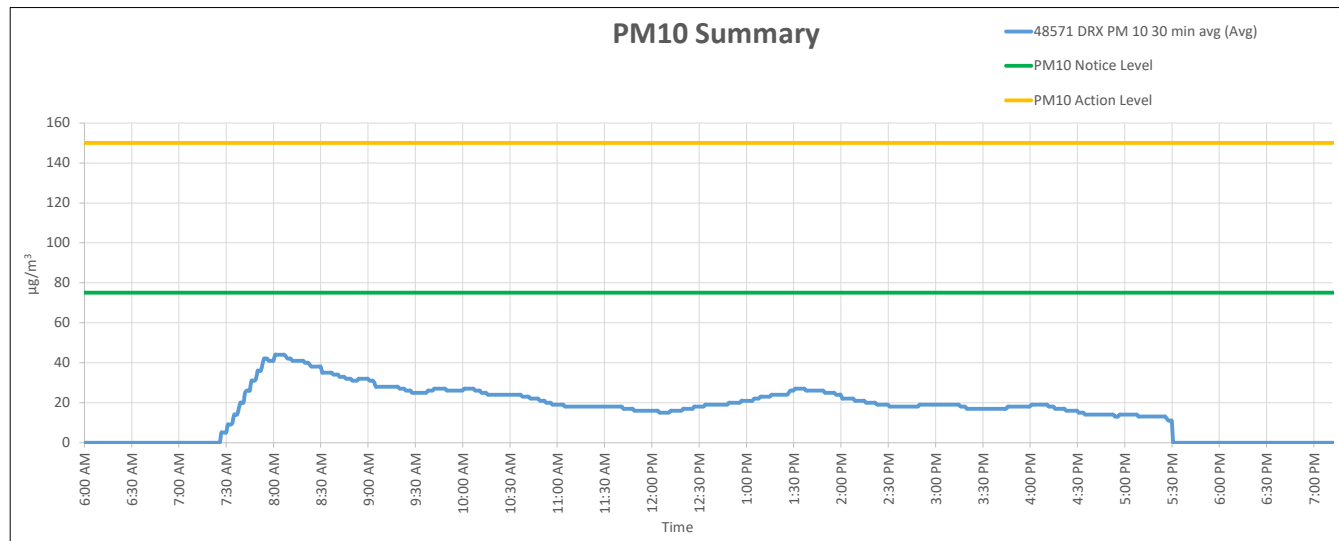
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:46 AM	5:30 PM	21.92	40.00	19.86	35.00



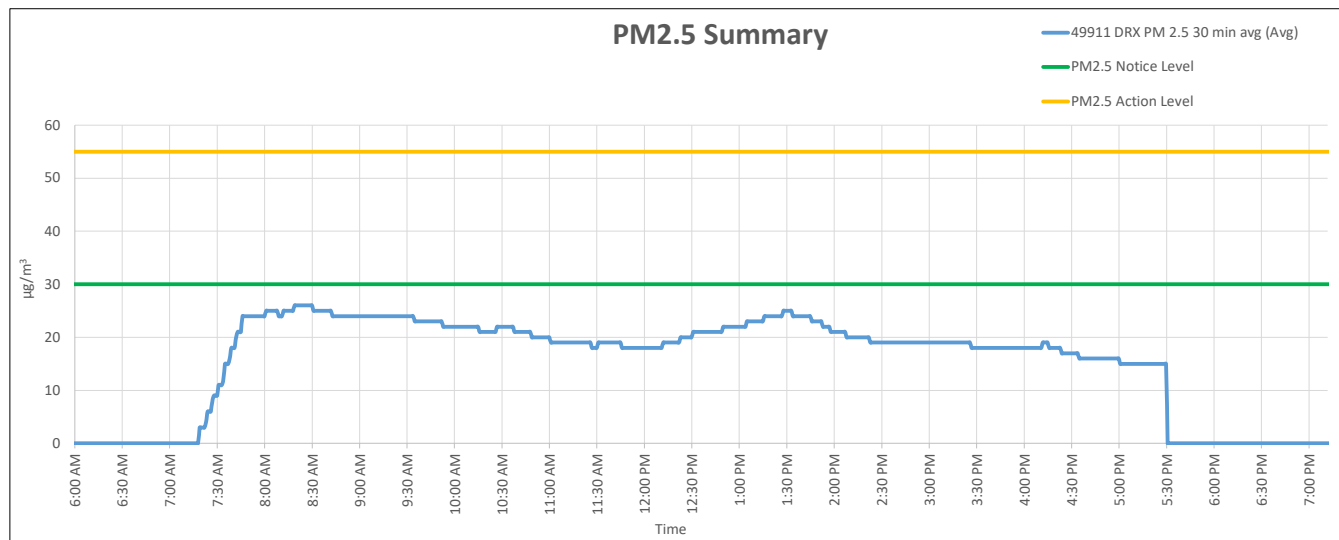
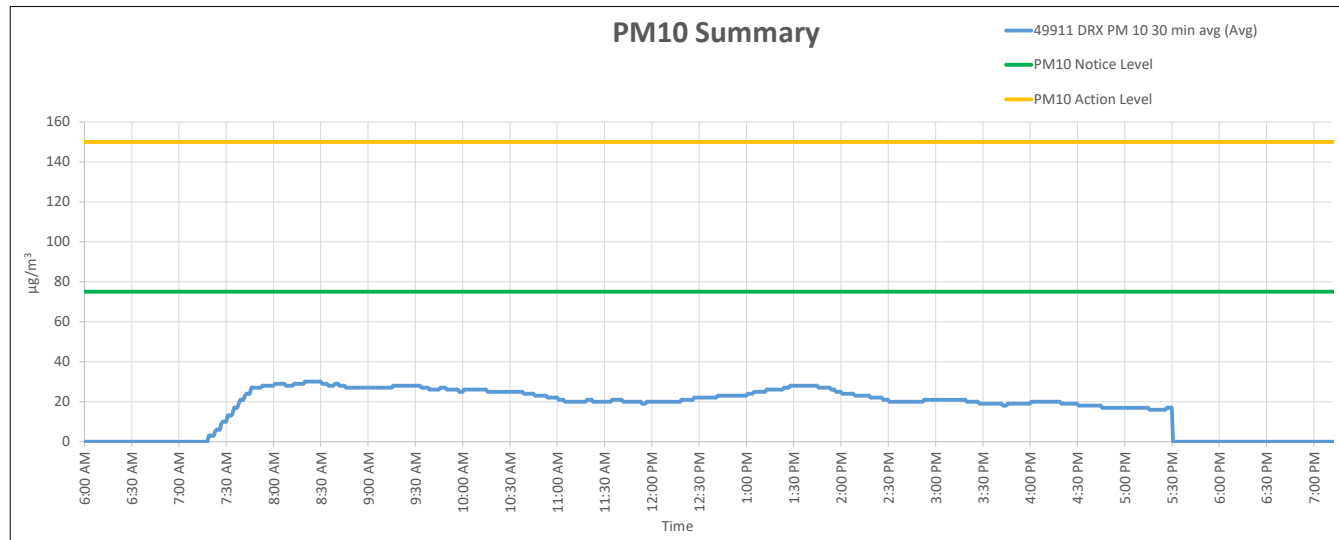
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	7:27 AM	5:30 PM	21.94	44.00	18.88	34.00



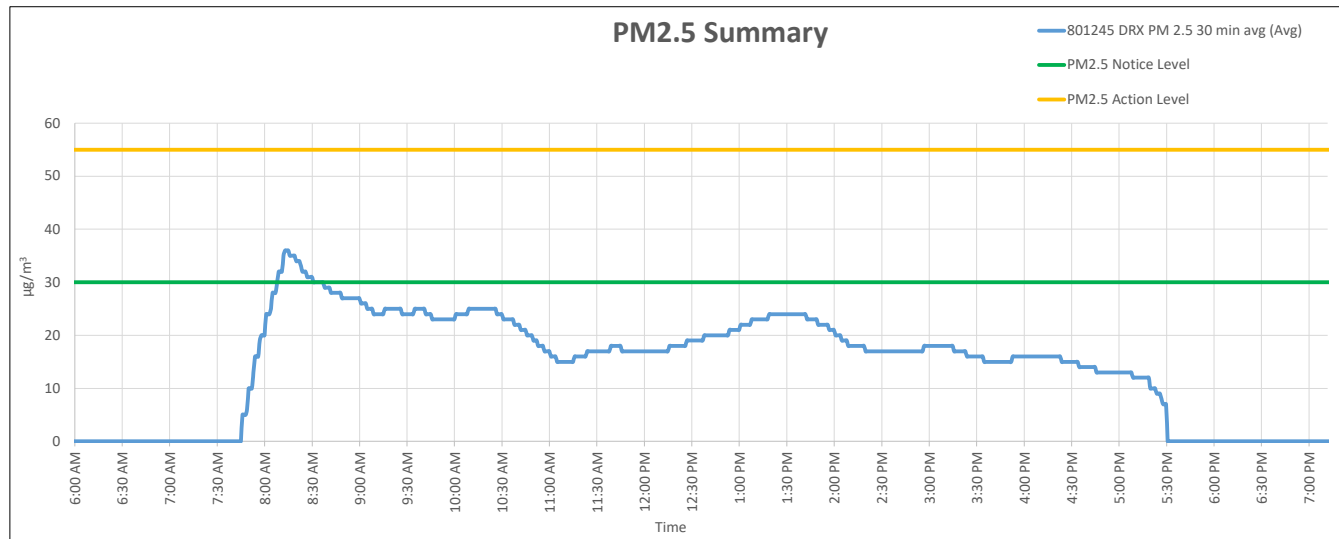
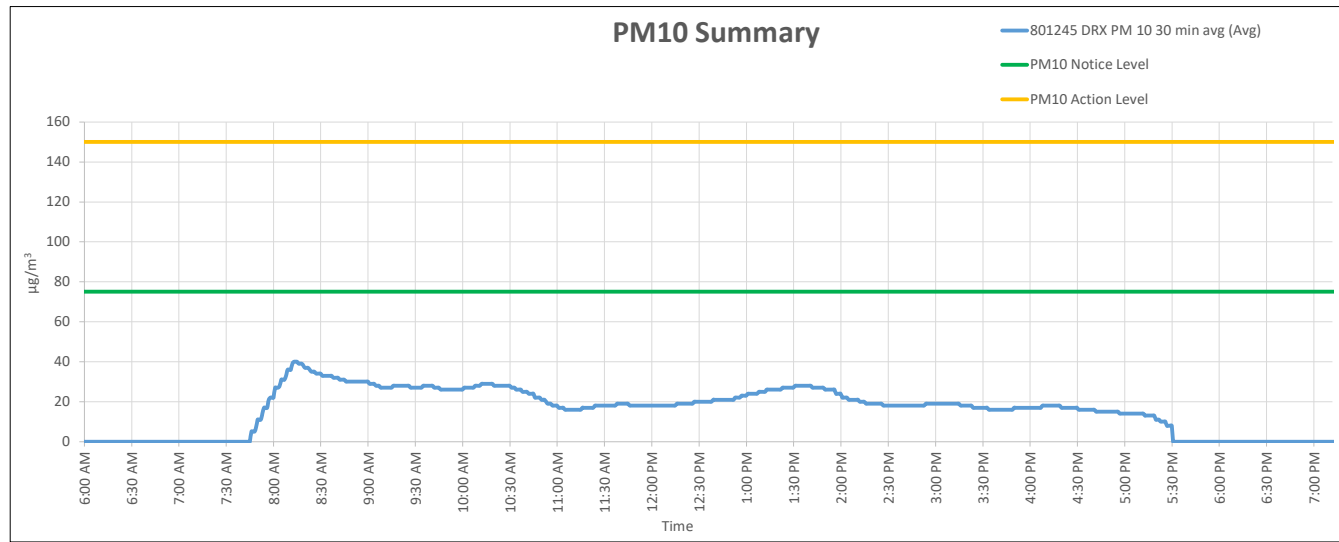
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	7:19 AM	5:30 PM	22.46	30.00	20.13	26.00

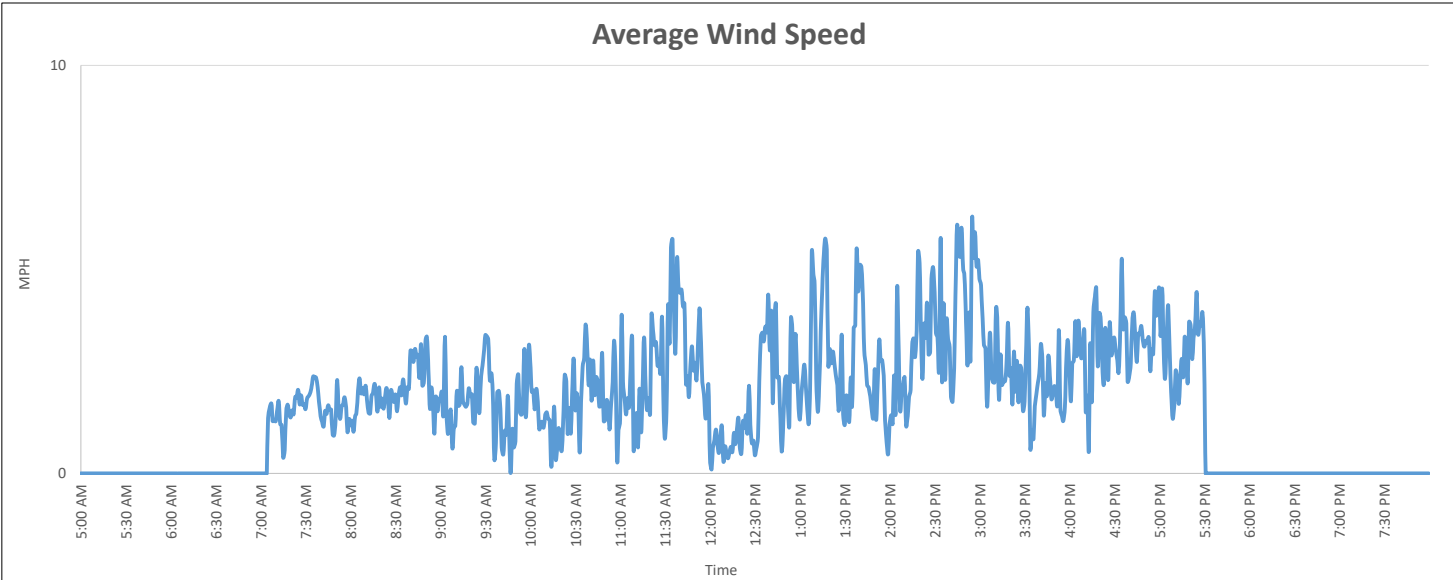
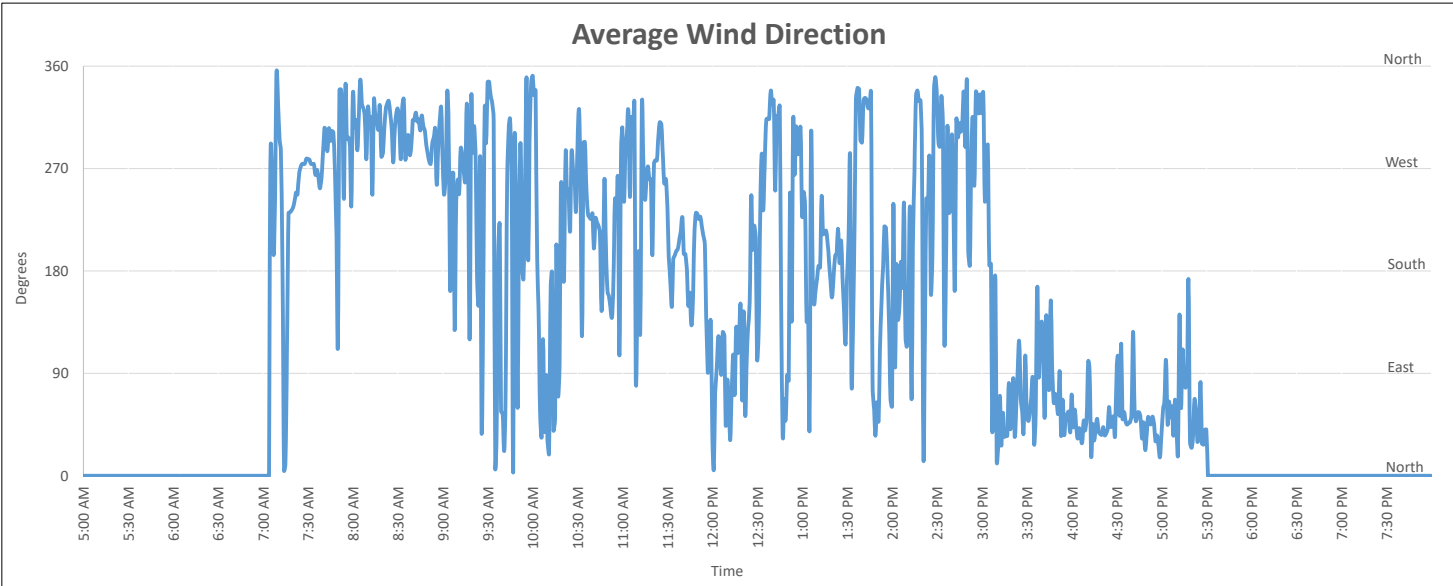


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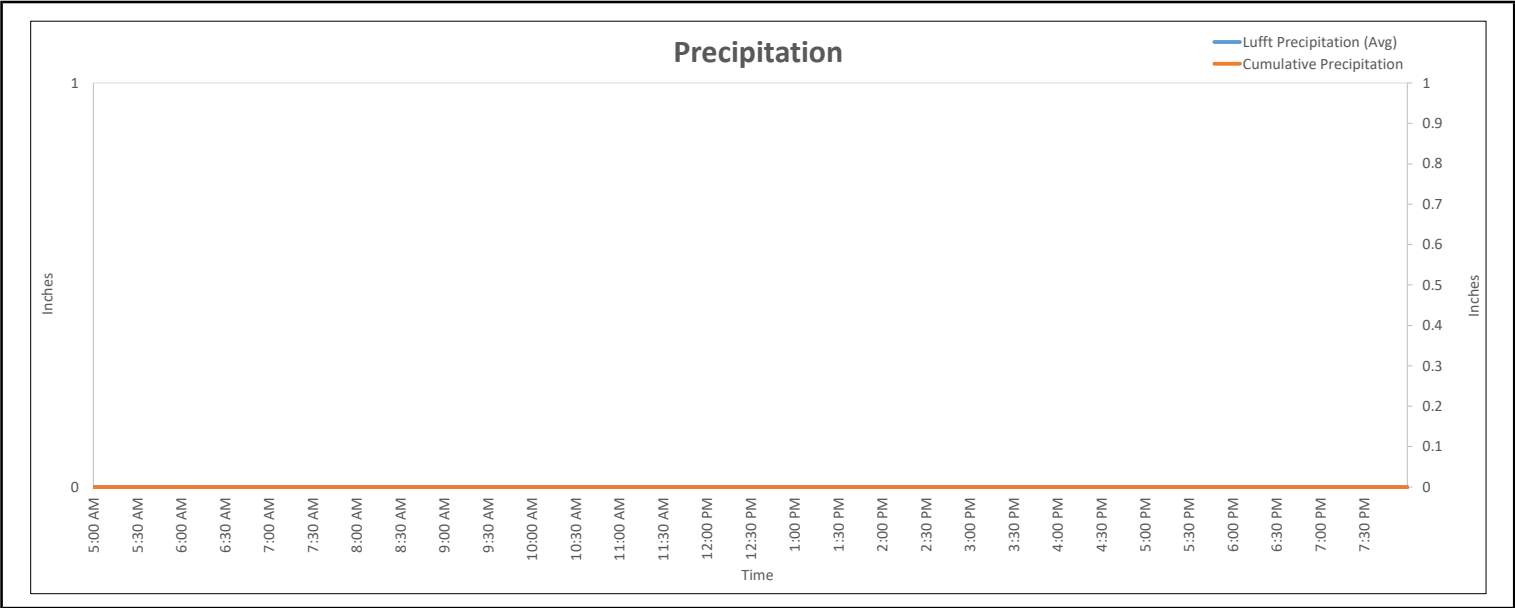
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:46 AM	5:30 PM	21.69	40.00	19.72	36.00



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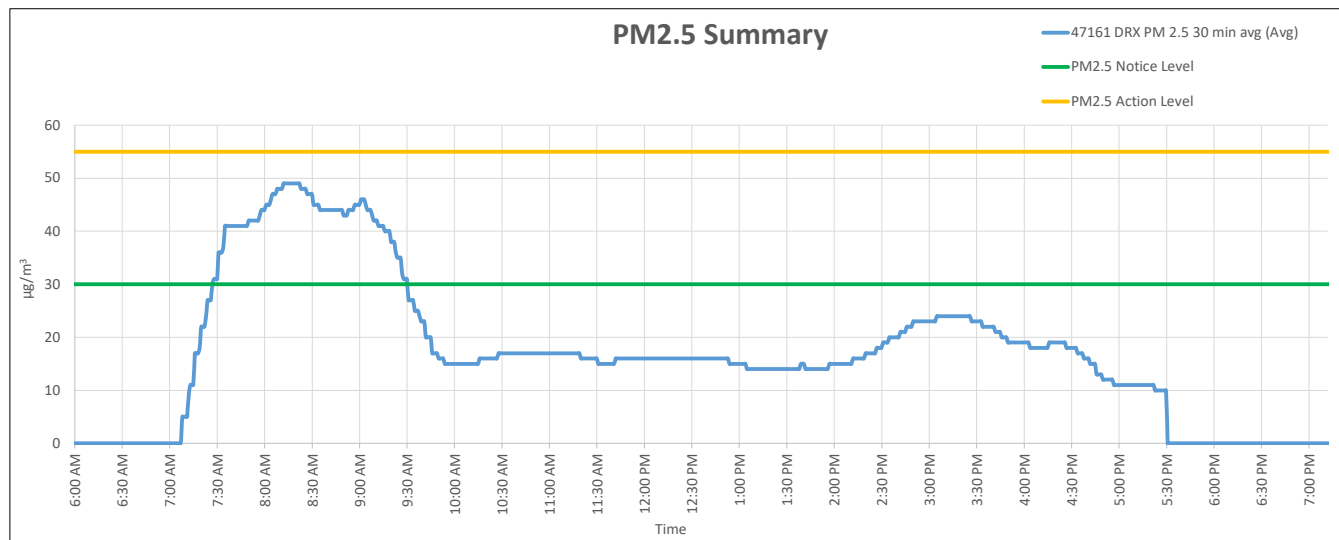
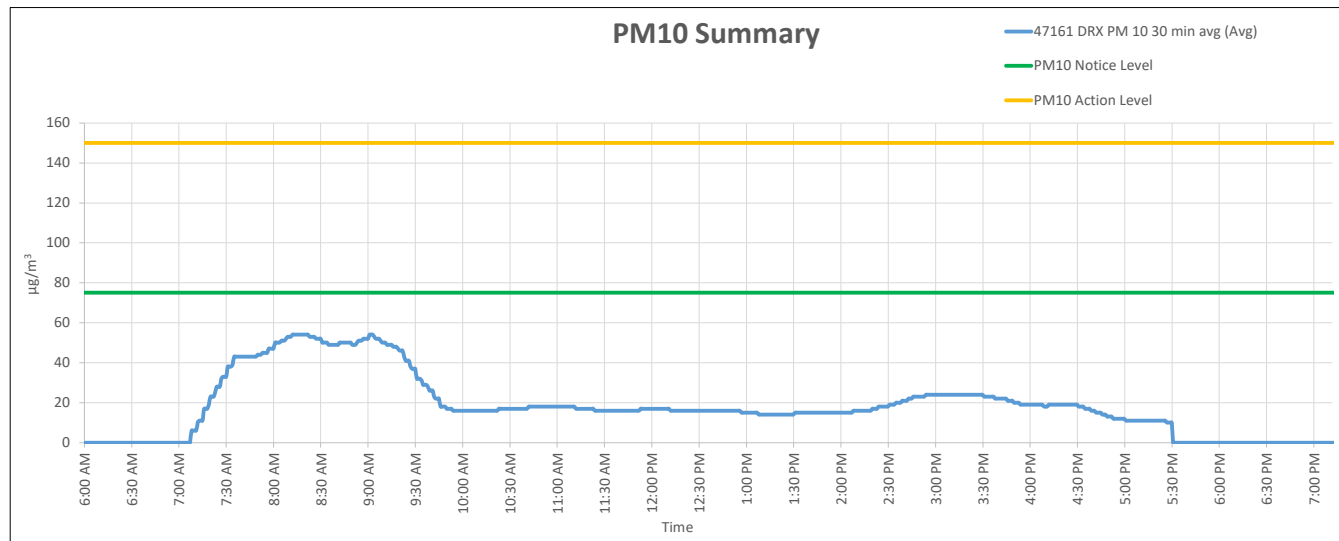


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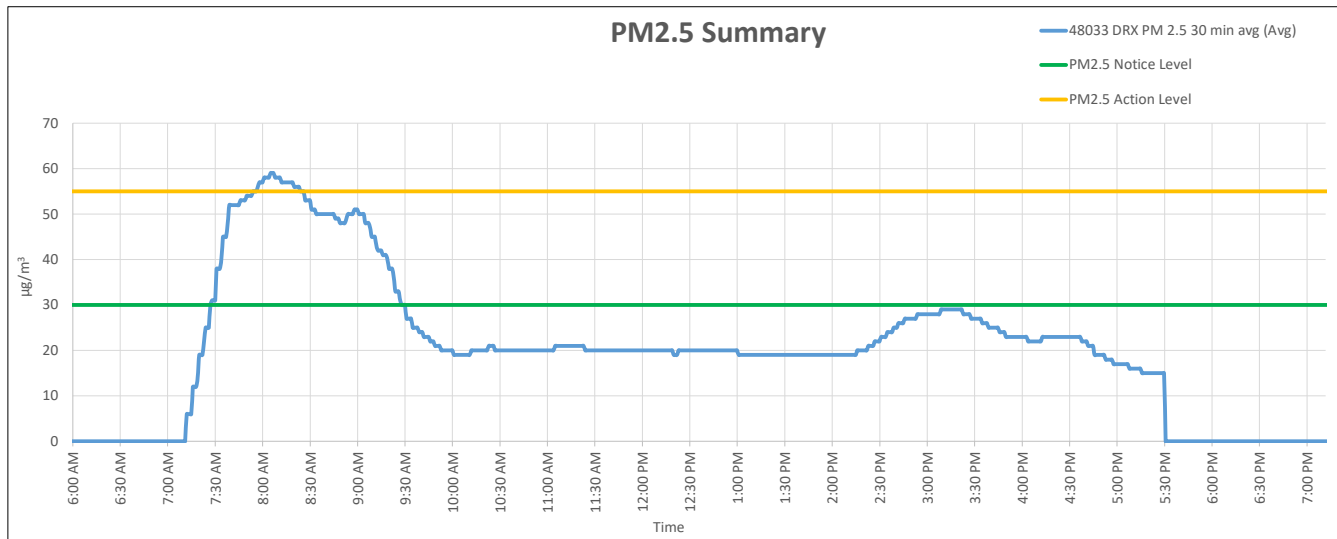
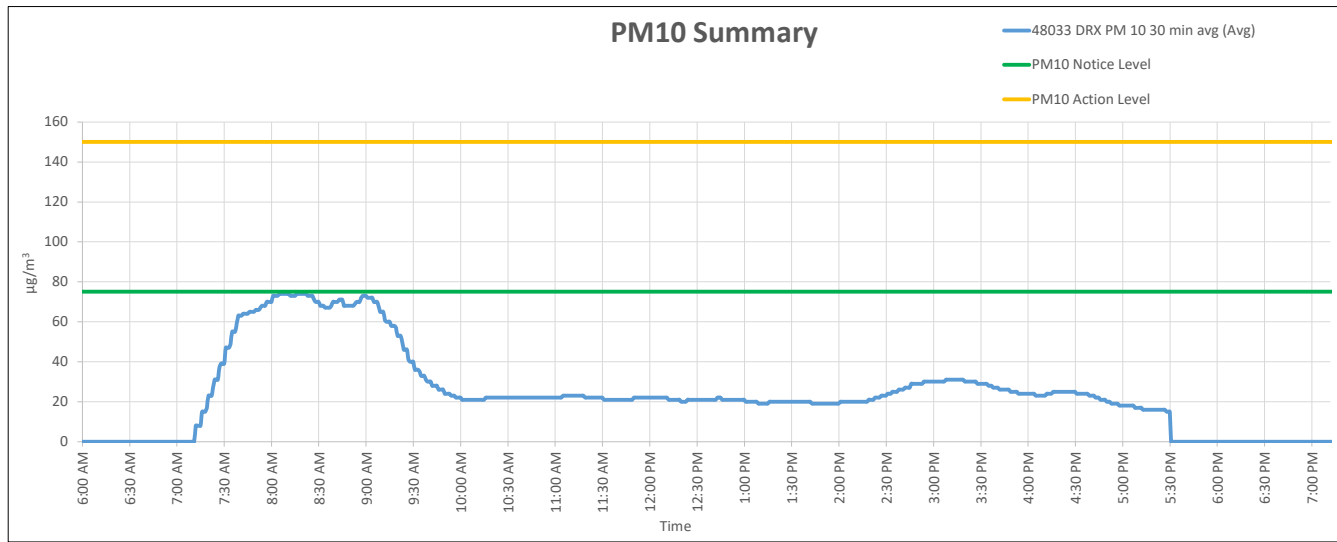
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:08 AM	5:30 PM	23.42	54.00	21.99	49.00



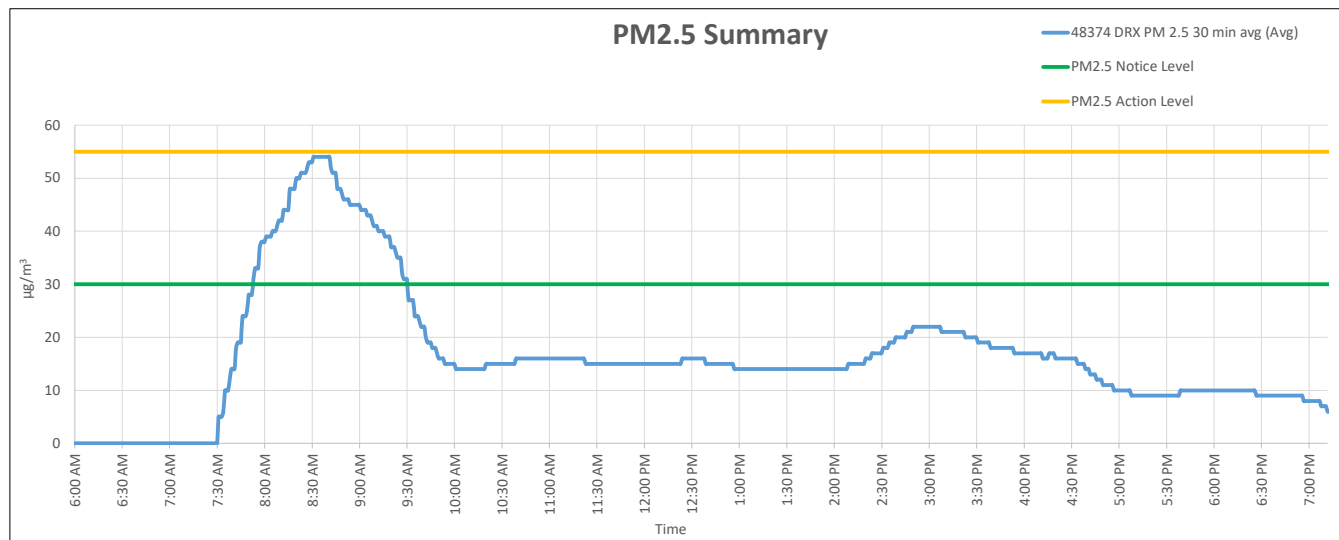
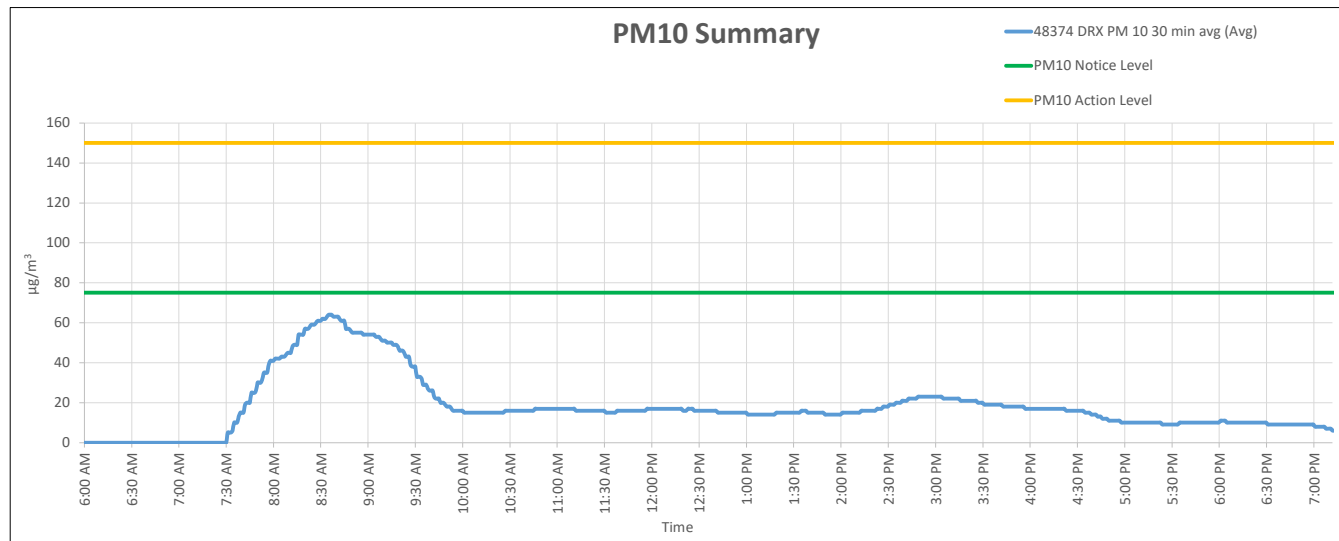
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:12 AM	5:30 PM	31.06	74.00	26.57	59.00



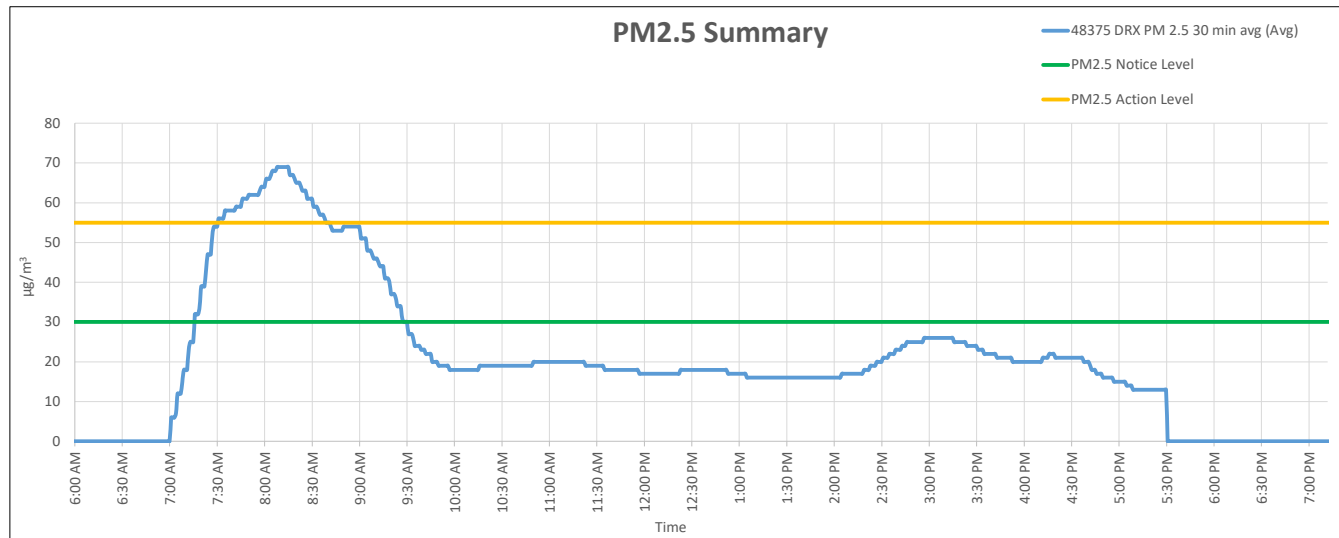
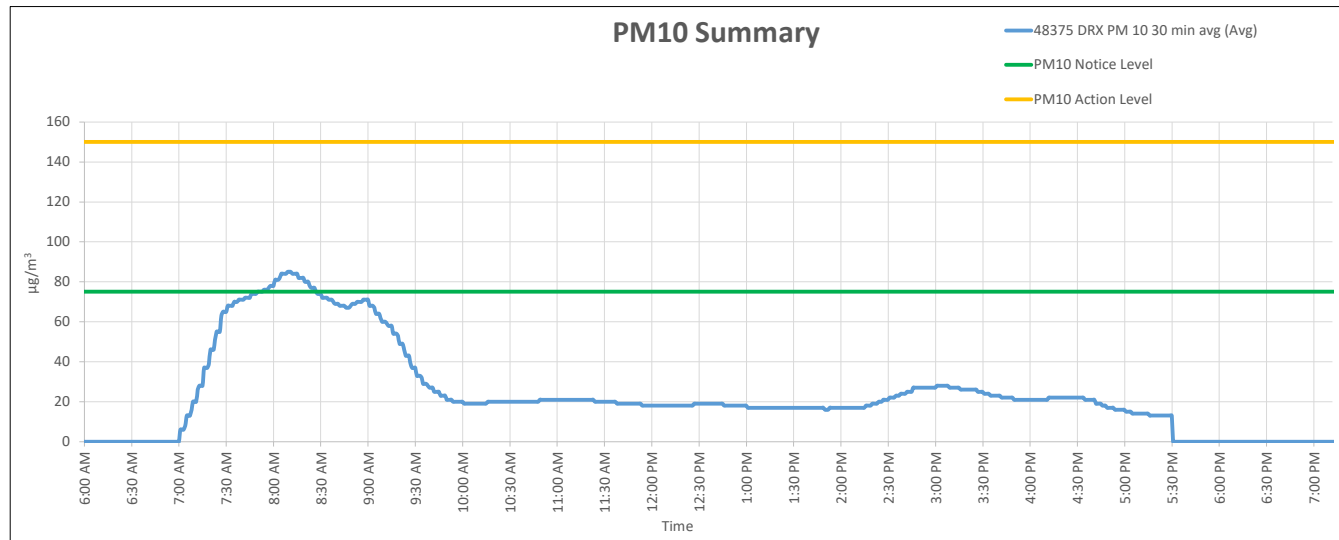
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	7:31 AM	7:30 PM	19.87	64.00	18.30	54.00



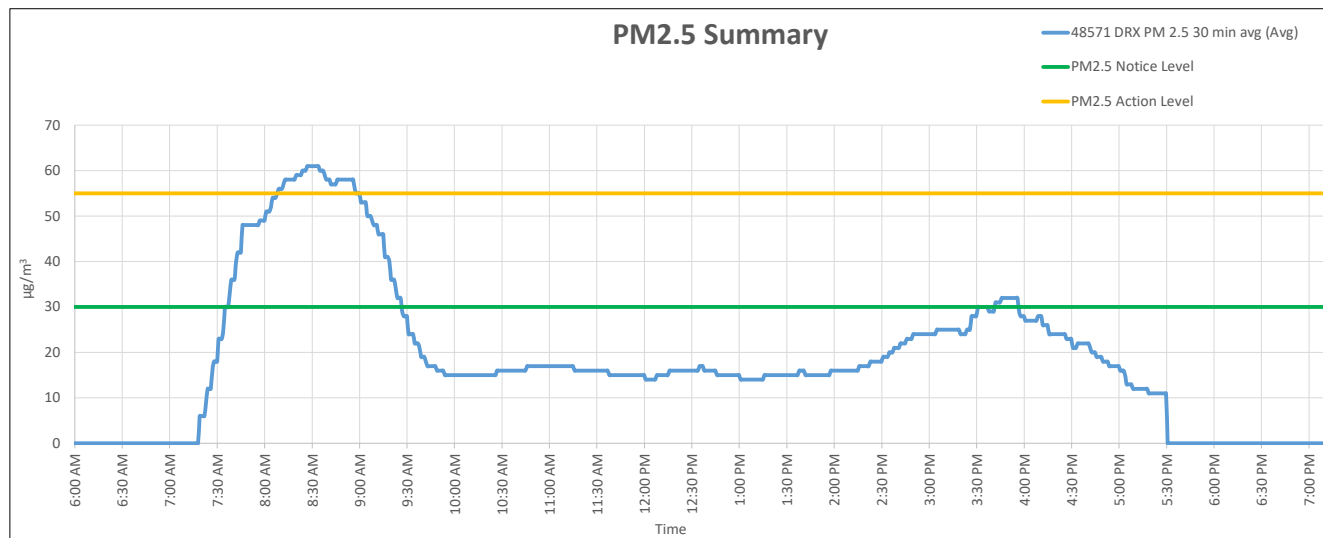
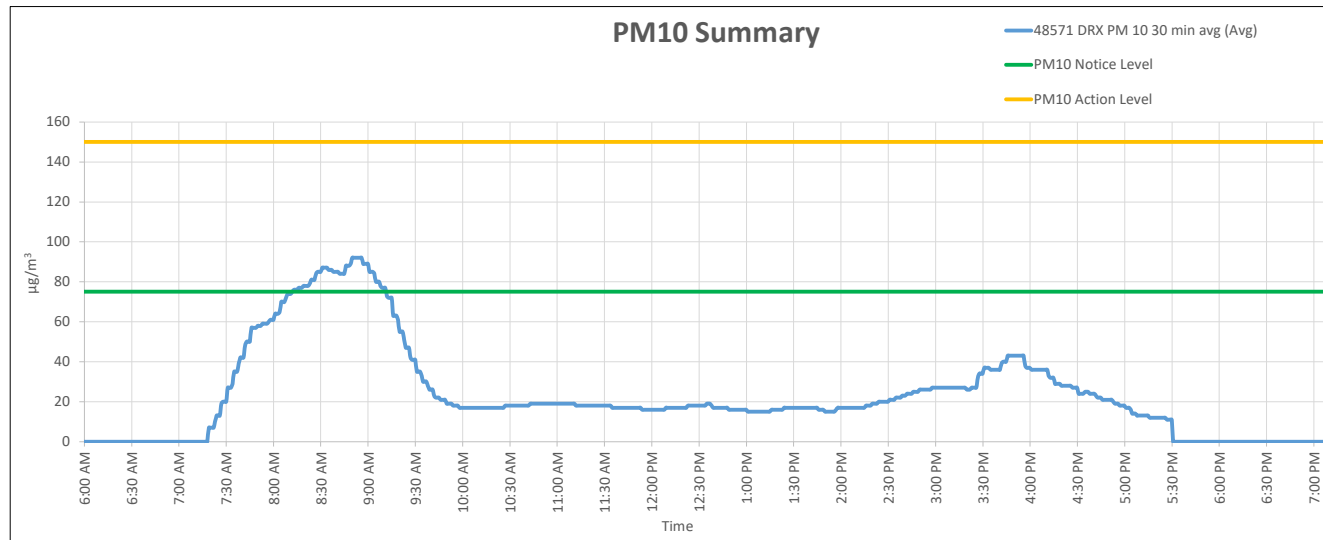
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:01 AM	5:30 PM	30.13	85.00	26.47	69.00



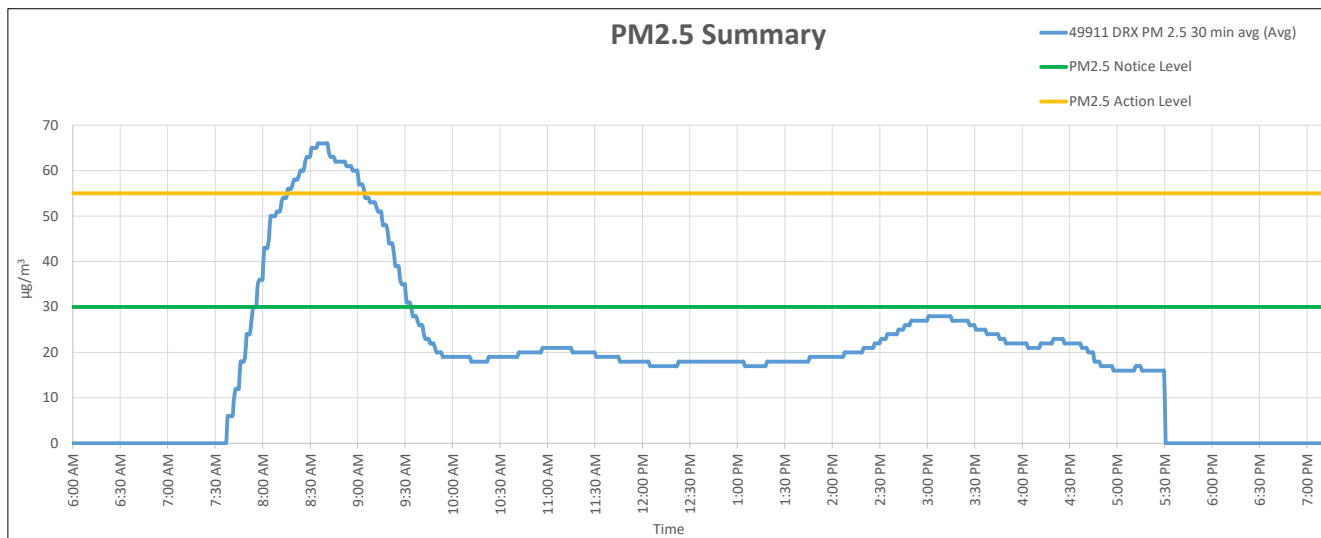
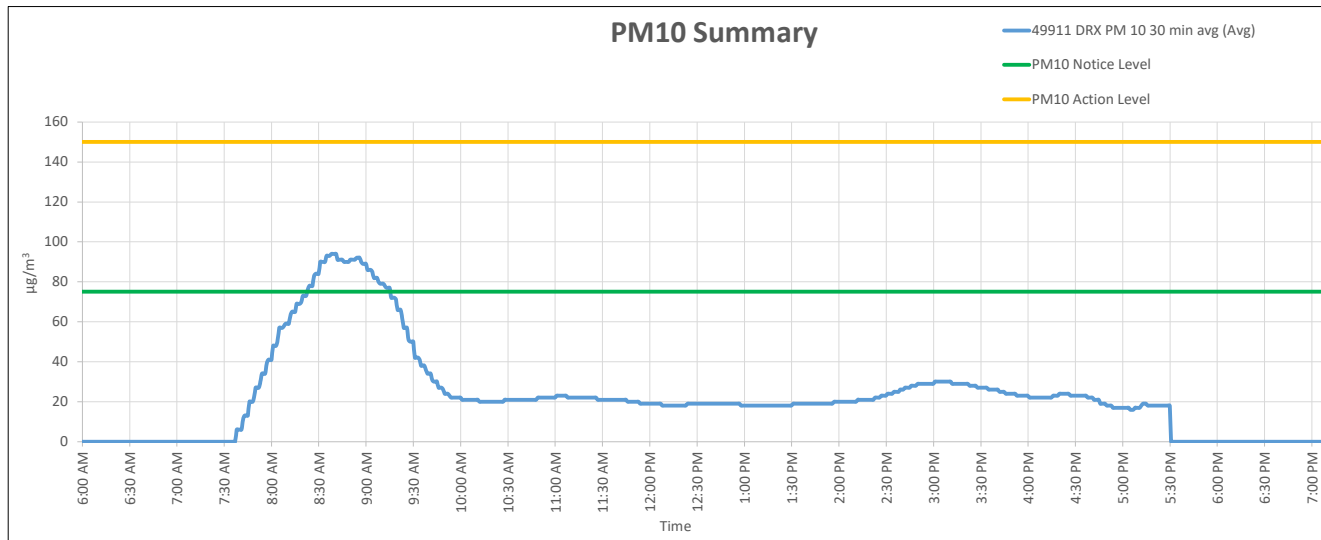
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	7:19 AM	5:30 PM	30.32	92.00	24.31	61.00



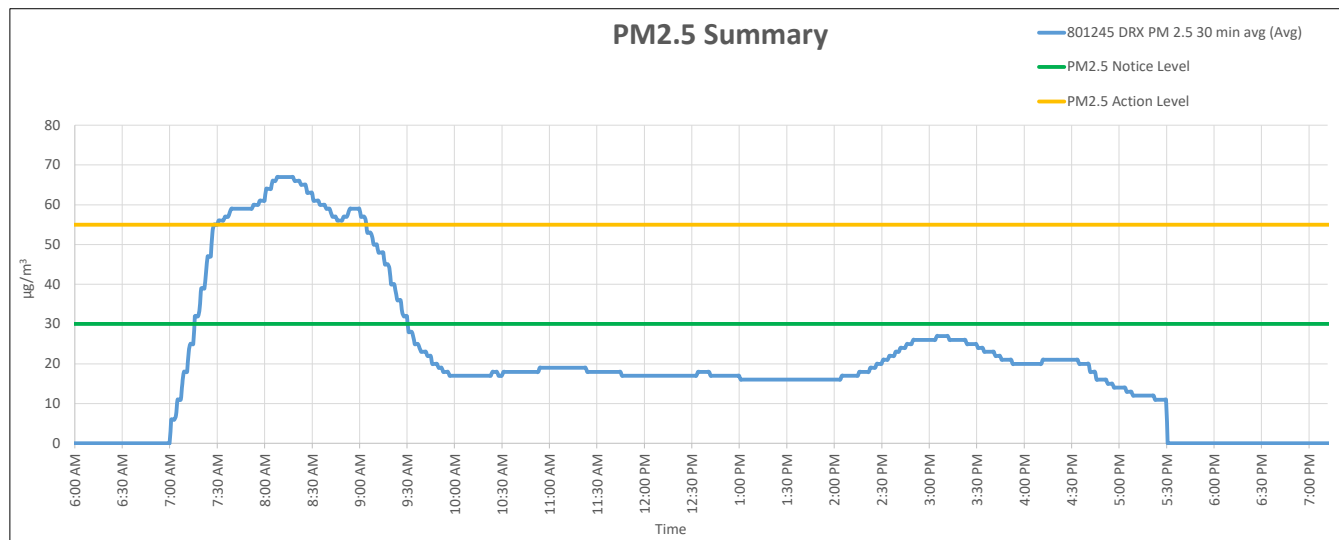
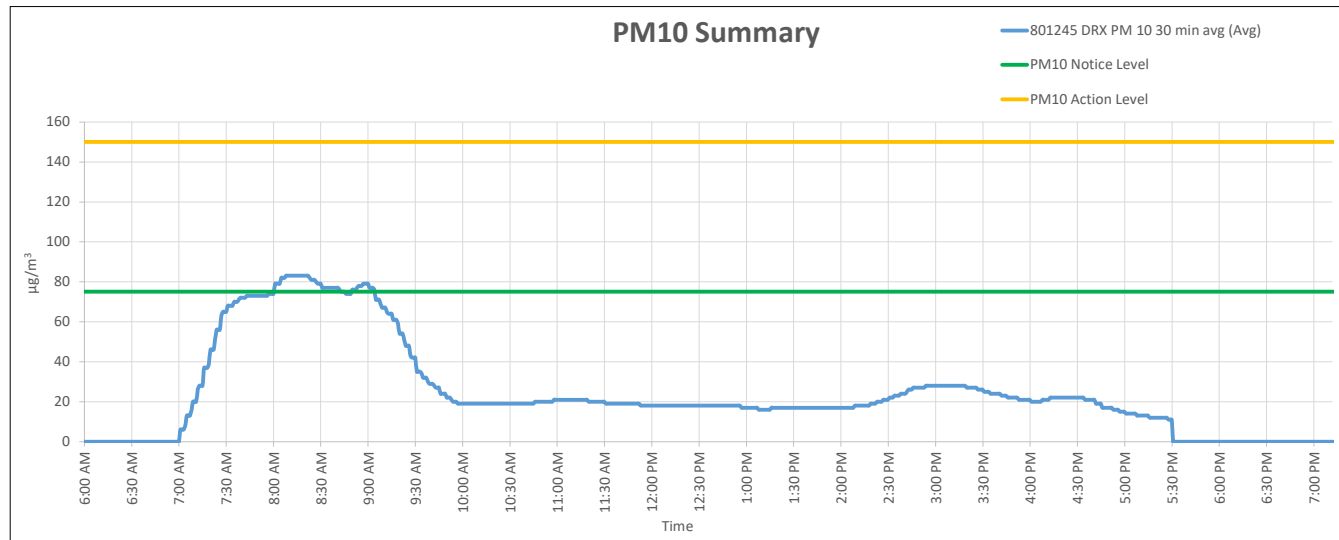
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	7:38 AM	5:30 PM	30.23	94.00	25.64	66.00

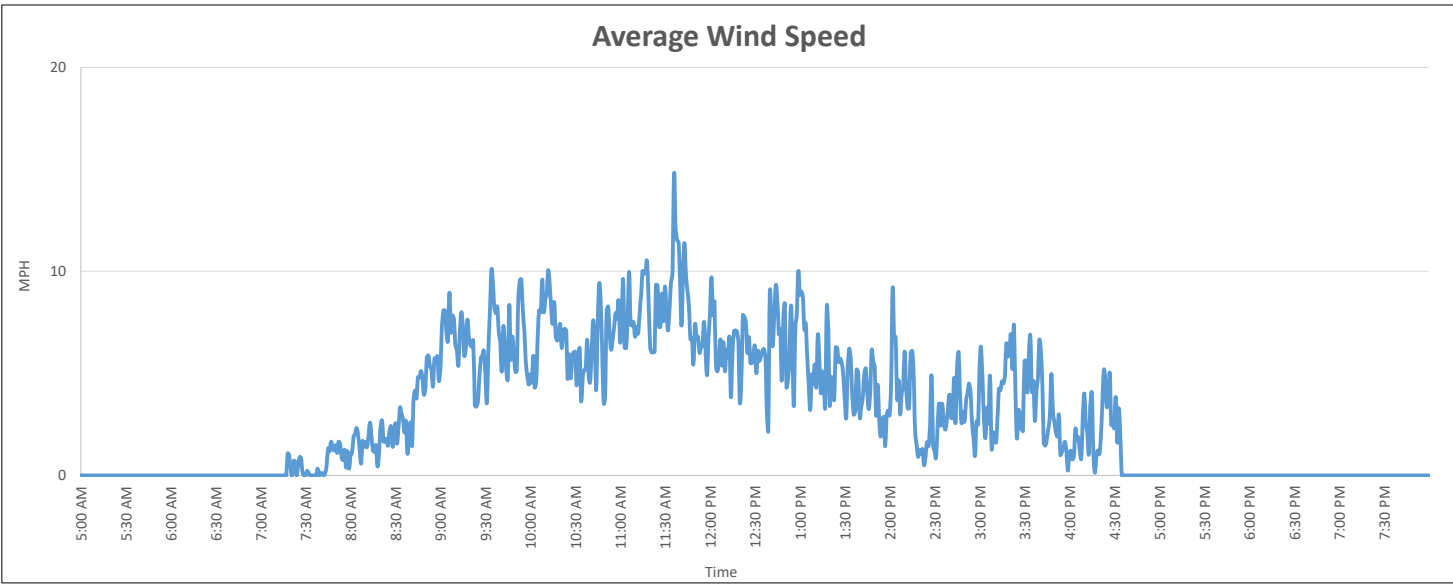
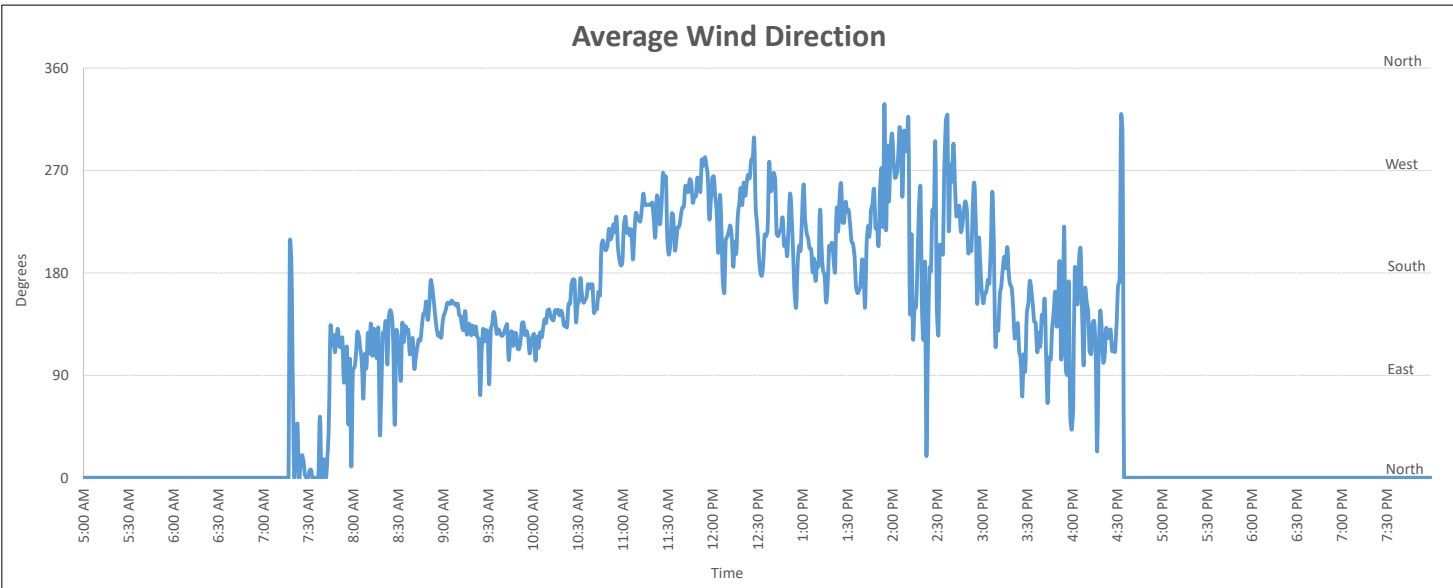


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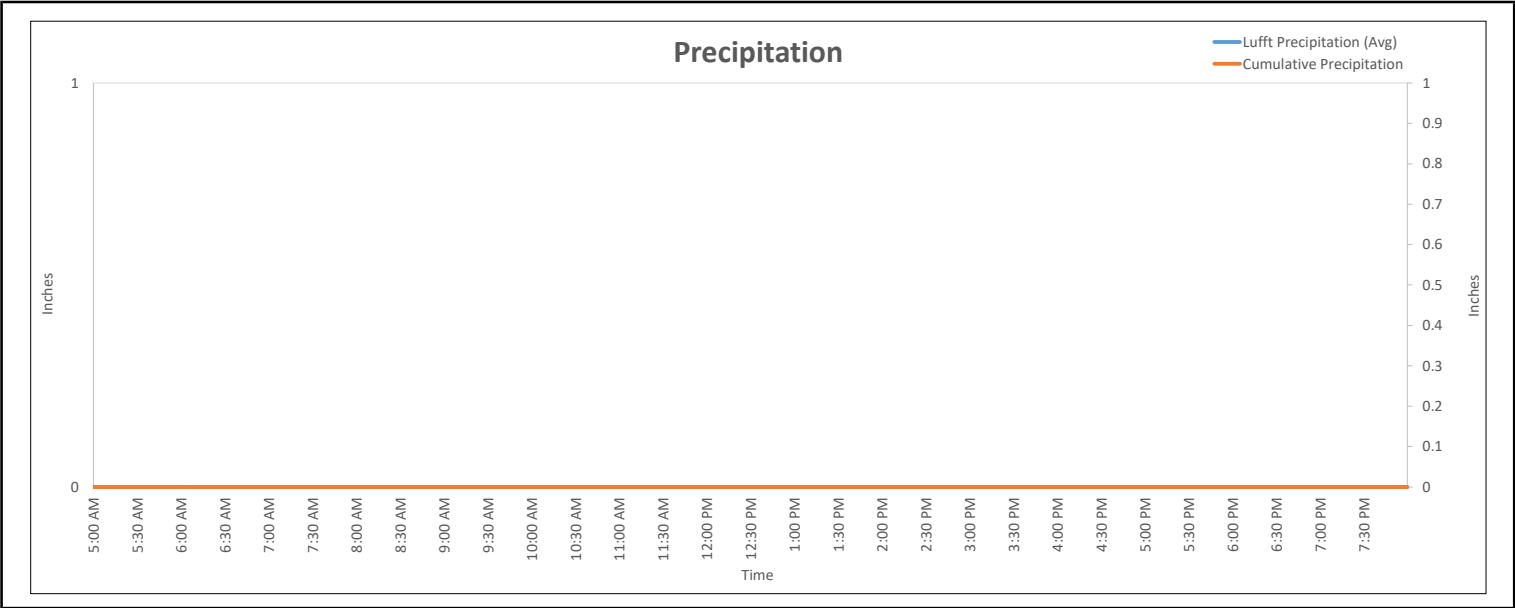
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:01 AM	5:30 PM	30.72	83.00	26.50	67.00



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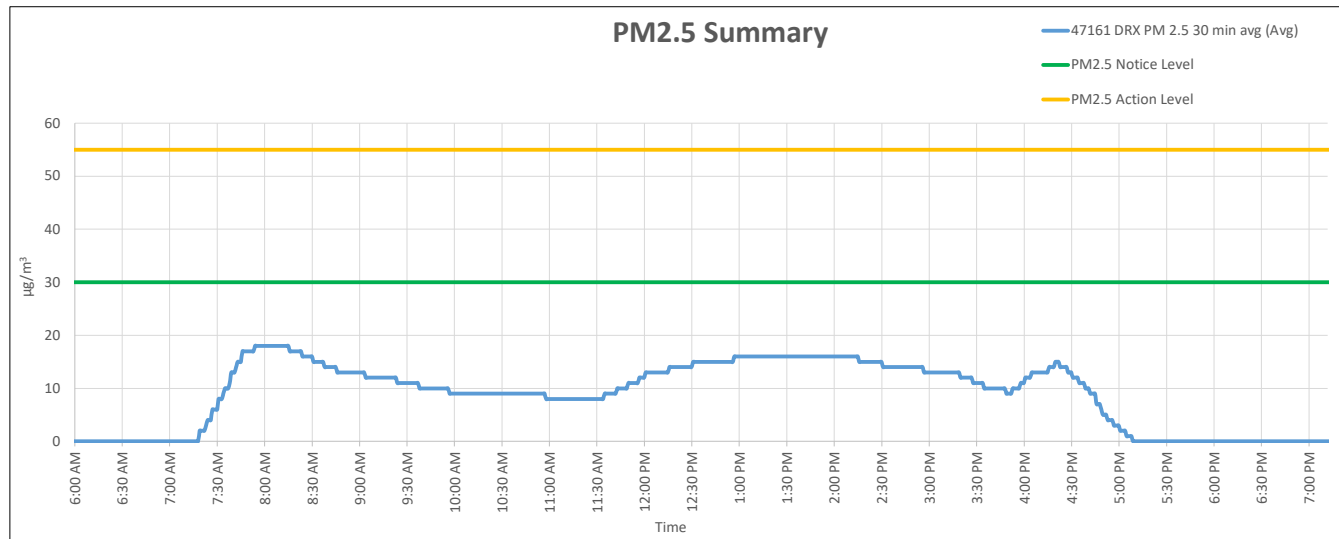
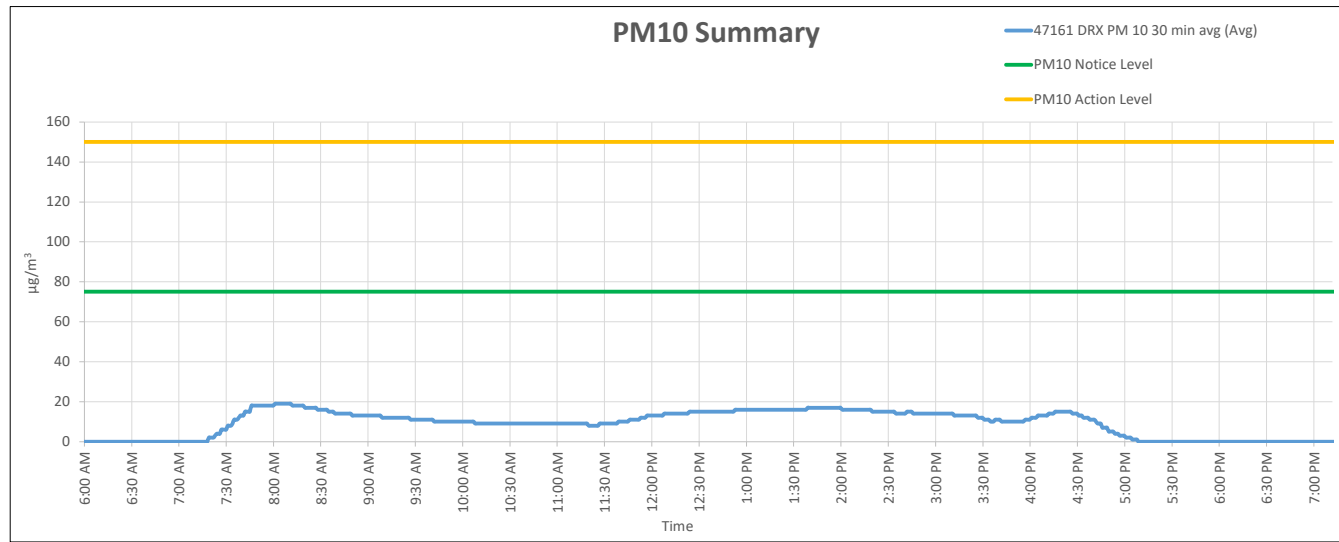


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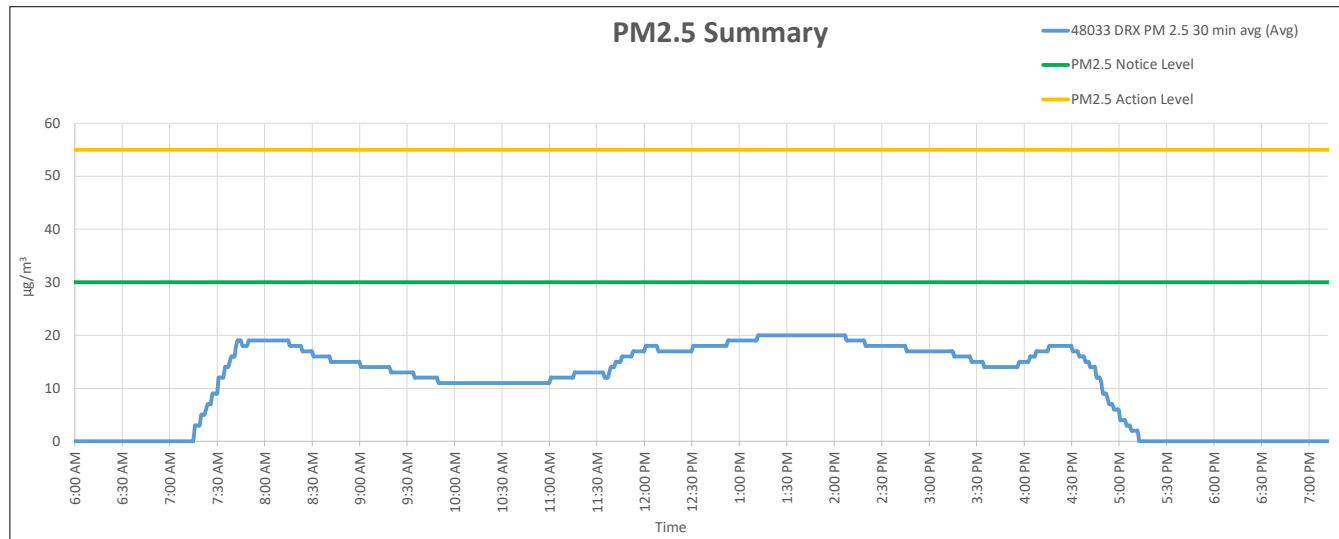
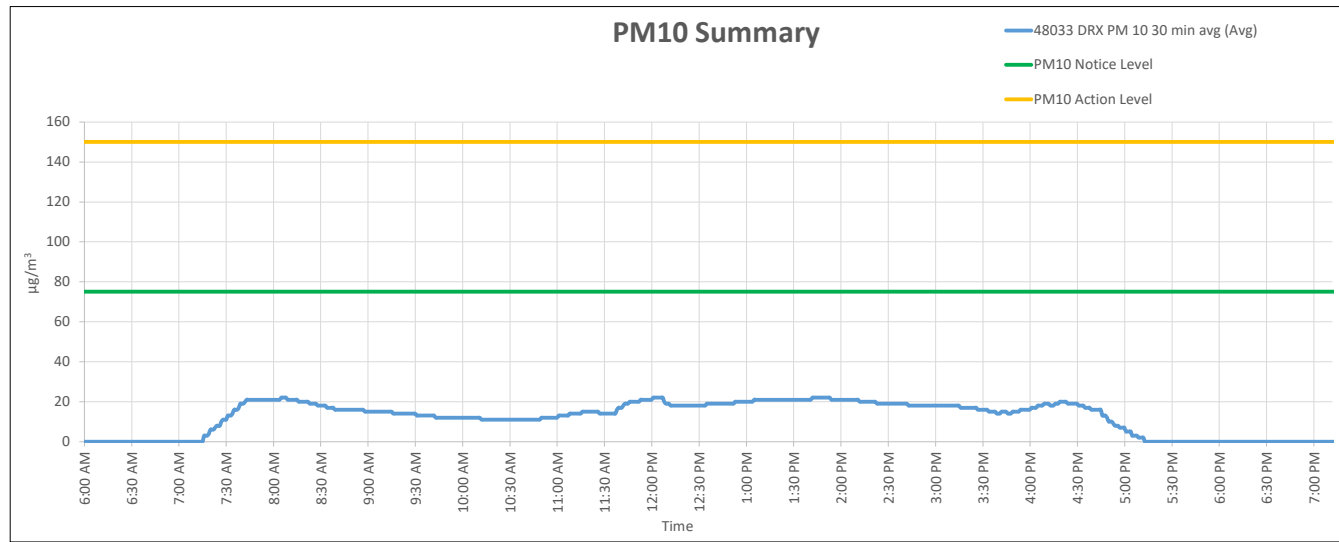
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
47161	7:19 AM	5:04 PM	12.53	19.00	12.15	18.00



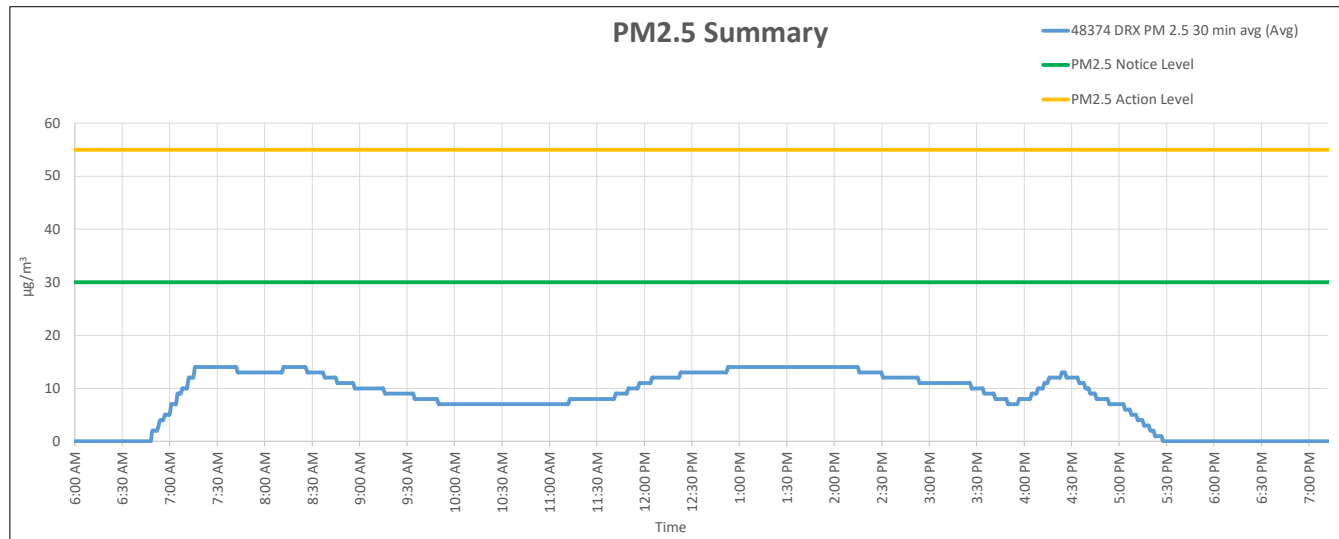
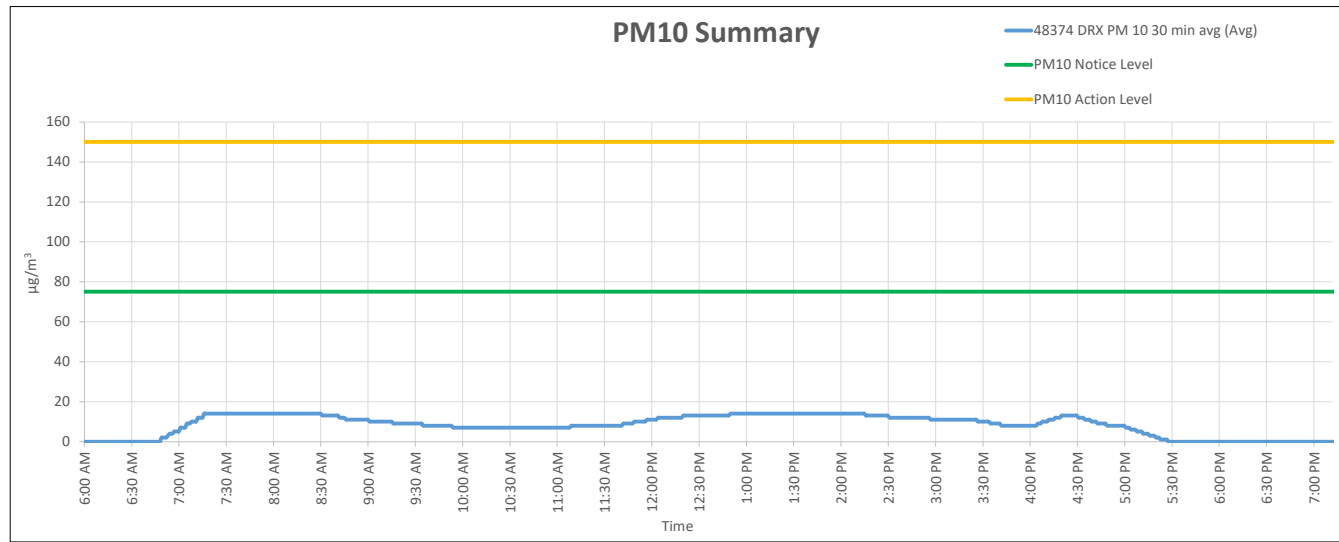
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48033	7:16 AM	5:12 PM	16.37	22.00	15.13	20.00



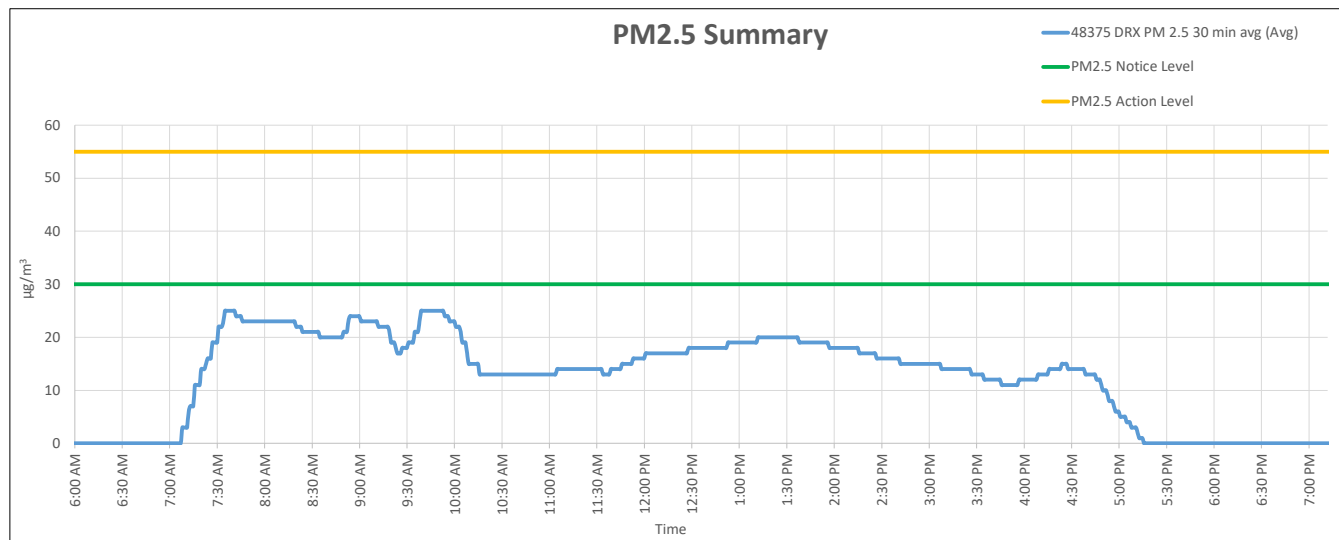
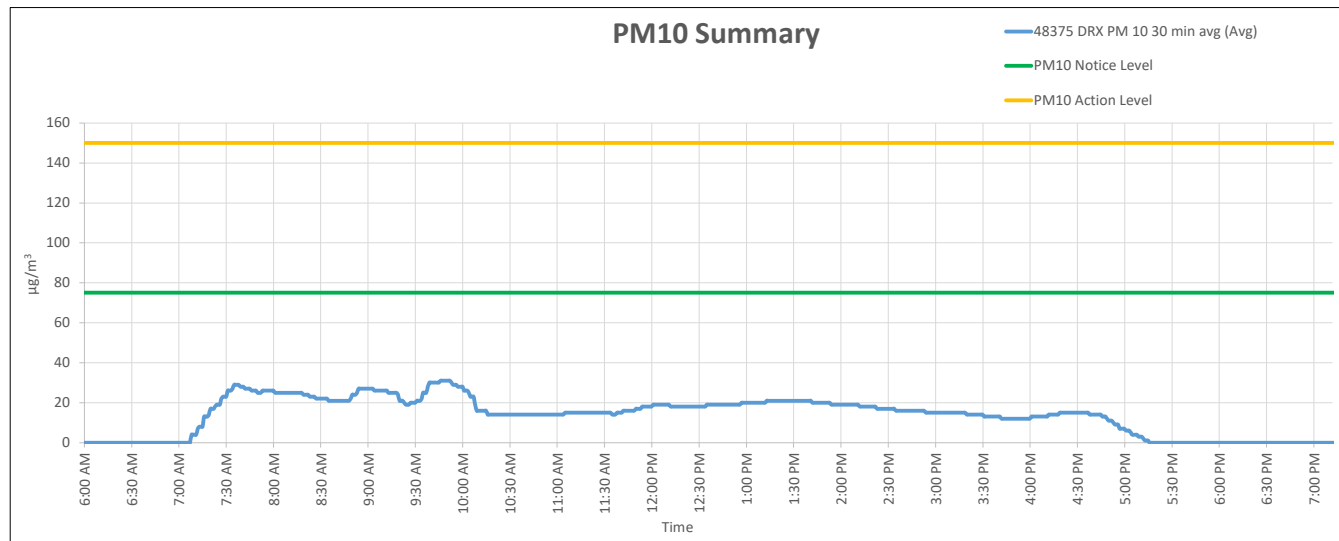
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48374	6:49 AM	5:22 PM	10.50	14.00	10.37	14.00



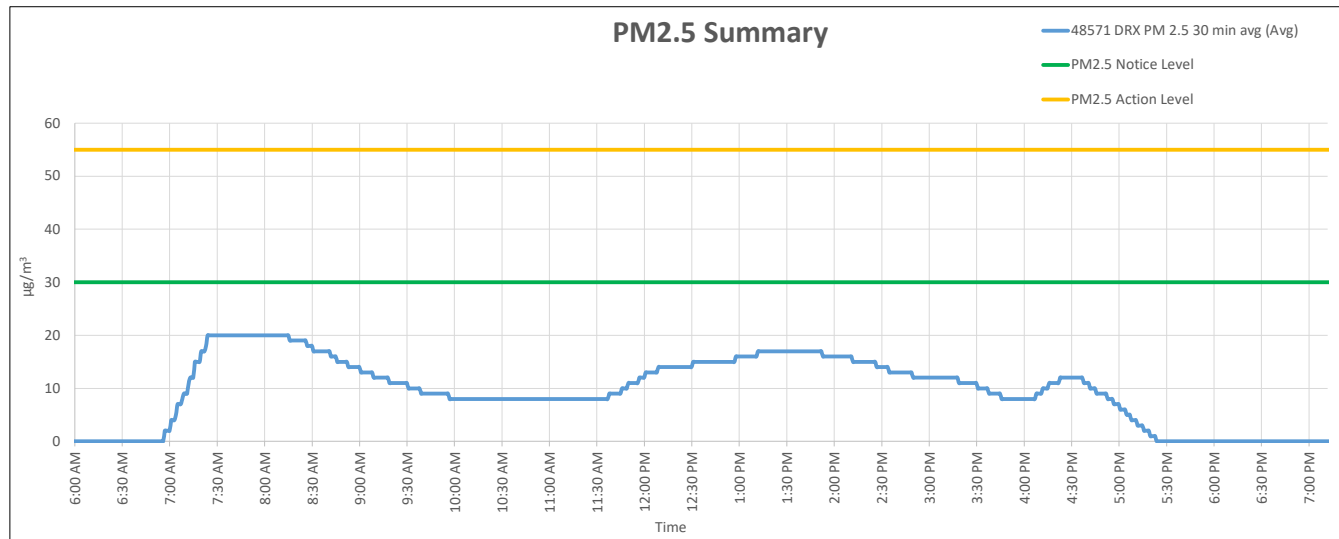
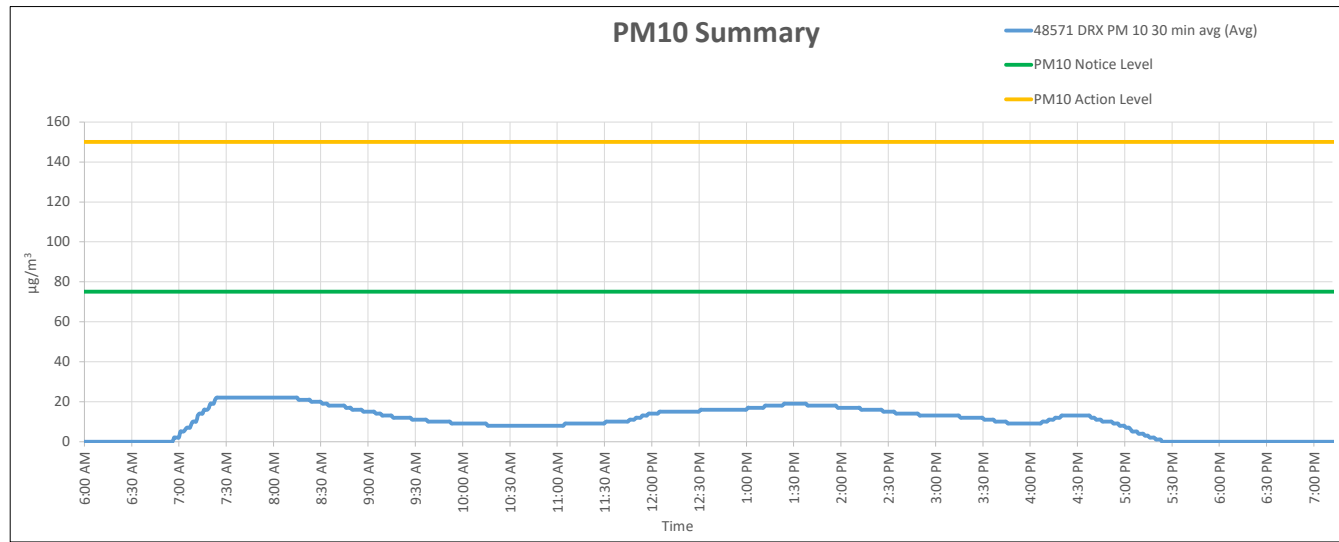
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48375	7:08 AM	5:12 PM	18.03	31.00	16.58	25.00



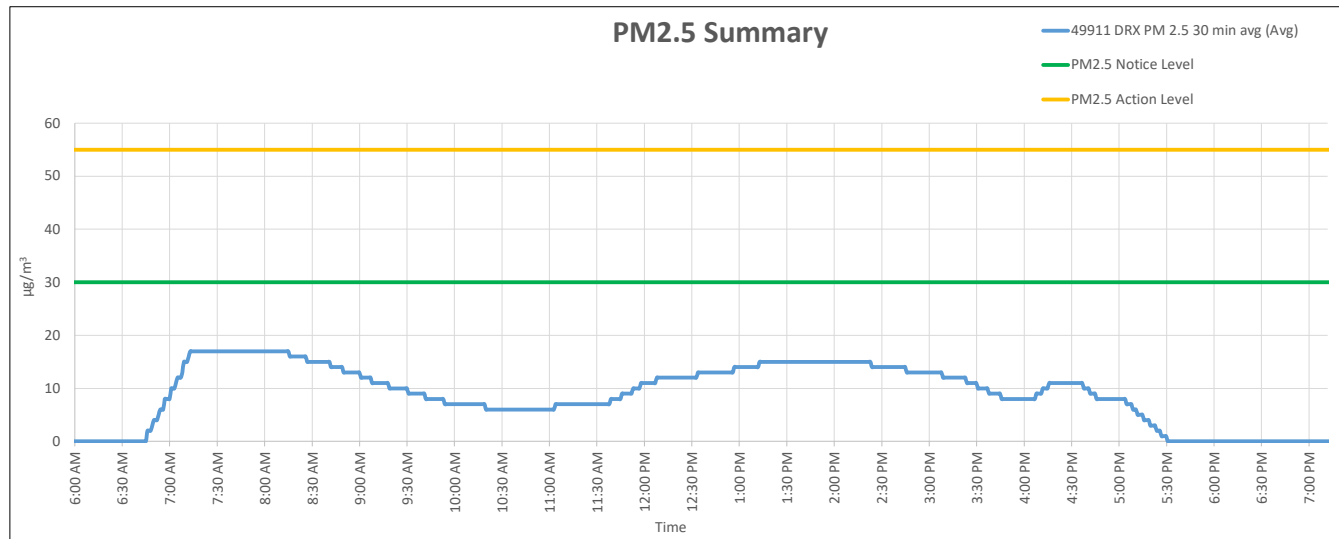
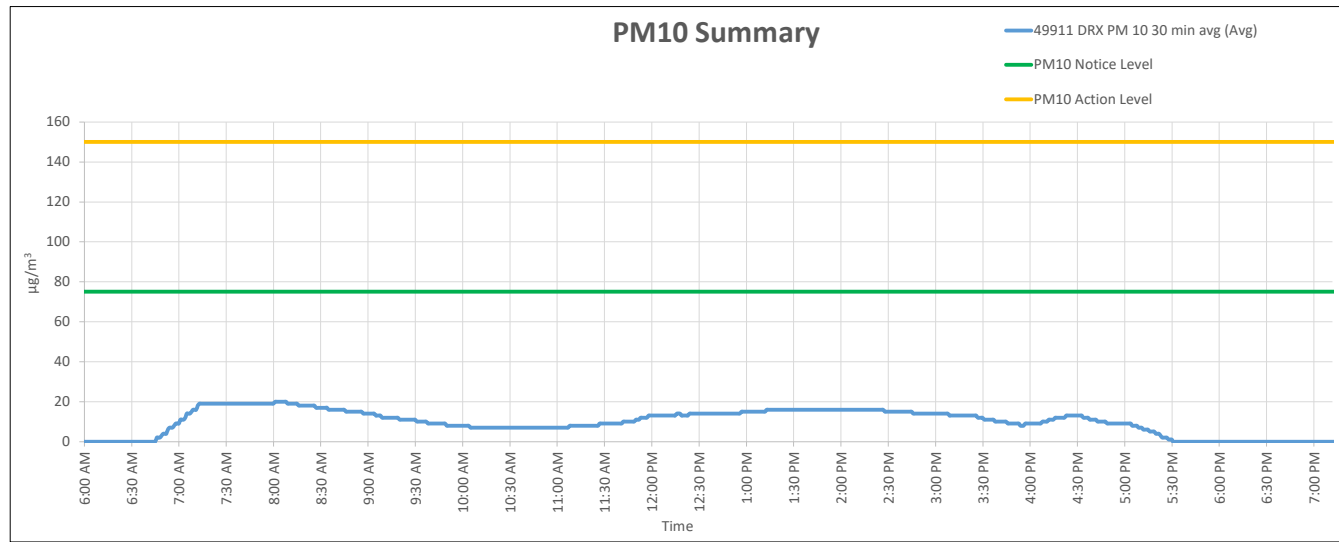
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
48571	6:57 AM	5:19 PM	13.32	22.00	12.25	20.00



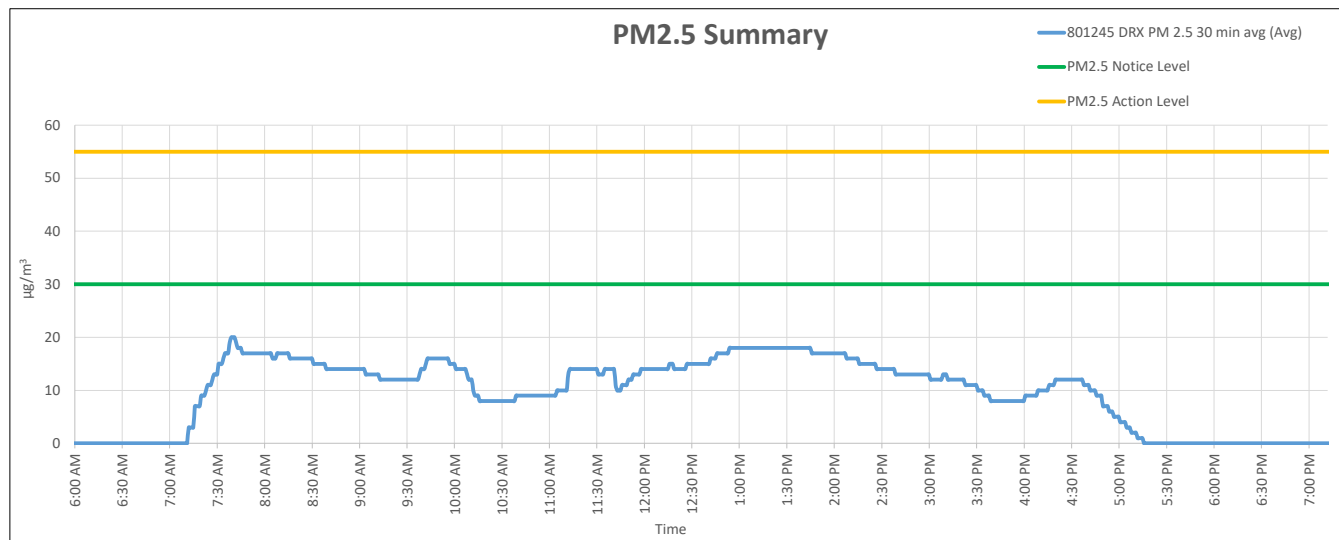
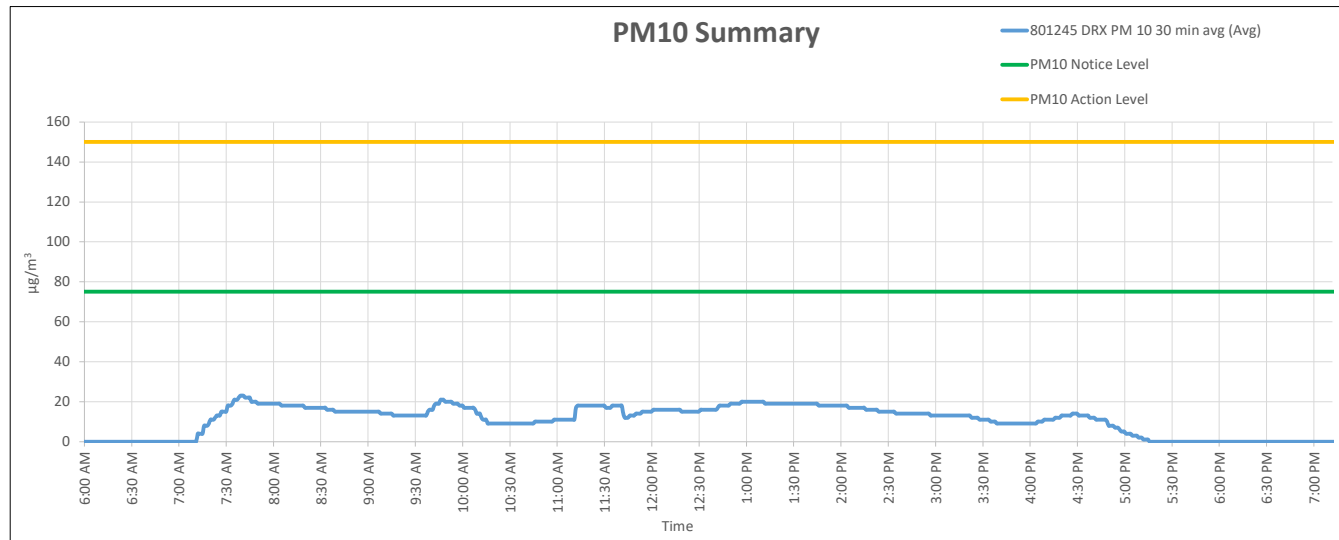
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Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
49911	6:46 AM	5:27 PM	12.34	20.00	11.13	17.00

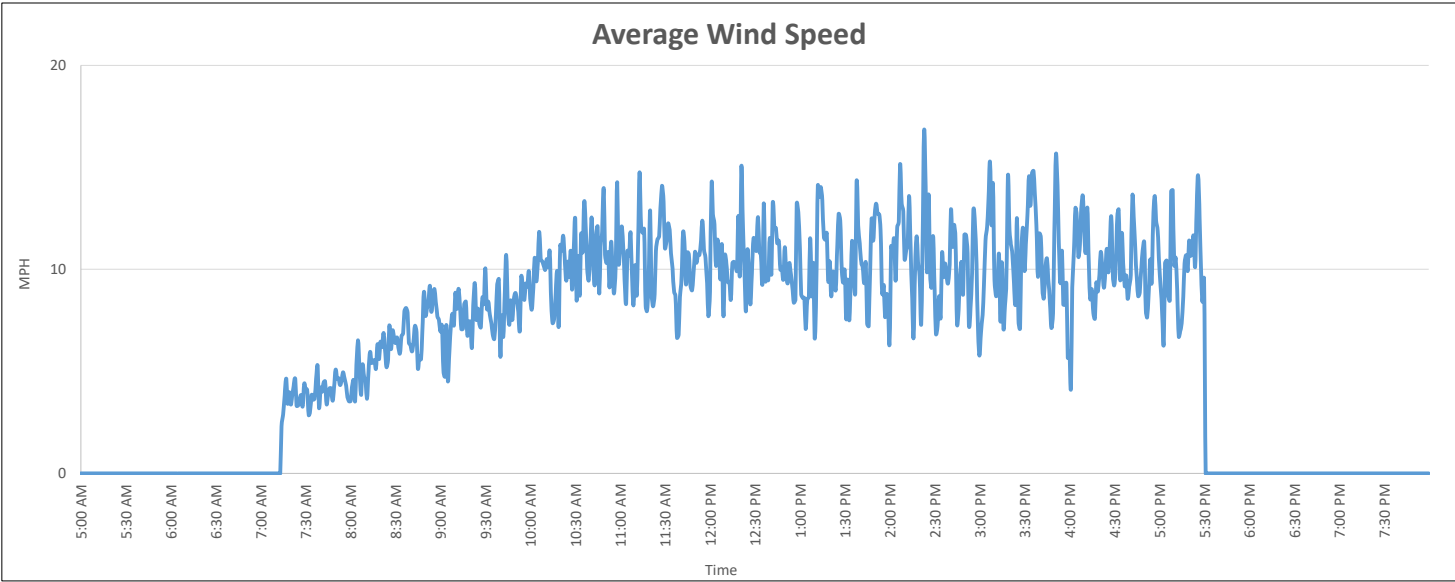
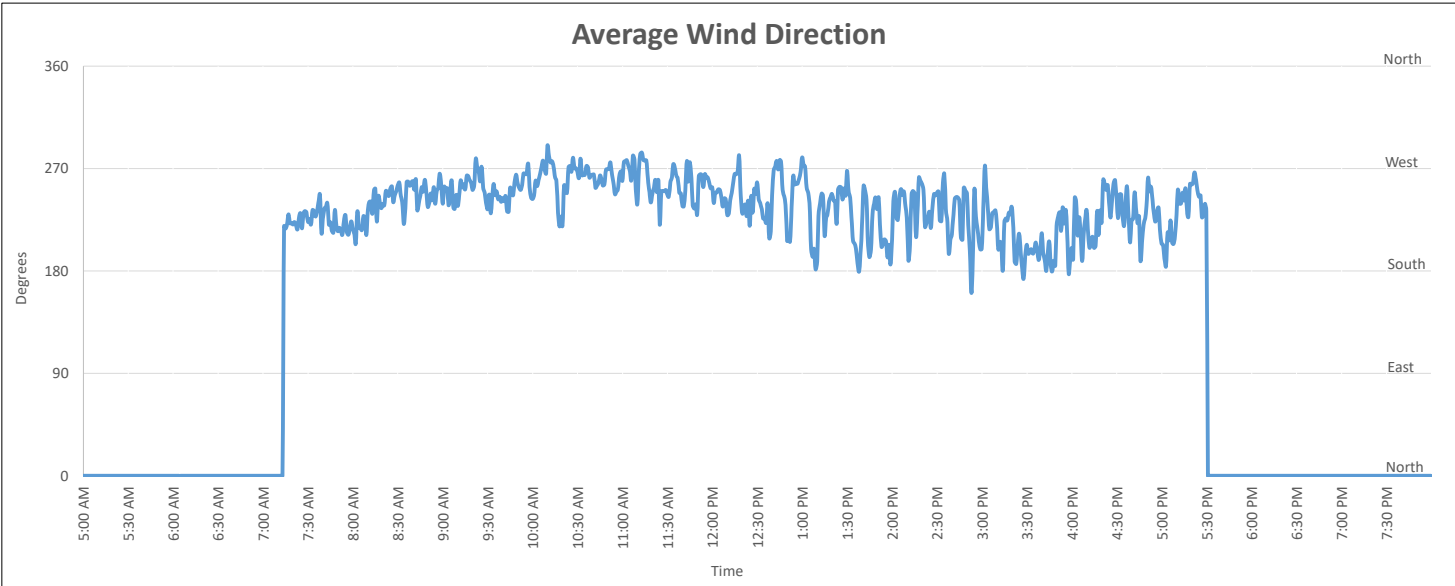


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Wednesday, September 25, 2024

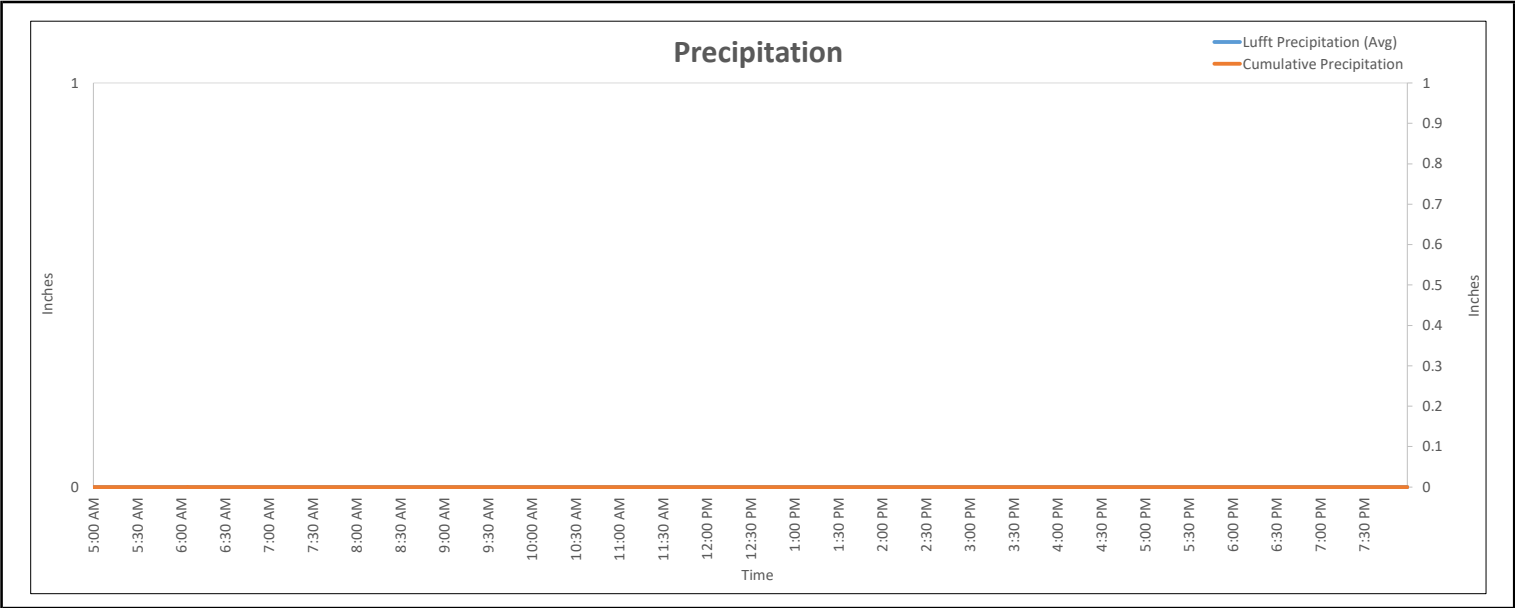
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:12 AM	5:11 PM	14.38	23.00	12.93	20.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Thursday, September 26, 2024

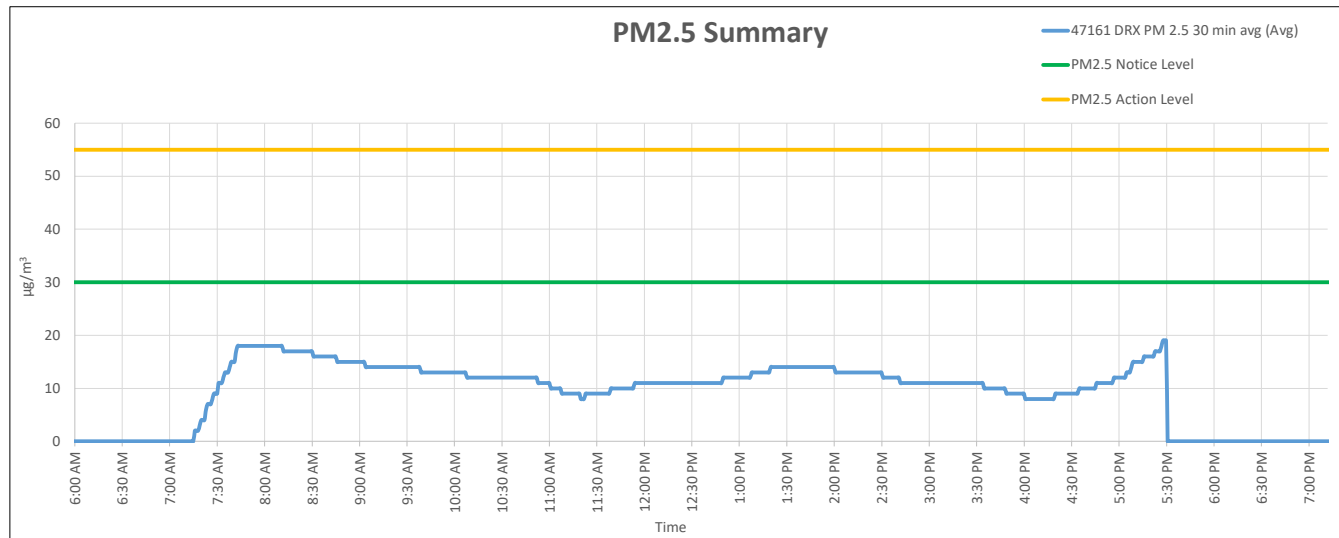
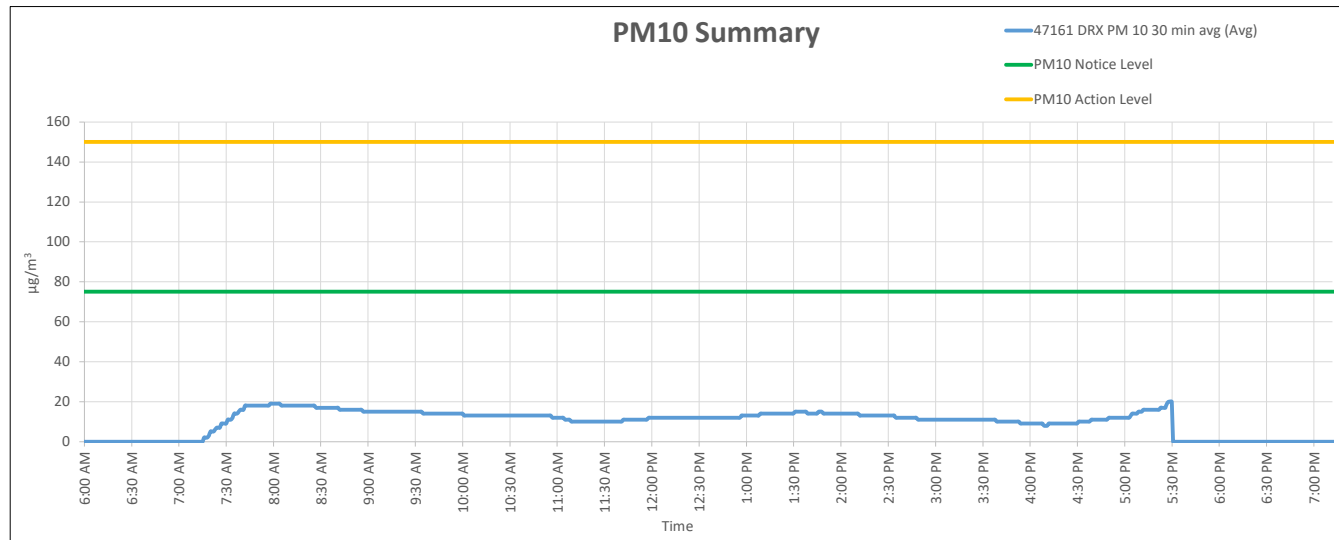


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Thursday, September 26, 2024



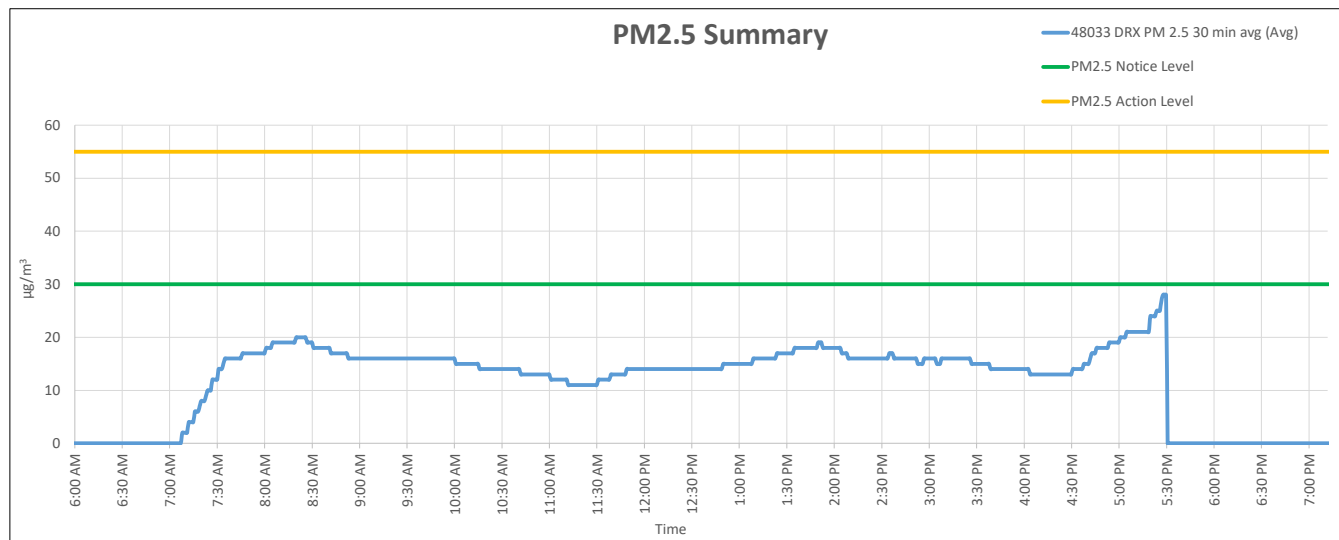
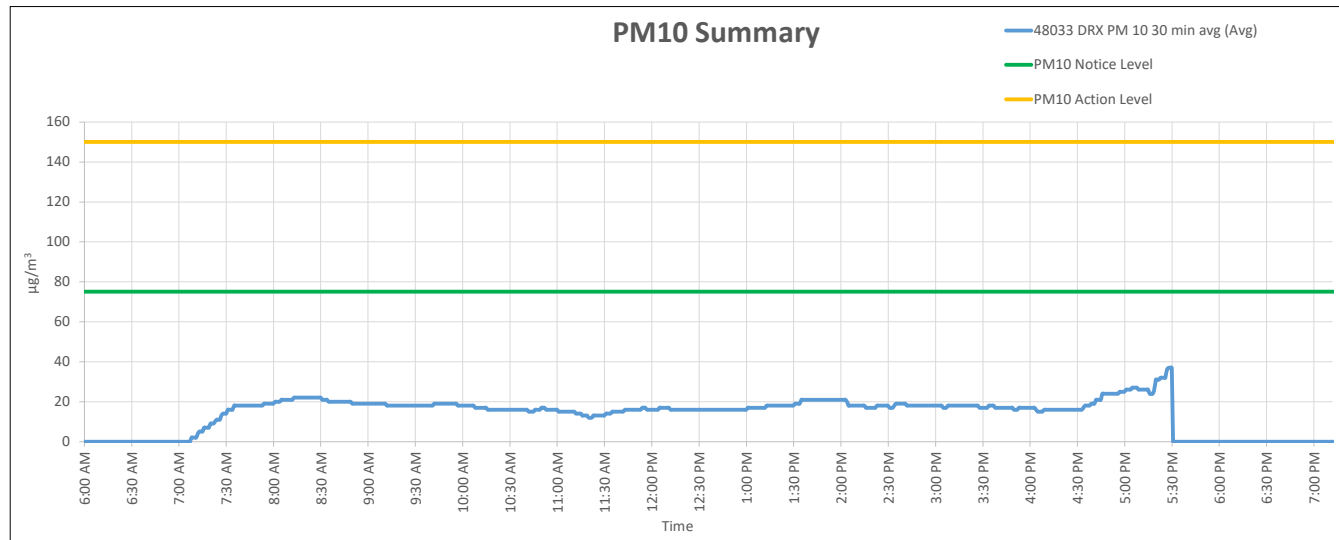
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	7:16 AM	5:30 PM	12.87	20.00	12.25	19.00



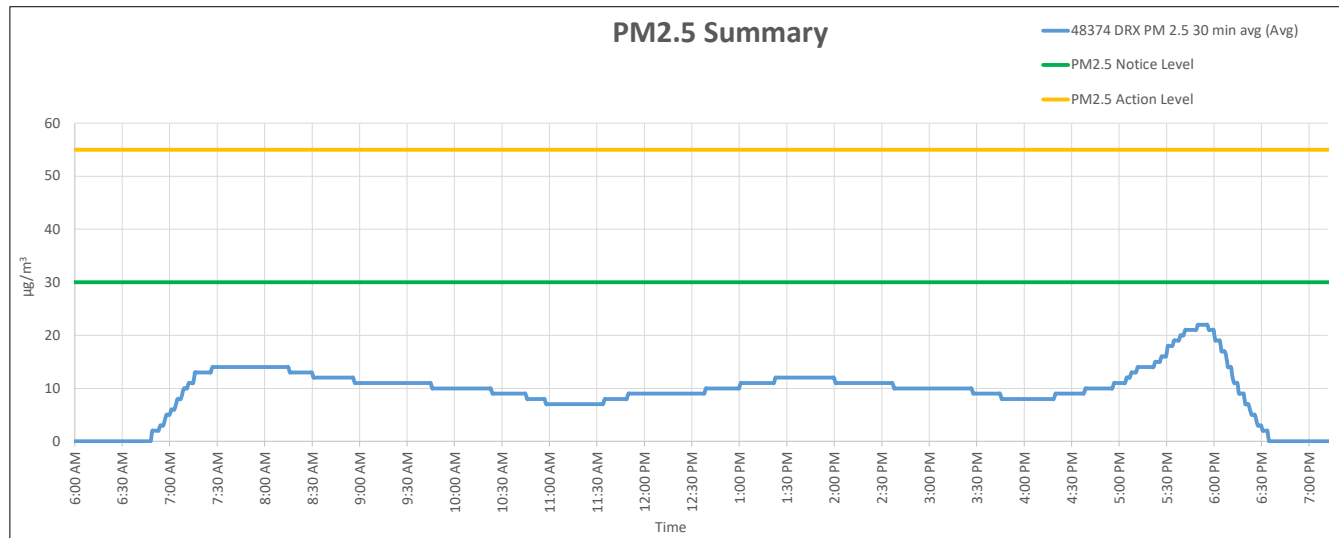
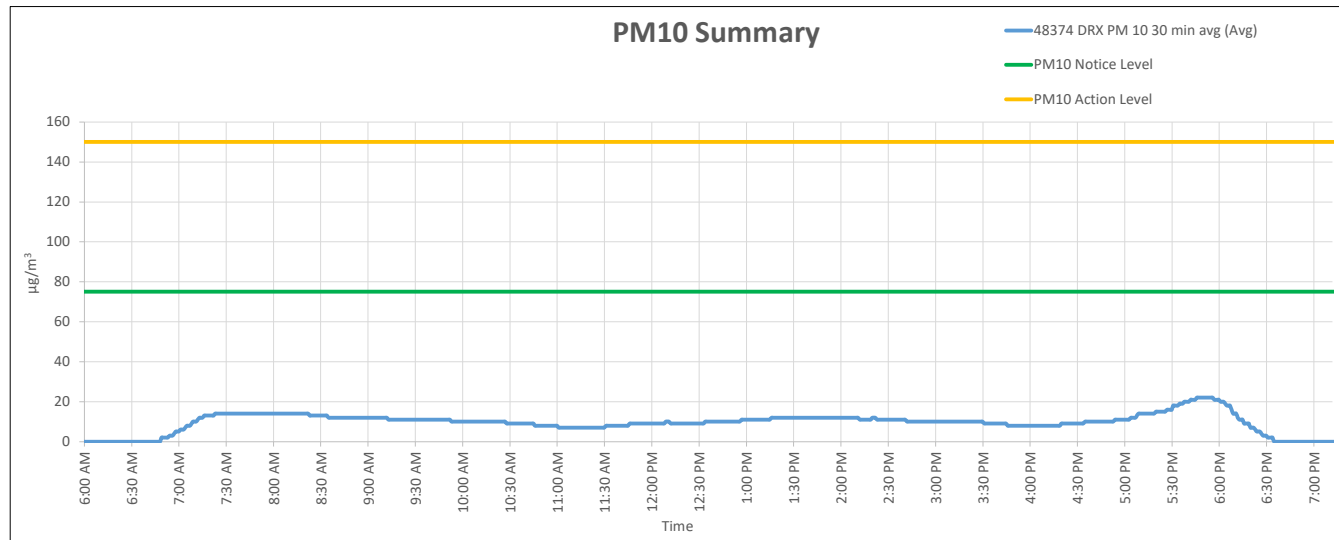
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	7:08 AM	5:30 PM	17.90	37.00	15.37	28.00



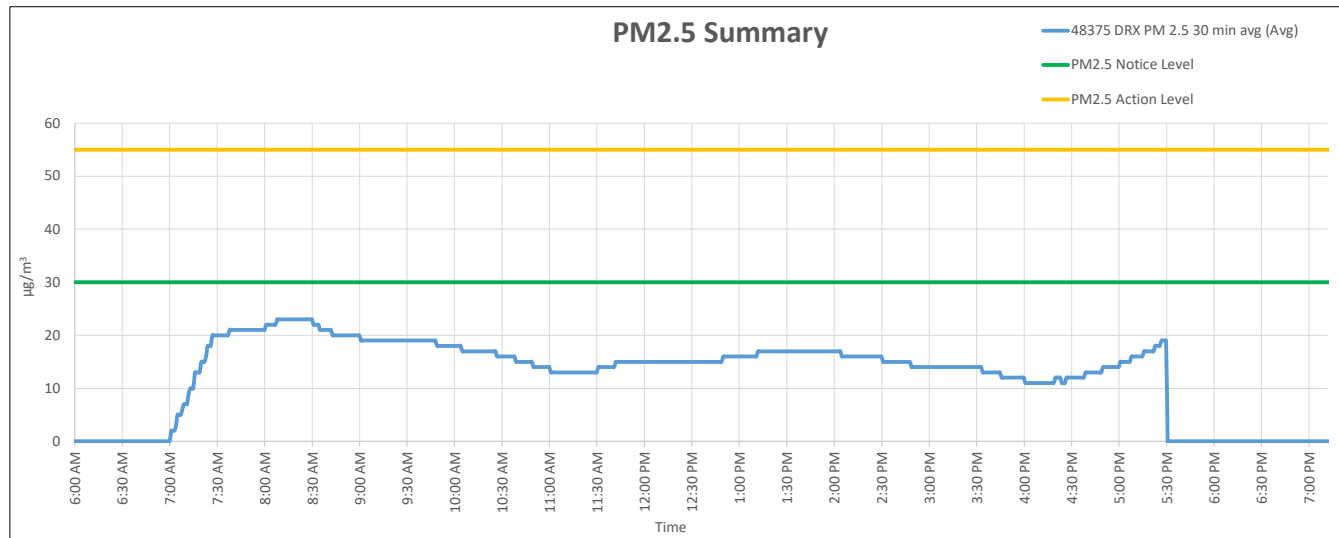
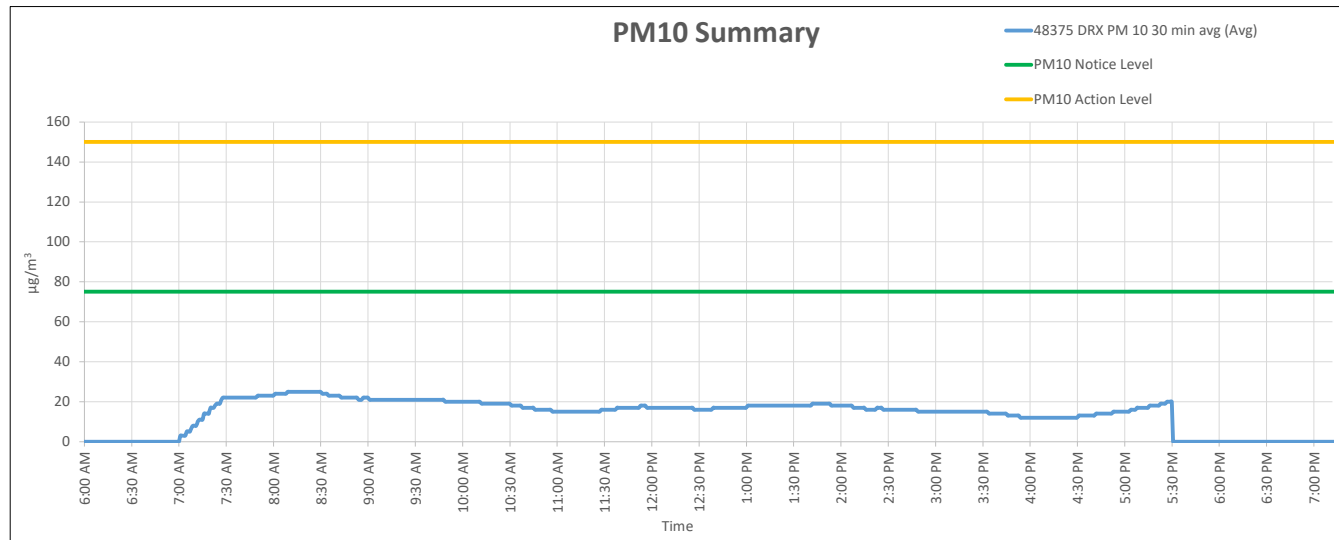
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	6:49 AM	6:34 PM	10.86	22.00	10.69	22.00



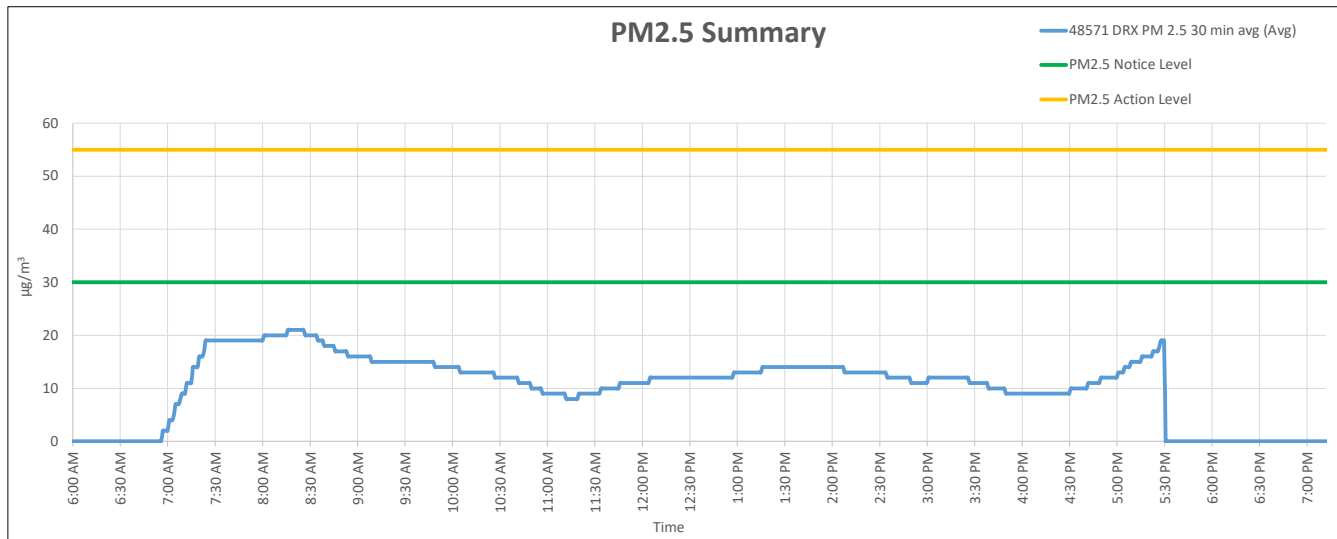
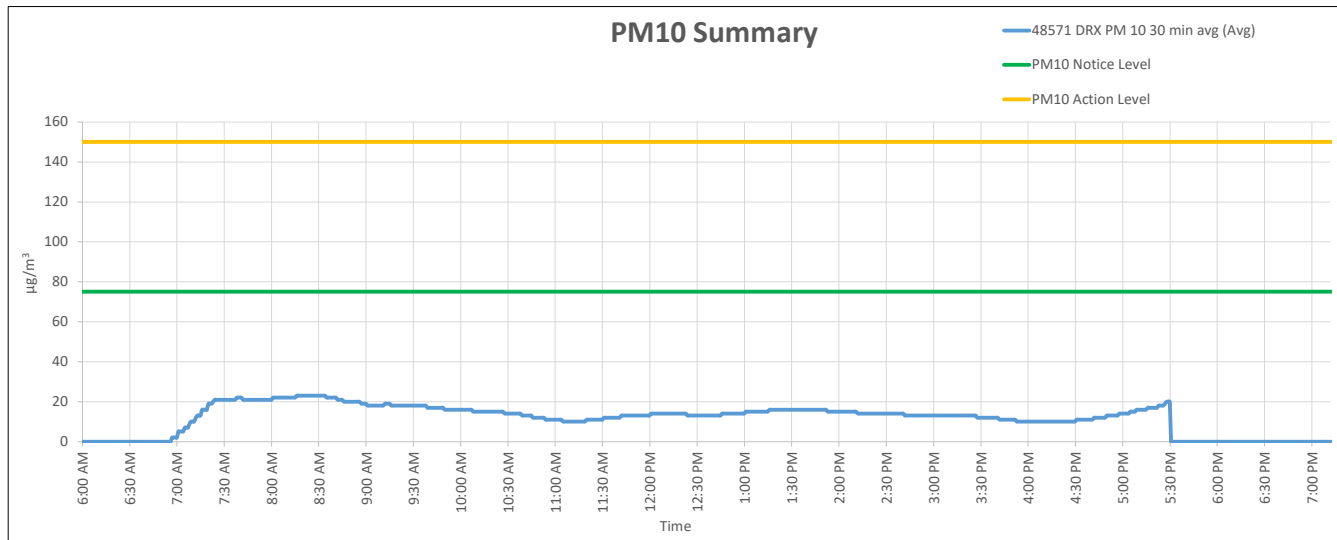
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	5:30 PM	17.42	25.00	15.94	23.00



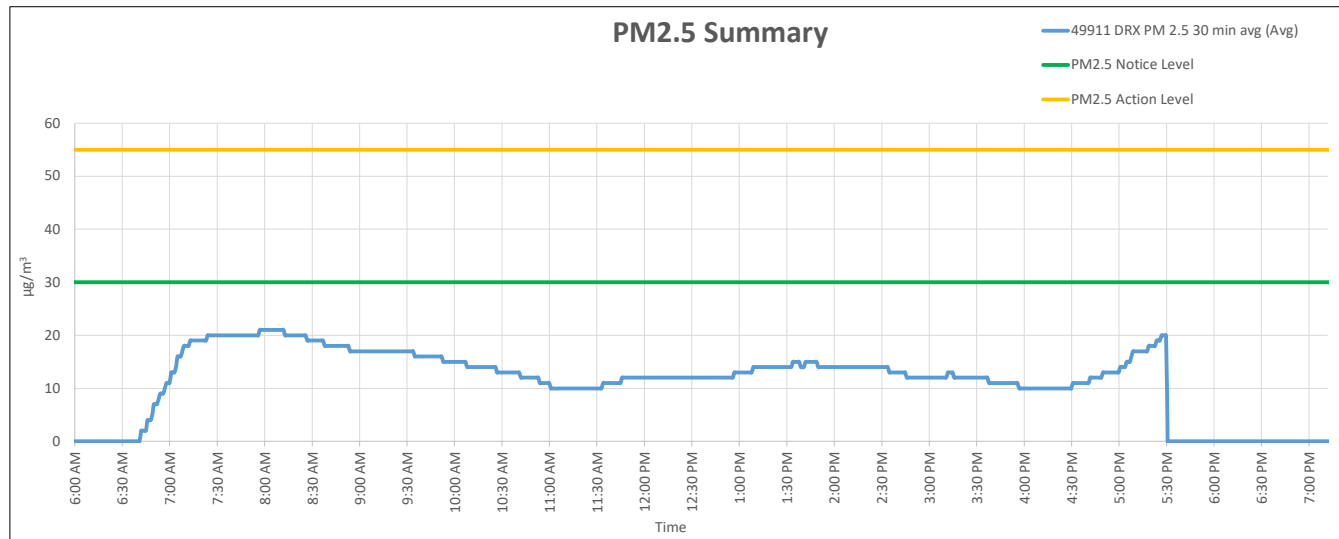
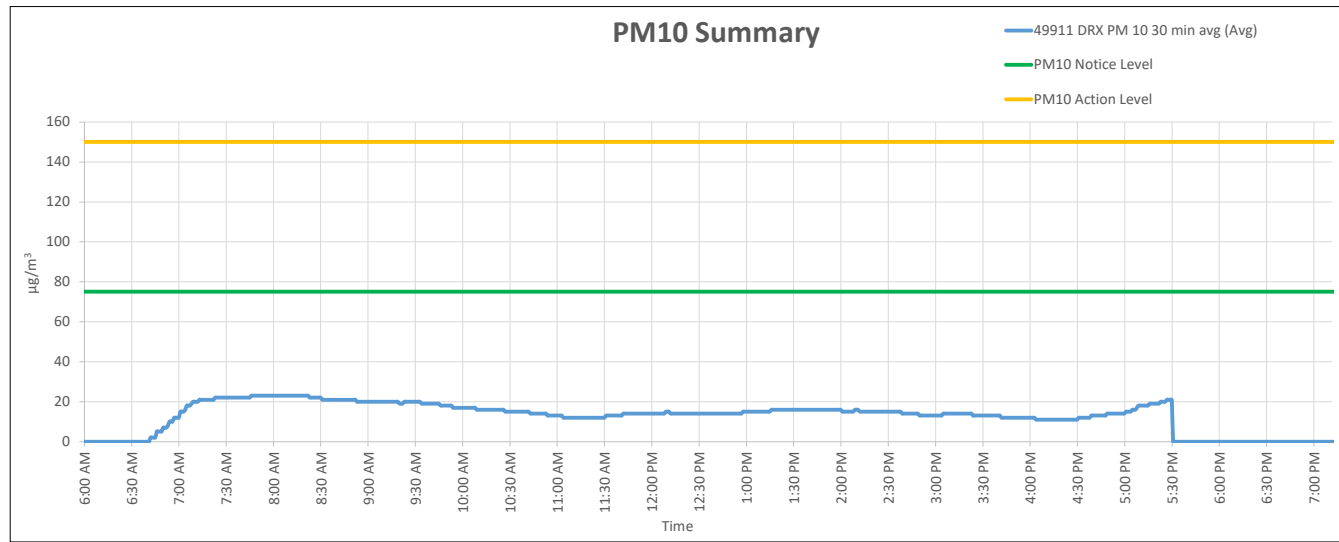
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	6:57 AM	5:30 PM	14.83	23.00	13.08	21.00



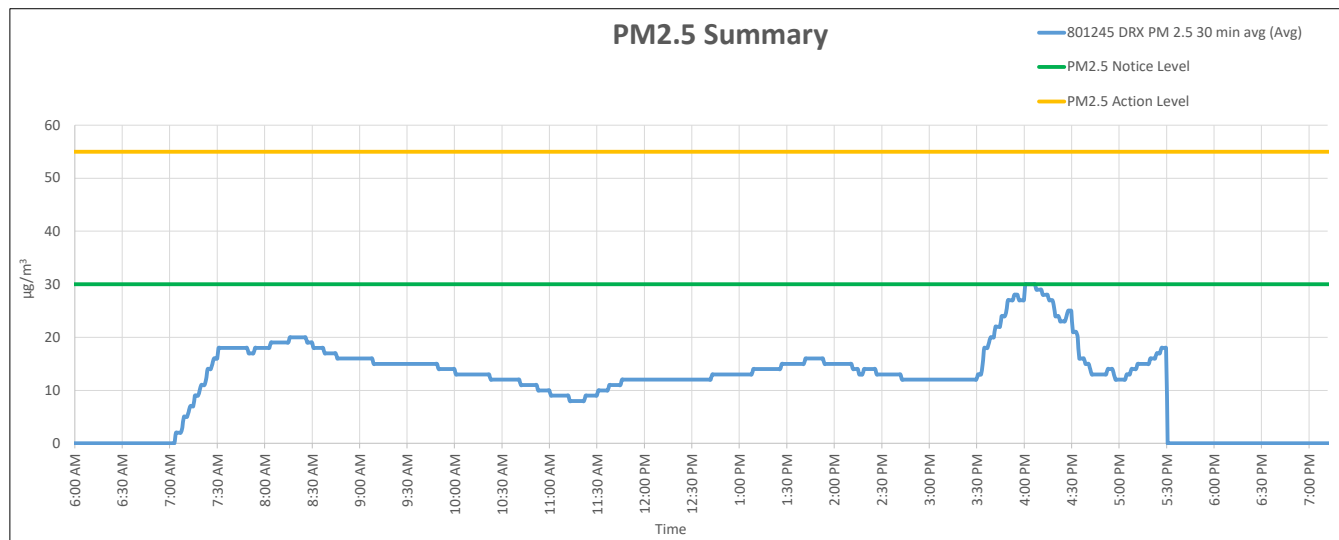
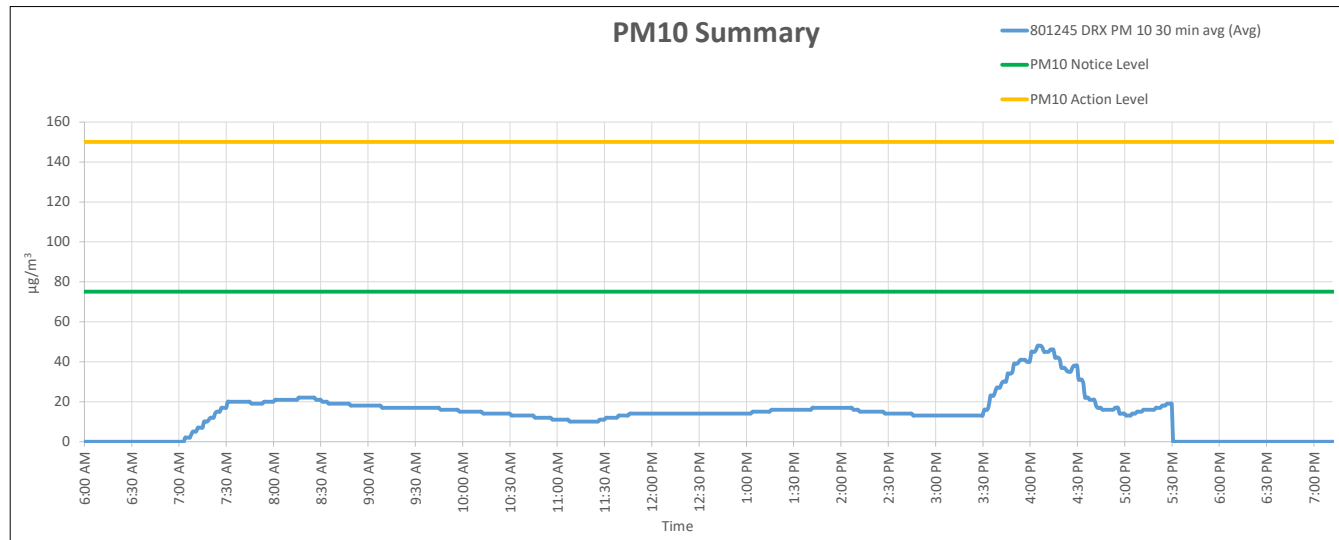
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

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	6:42 AM	5:30 PM	15.81	23.00	13.97	21.00

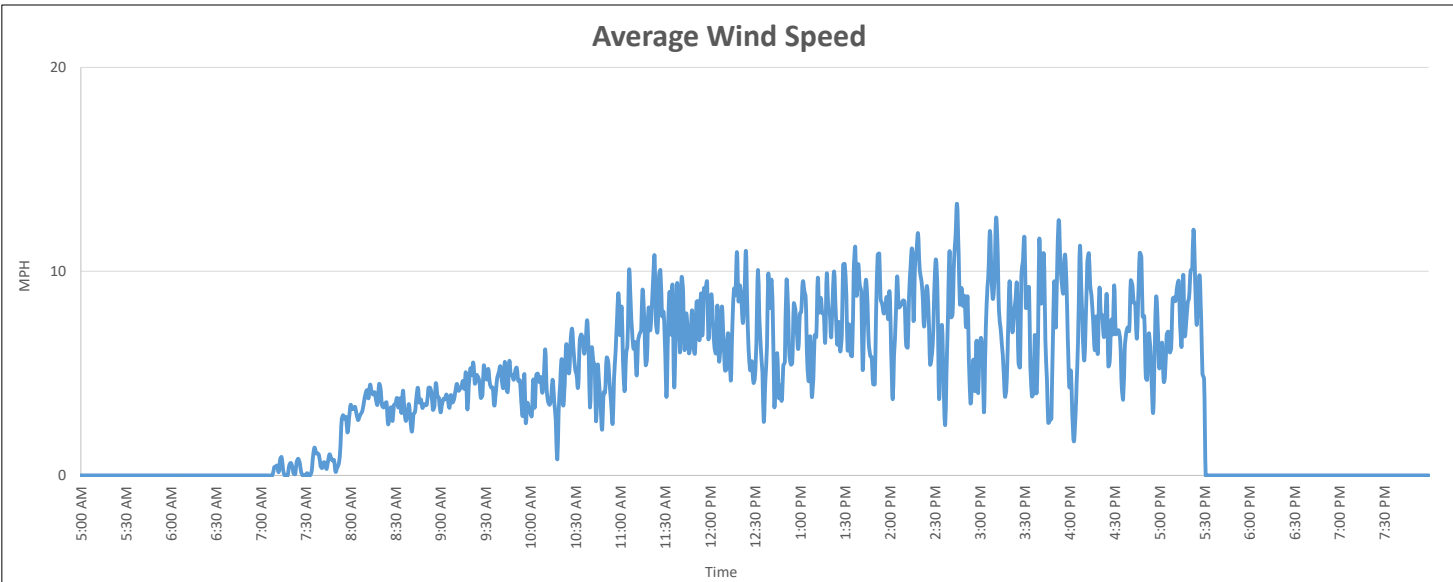
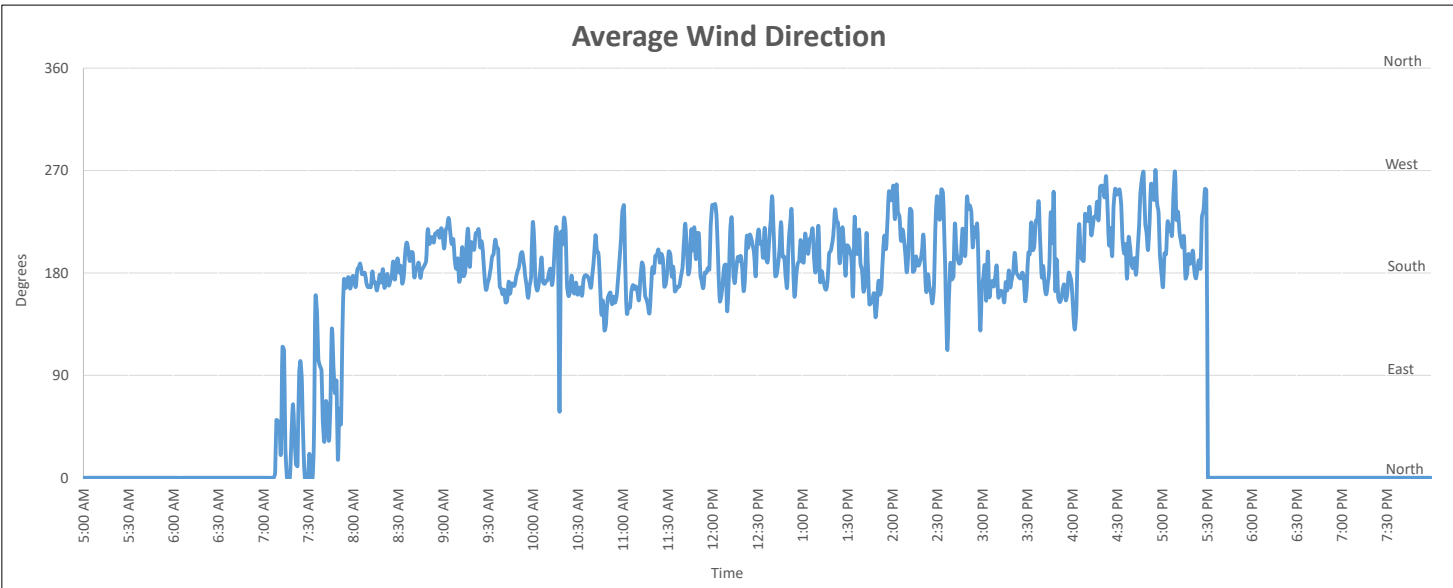


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Thursday, September 26, 2024

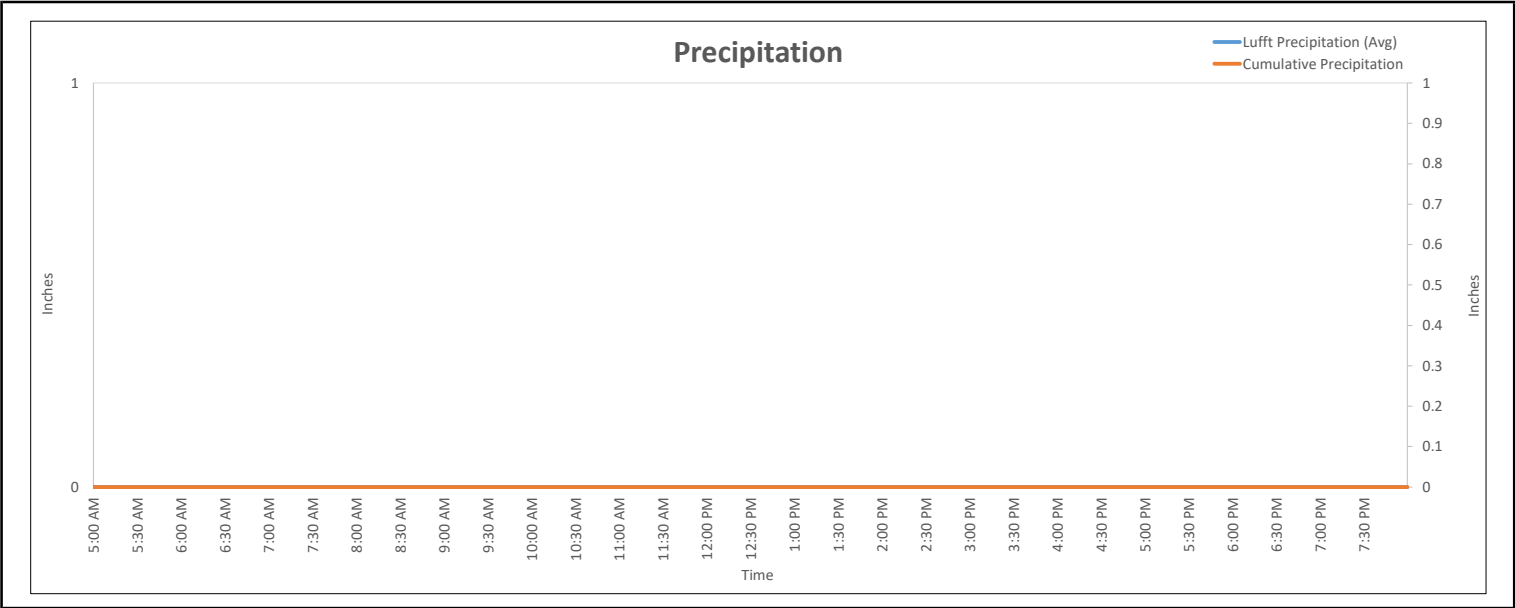
Monitor Number	Start	Stop	Daily PM ₁₀ Average ($\mu\text{g}/\text{m}^3$)	Daily PM ₁₀ Maximum ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Average ($\mu\text{g}/\text{m}^3$)	Daily PM _{2.5} Maximum ($\mu\text{g}/\text{m}^3$)
801245	7:04 AM	5:30 PM	17.37	48.00	14.69	30.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Friday, September 27, 2024

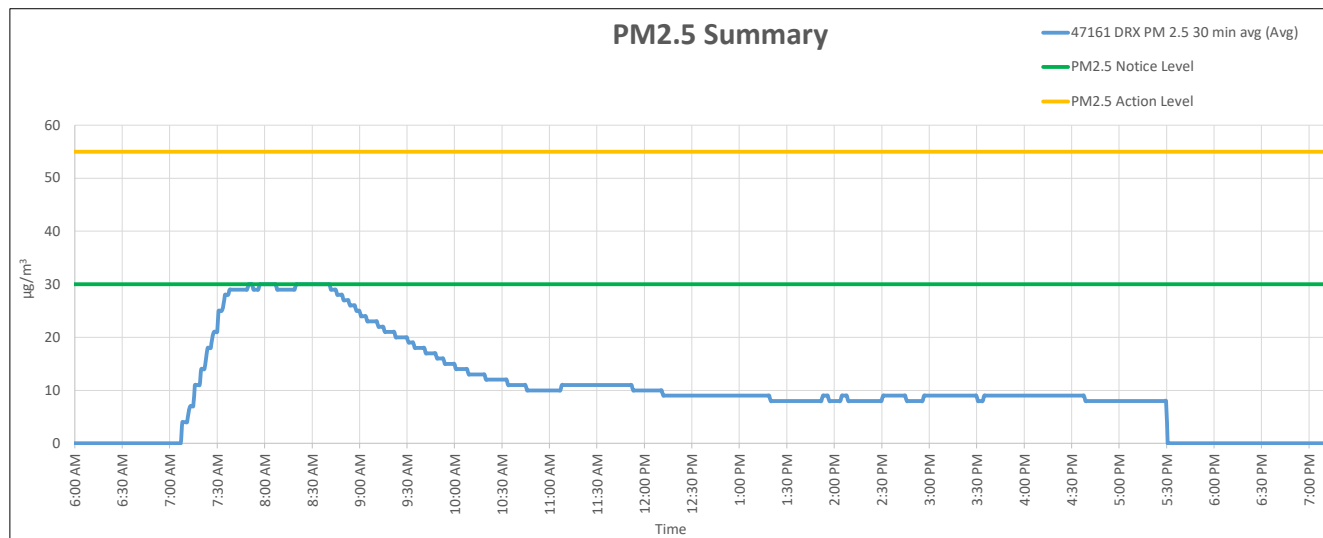
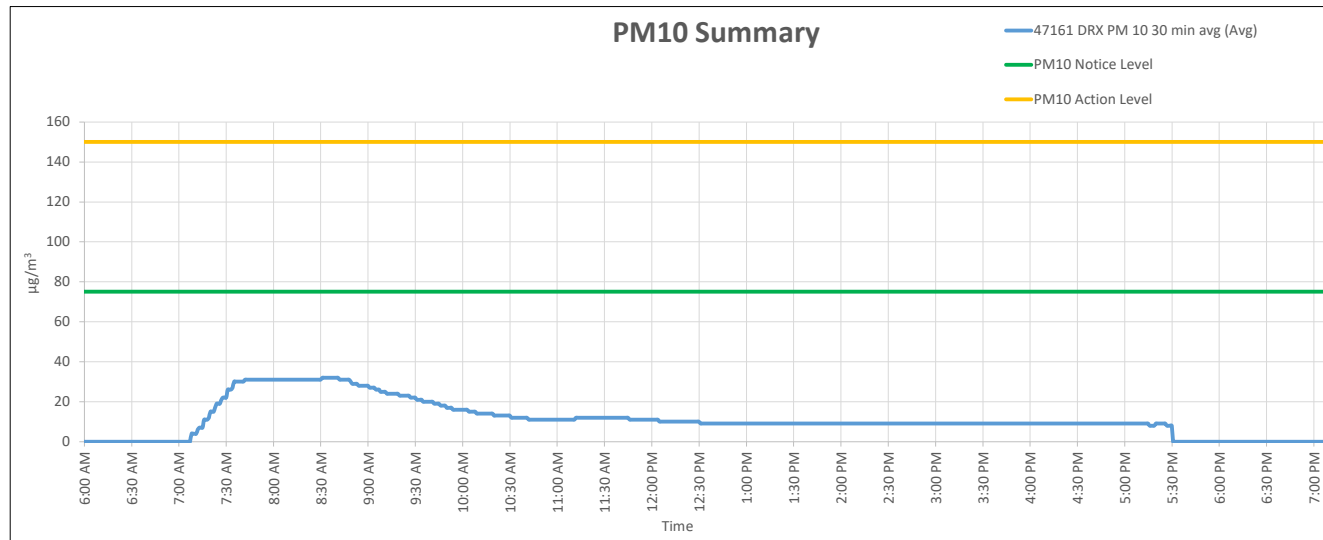


Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Weather Daily Summary
Friday, September 27, 2024



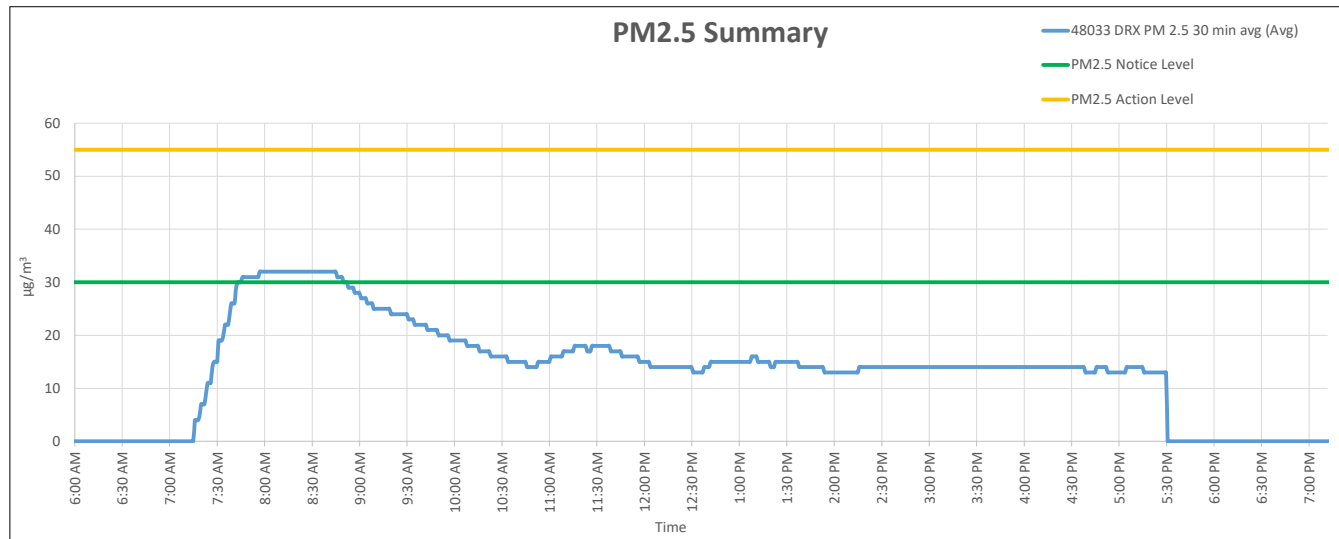
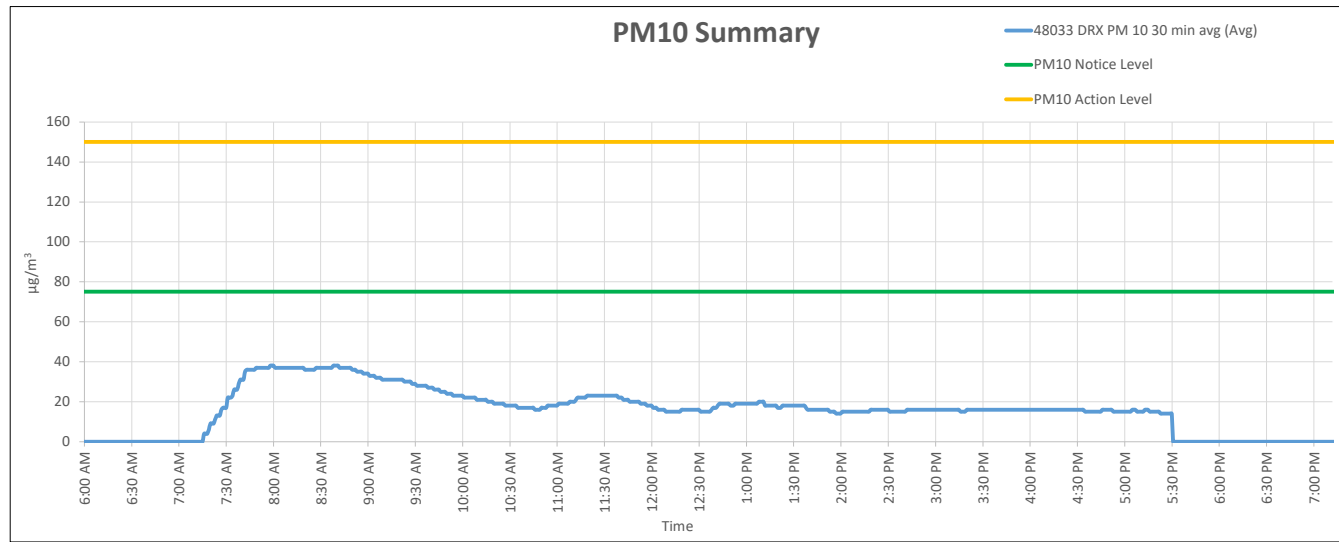
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	7:08 AM	5:30 PM	14.08	32.00	13.22	30.00



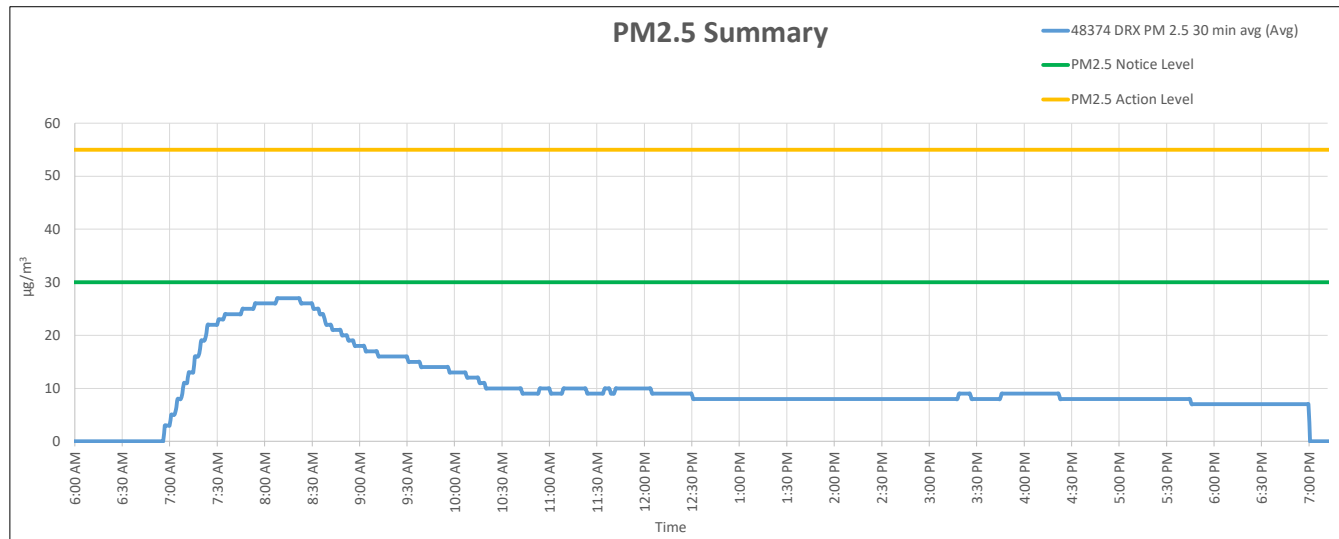
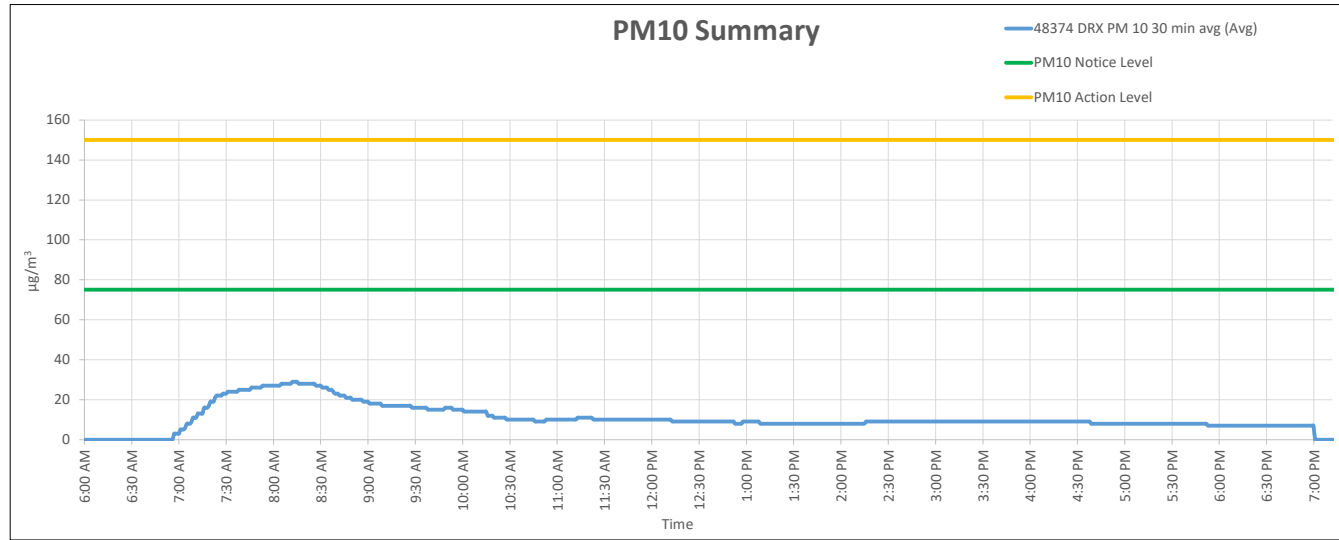
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	7:16 AM	5:30 PM	20.72	38.00	17.62	32.00



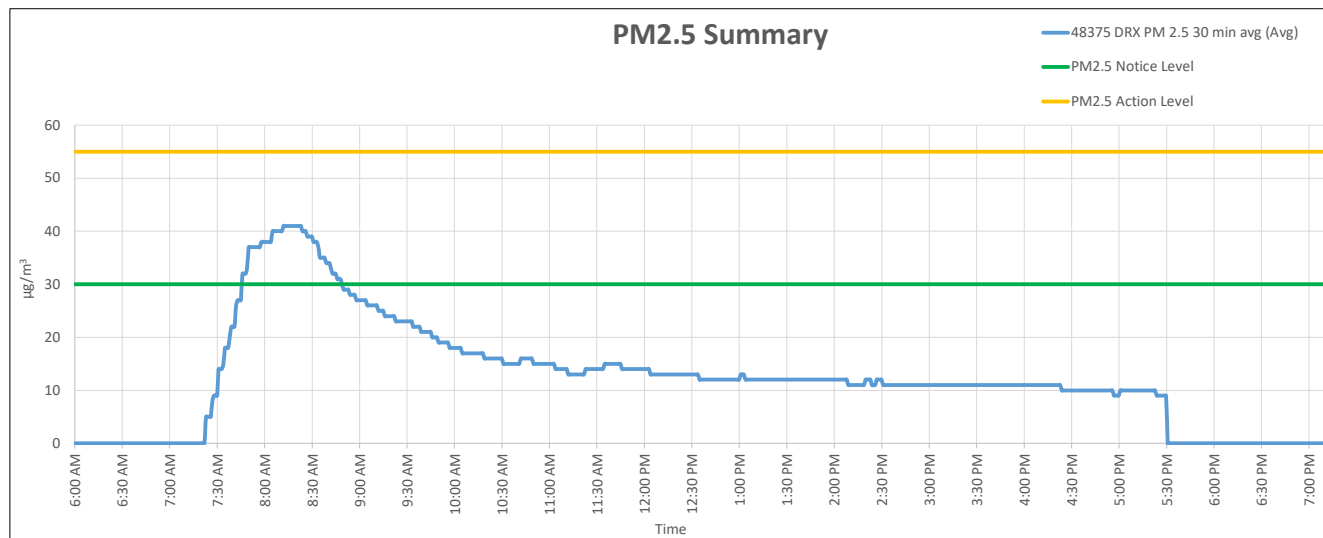
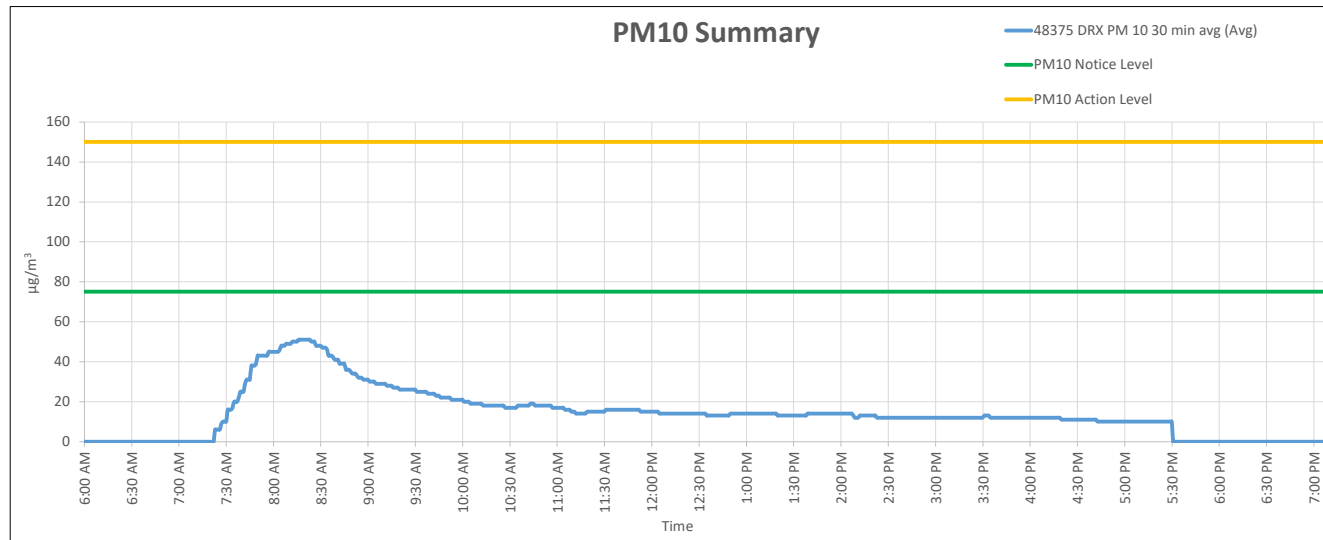
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	6:57 AM	7:00 PM	11.71	29.00	11.20	27.00



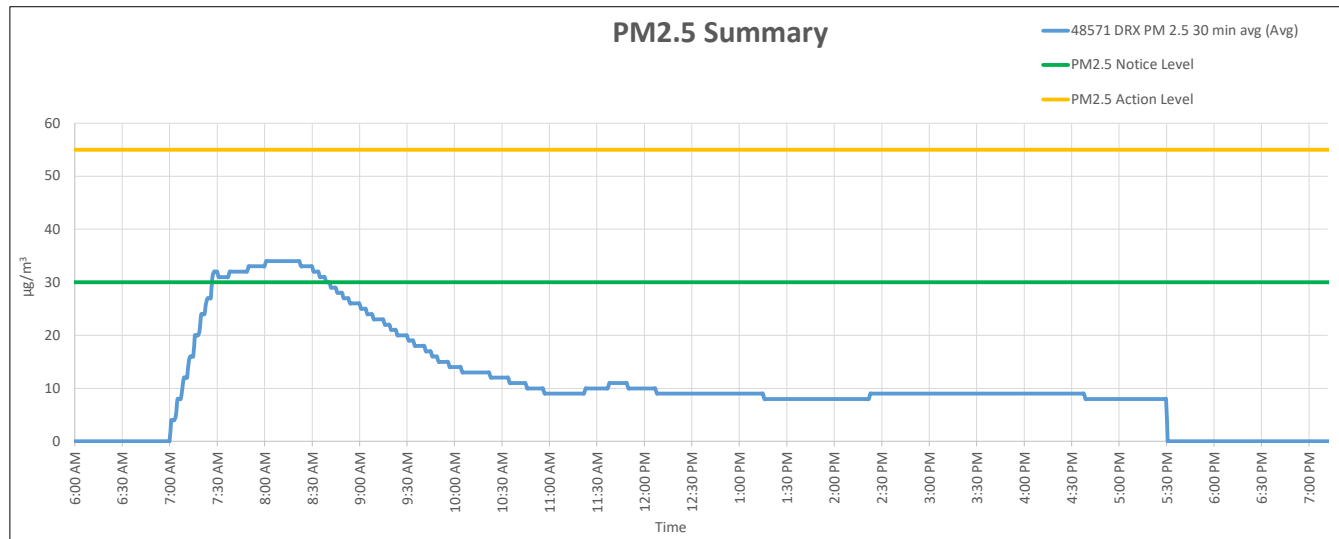
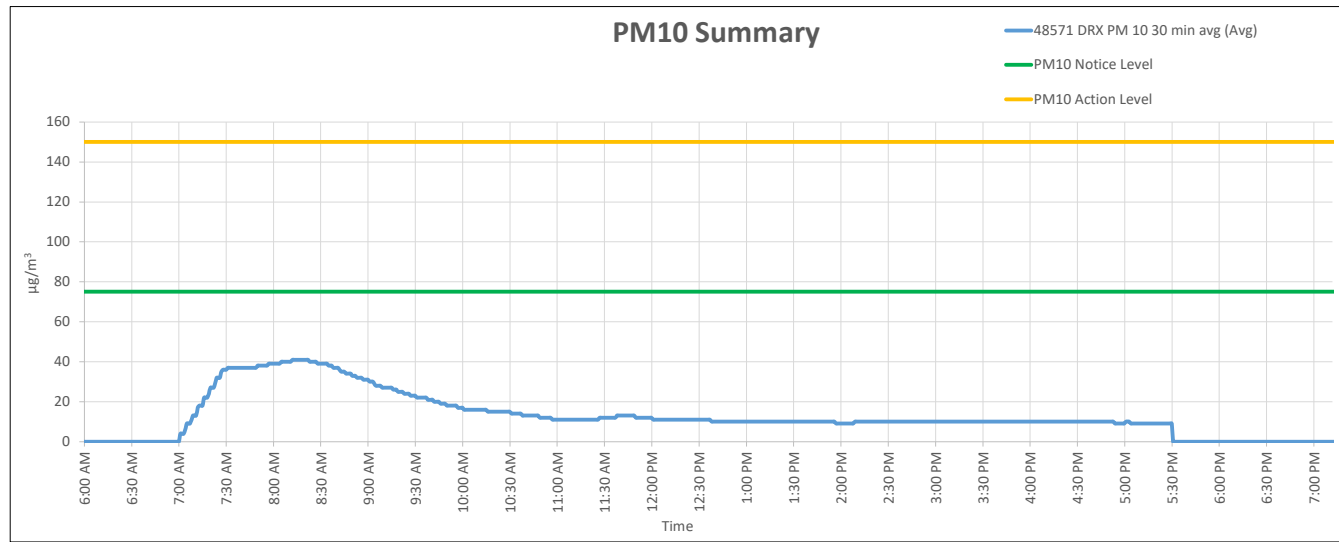
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	7:23 AM	5:30 PM	18.51	51.00	16.34	41.00



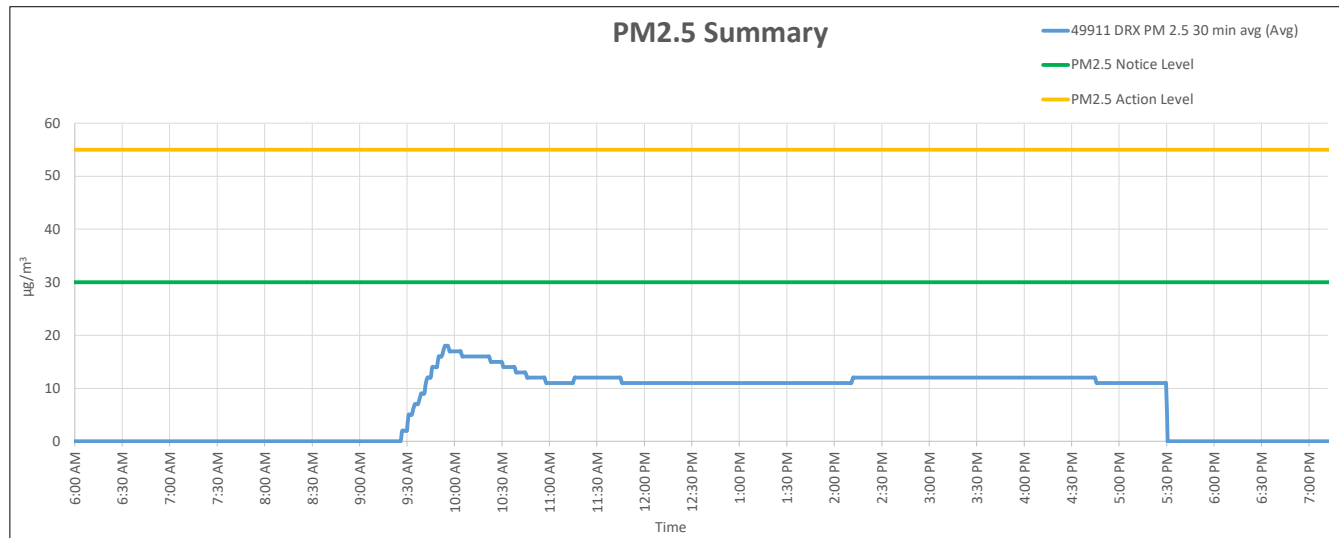
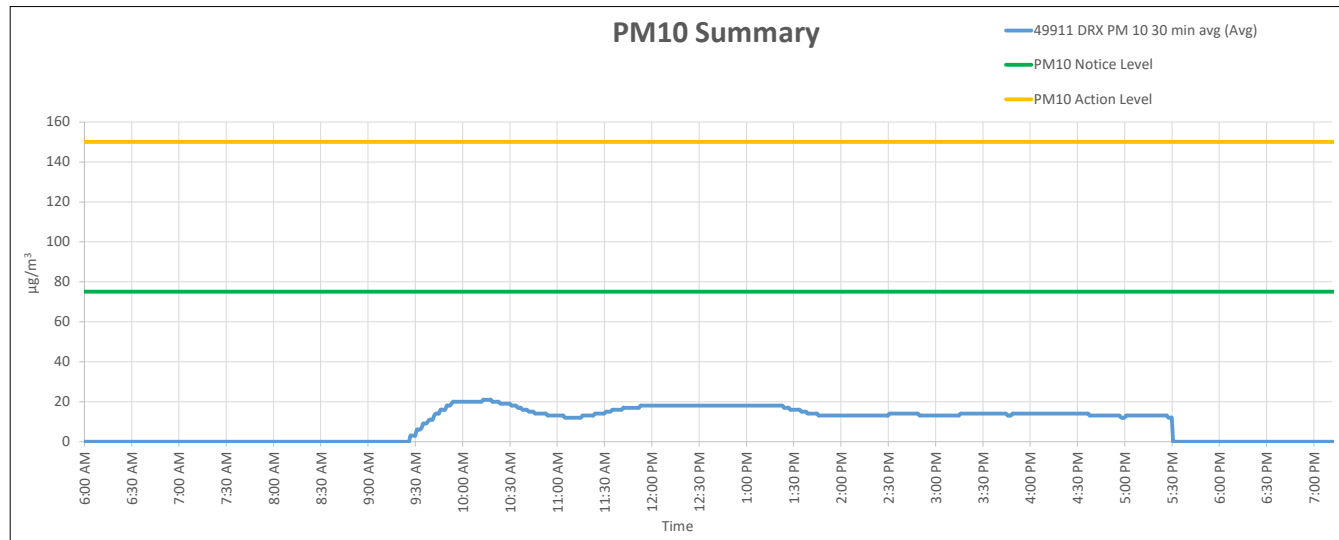
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	7:01 AM	5:30 PM	16.19	41.00	13.79	34.00



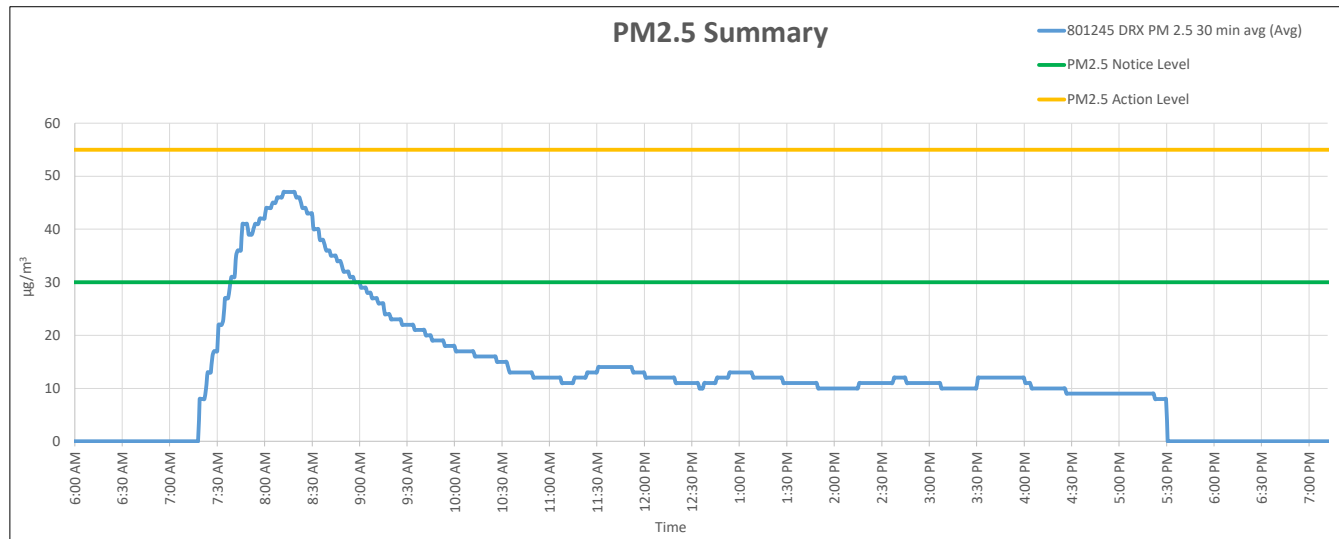
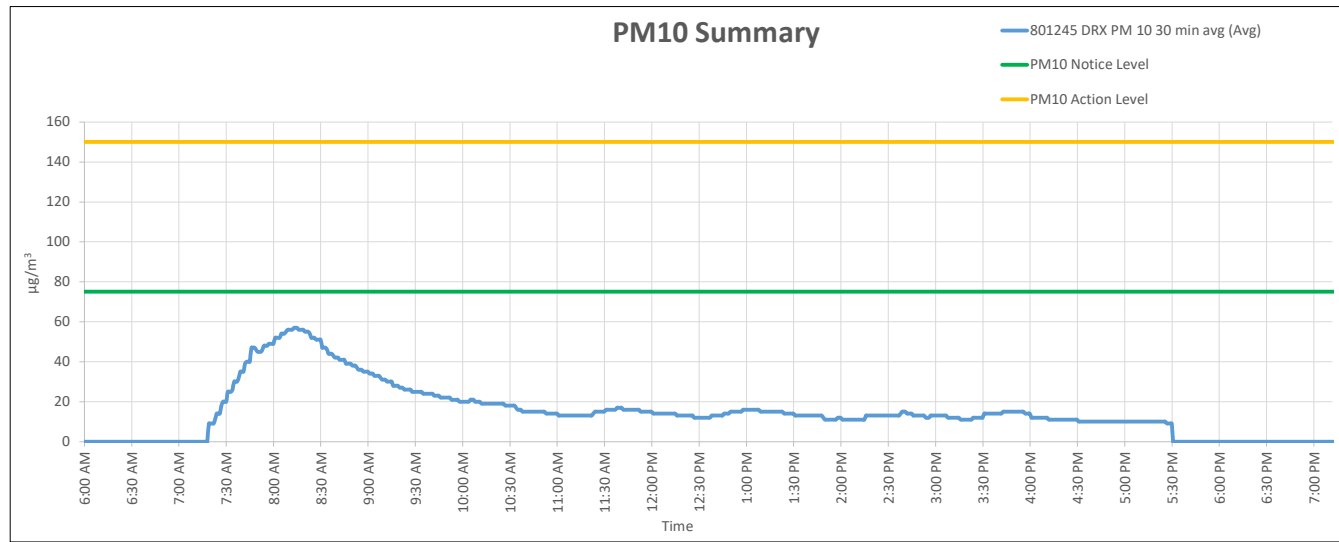
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 2024

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	9:27 AM	5:30 PM	14.93	21.00	11.79	18.00



Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
Friday, September 27, 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 ($\mu\text{g}/\text{m}^3$)
801245	7:19 AM	5:30 PM	19.26	57.00	16.53	47.00



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.

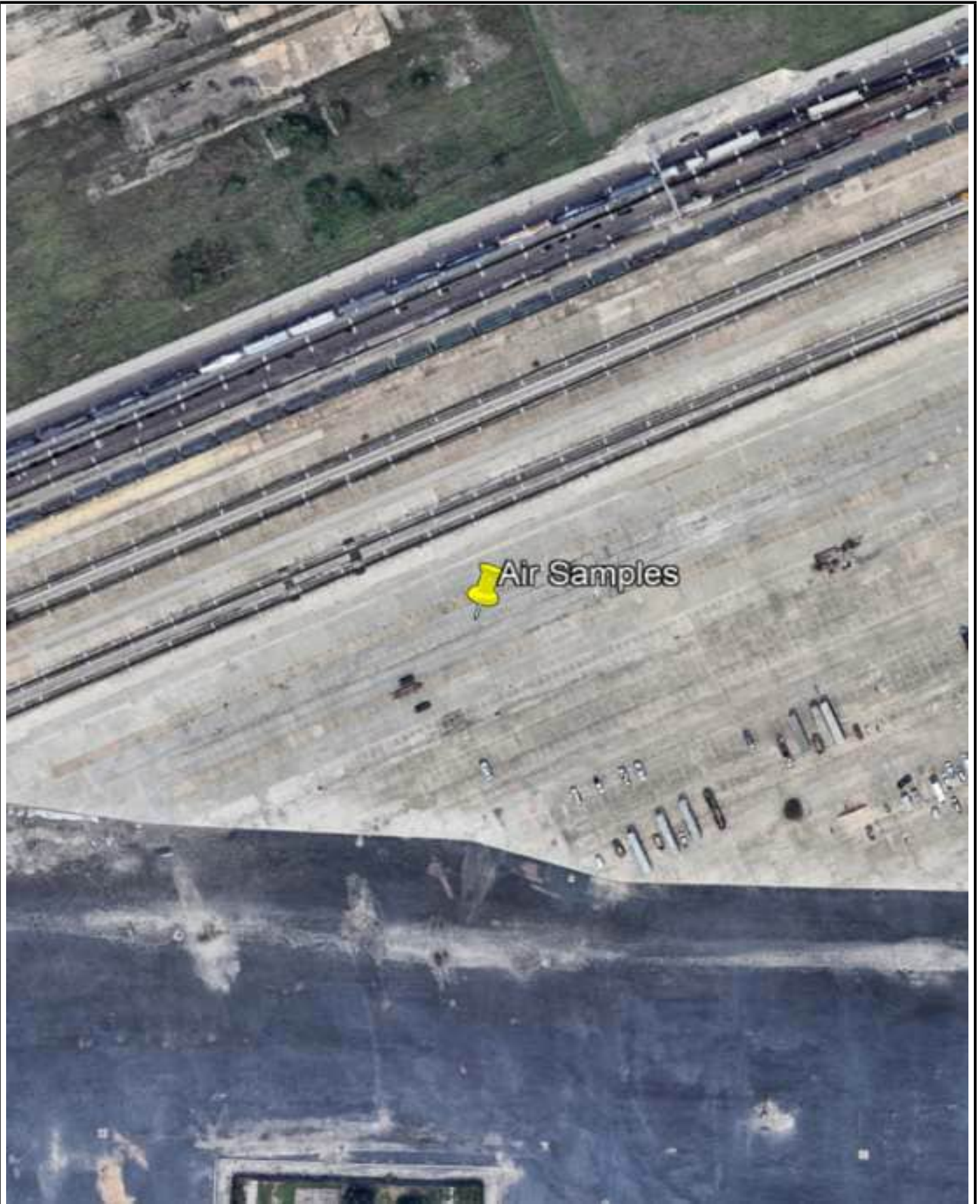
Health-based AMCVs are safe levels at which exposure is unlikely to result in adverse health effects. Airborne levels of these contaminants are considered acceptable if the 12-hour average airborne concentrations were below the applicable AMCV values presented below in Table 4.

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

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)
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 taken on September 19, 2024. Results of these air samples will be provided in the November monthly report.



	UPRR HWPW Focused Excavations PAH and Metal Sample Locations August 14, 2024	AREA MAP
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**Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
September 16, 2024 to September 20, 2024**

Sample ID	Sample Date	Start Time	End Time	Sample Location
24H2449-03	August 14, 2024	8:29 AM	4:00 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS03-08142024	Acenaphthene	ND	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	ND	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	ND	0.11 µg/m3	NE	NE
	2-Methylnaphthalene	ND	0.11 µg/m3	NE	NE
	Naphthalene	ND	0.27 µg/m3	500 µg/m ³	50 µg/m ³
	Perylene	ND	0.11 µg/m3	NE	NE
	Phenanthrene	ND	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
24H2449-04	August 14, 2024	8:29 AM	4:00 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS04-08142024	Acenaphthene	ND	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	ND	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	ND	0.11 µg/m3	NE	NE
	2-Methylnaphthalene	ND	0.11 µg/m3	NE	NE
	Naphthalene	ND	0.28 µg/m3	500 µg/m ³	50 µg/m ³
	Perylene	ND	0.11 µg/m3	NE	NE
	Phenanthrene	ND	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

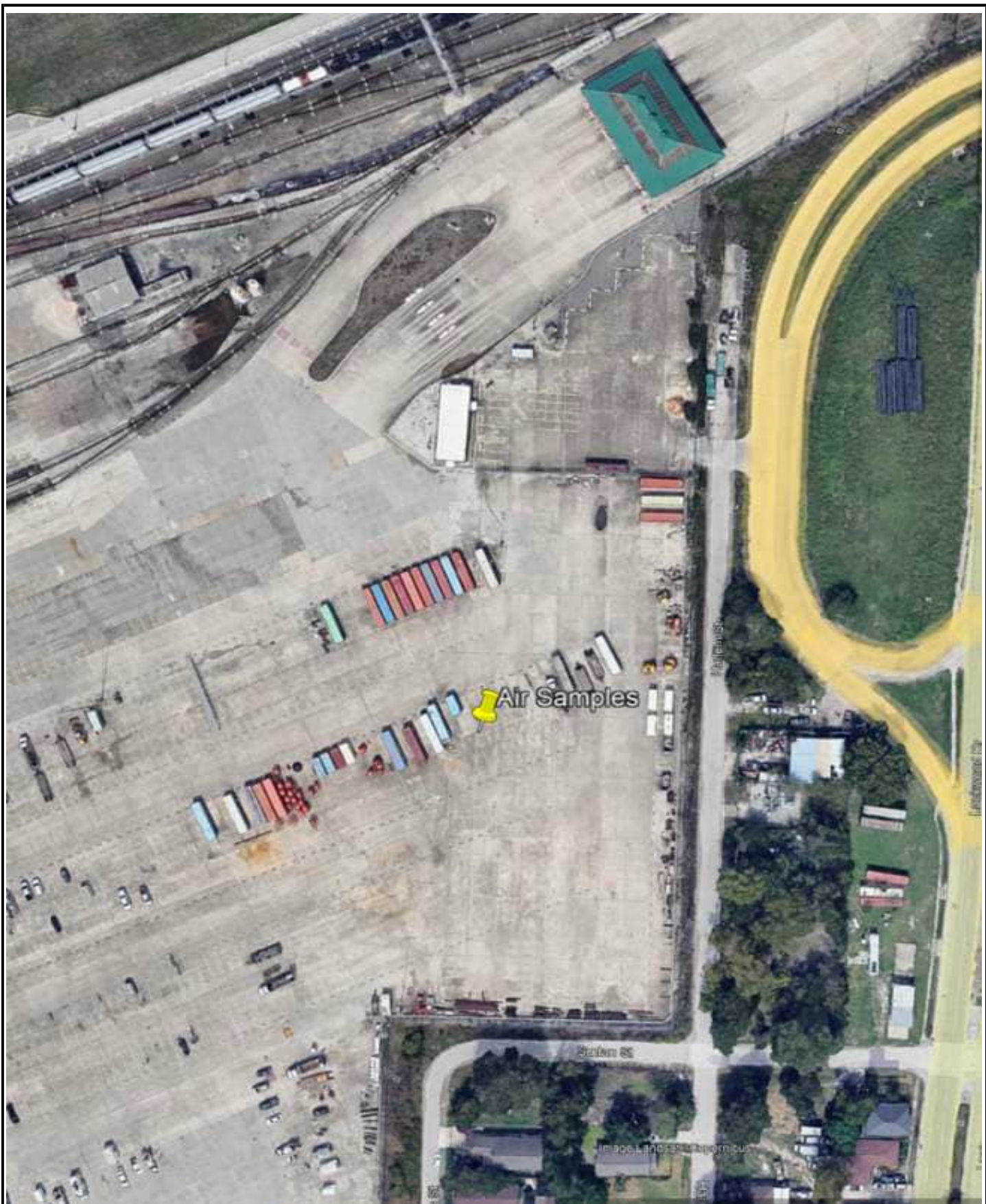
Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
September 16, 2024 to September 20, 2024

Sample ID	Sample Date	Start Time	End Time	Sample Location
24H2449-01	August 14, 2024	8:29 AM	4:00 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA-1620-AS01-08142024	Arsenic	ND	1.2 µg/m3
	Lead	ND	1.2 µg/m3

Sample ID	Sample Date	Start Time	End Time	Sample Location
24H2449-02	August 14, 2024	8:29 AM	4:00 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA-1620-AS02-08142024	Arsenic	ND	1.2 µg/m3
	Lead	ND	1.2 µg/m3



UPRR HWPW Focused Excavations
PAH and Metal Sample Locations
August 14, 2024

AREA MAP

Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
September 16, 2024 to September 20, 2024

Sample ID	Sample Date	Start Time	End Time	Sample Location
24I2880-03	September 18, 2024	8:01 AM	4:11 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS03-09182024	Acenaphthene	ND	0.098 µg/m3	100 µg/m ³	10 µg/m ³
	Acenaphthylene	ND	0.098 µg/m3	100 µg/m ³	10 µg/m ³
	Anthracene	ND	0.098 µg/m3	1 µg/m ³	0.067 µg/m ³
	Benzo(a)anthracene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(a)pyrene	ND	0.098 µg/m3	NE	0.017 µg/m ³
	Benzo(b)fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(e)pyrene	ND	0.098 µg/m3	NE	NE
	Benzo(g,h,i)perylene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(k)fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Chrysene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Dibenz(a,h)anthracene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Fluorene	ND	0.098 µg/m3	10 µg/m ³	1 µg/m ³
	Indeno(1,2,3-cd)pyrene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	1-Methylnaphthalene	ND	0.098 µg/m3	NE	NE
	2-Methylnaphthalene	ND	0.098 µg/m3	NE	NE
	Naphthalene	ND	0.25 µg/m3	500 µg/m ³	50 µg/m ³
	Perylene	ND	0.098 µg/m3	NE	NE
	Phenanthrene	ND	0.098 µg/m3	8 µg/m ³	0.8 µg/m ³
	Pyrene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³

Sample ID	Sample Date	Start Time	End Time	Sample Location
24I2880-04	=D10	8:01 AM	4:13 PM	See Map

Field Sample	Analyte	Results	Reporting Level	Short Term AMCV	Long-Term AMCV
AA-1620-AS04-09182024	Acenaphthene	ND	0.098 µg/m3	100 µg/m ³	10 µg/m ³
	Acenaphthylene	ND	0.098 µg/m3	100 µg/m ³	10 µg/m ³
	Anthracene	ND	0.098 µg/m3	1 µg/m ³	0.067 µg/m ³
	Benzo(a)anthracene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(a)pyrene	ND	0.098 µg/m3	NE	0.017 µg/m ³
	Benzo(b)fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(e)pyrene	ND	0.098 µg/m3	NE	NE
	Benzo(g,h,i)perylene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Benzo(k)fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Chrysene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Dibenz(a,h)anthracene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Fluoranthene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	Fluorene	ND	0.098 µg/m3	10 µg/m ³	1 µg/m ³
	Indeno(1,2,3-cd)pyrene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³
	1-Methylnaphthalene	ND	0.098 µg/m3	NE	NE
	2-Methylnaphthalene	ND	0.098 µg/m3	NE	NE
	Naphthalene	ND	0.25 µg/m3	500 µg/m ³	50 µg/m ³
	Perylene	ND	0.098 µg/m3	NE	NE
	Phenanthrene	ND	0.098 µg/m3	8 µg/m ³	0.8 µg/m ³
	Pyrene	ND	0.098 µg/m3	0.5 µg/m ³	0.05 µg/m ³

Union Pacific Railroad
Houston Wood Preserving Works Site
Houston Texas
Air Monitoring Values
September 16, 2024 to September 20, 2024

Sample ID	Sample Date	Start Time	End Time	Sample Location
24I2880-01	September 18, 2024	8:00 AM	4:10 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA.1620-A503-20240506	Arsenic	ND	1.2 µg/m3
	Lead	ND	1.2 µg/m3

Sample ID	Sample Date	Start Time	End Time	Sample Location
24E1038-02	September 18, 2024	8:00 AM	4:11 PM	See Map

Field Sample	Analyte	Results	Reporting Level
AA.1620-A504-20240506	Arsenic	ND	1.2 µg/m3
	Lead	ND	1.2 µg/m3



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.