United States Environmental Protection Agency

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	02/13/2024	
Media Program:	Air	
Regulatory Program(s):	Title V, NESHAP, Texas SIP	
Company Name:	**The Goodyear Tire & Rubber Company**	
Facility Name:	**The Goodyear Tire & Rubber Company Beaumont Chemical Plant**	
Facility Physical Location:	11357 IH 10 E	
(city, state, zip code)	Beaumont, TX, 77705	
Mailing address:	11357 IH 10 E	
(city, state, zip code)	Beaumont, TX, 77705	
County/Parish:	Jefferson County	
Facility Phone Number:	(409) 794-5313	
Facility Contact:	Oliver Dugas	Environmental Manager
	Oliver_Dugas@goodyear.com	
FRS Number:	110062118505	
Identification/Permit Number:	RN102561925	
Media Identifier Number:	TX0000004824500016	
NAICS:	325211, 325212, 325311	
SIC:	2822	

Personnel participating in inspection:		
Nathan Hicks	OECA AED	Physical Scientist
Daniel Hoyt	OECA AED	Environmental Engineer
Philip Meyers	NEIC	Mechanical Engineer
Richard Helmich	NEIC	Chemist
Ben Donaldson	EPA Region 6 ECDAT	Environmental Engineer
James Haynes	EPA Region 6 ECDAT	Physical Scientist
Ben Rosenthal	EPA Region 6 ECDAT	Physical Scientist
David Baggett	Goodyear	Senior Environmental Engineer
Oliver Dugas	Goodyear	Environmental Manager
Charlie Mingo	Goodyear	Regional Environmental Manager
Michael Quave	Goodyear	Operational Excellence Manager

EPA Lead Inspector Signature/Date	BENJAMIN ROSENTHAL Digitally signed by BENJAMIN ROSENTHAL Date: 2024.04.15 16:38:30 -05'00'	
	Ben Rosenthal	Date
Supervisor Signature/Date	JAMES LEATHERS Digitally signed by JAMES LEATHERS Date: 2024.04.15 16:46:49 -05'00'	
	James Leathers	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

Region 6 EPA inspectors, Ben Donaldson and Ken McPherson, EPA Office of Enforcement and Compliance Assurance ("OECA") Air Enforcement Division ("AED") inspectors Nathan Hicks and Daniel Hoyt, accompanied by Philip Myers and Richard Helmich with the National Enforcement Investigations center ("NEIC") arrived at the Goodyear Tire & Rubber Company ("Goodyear") Beaumont Chemical Plant (the "Facility") at 9:00 am on February 9, 2024, for an unannounced inspection. The EPA inspectors met with Oliver Dugas, Goodyear Environmental Manager, Michael Quave, Goodyear Coordinator, and Charlie Mingo, Goodyear Regional Environmental Manager. The EPA inspectors presented credentials to Mr. Dugas and informed him that EPA was inspecting the facility to evaluate potential sources of excess emissions using EPA's Geospatial Measurement of Air Pollution ("GMAP") vehicle and to evaluate compliance with the facility's Title V Air Permit and the Clean Air Act. The scope of the inspection is a partial evaluation ("PCE"). This inspection occurred as part of a multi-scale monitoring project in the Beaumont-Port Arthur area. Photographs and videos taken during the inspection can be found in Appendix 1 and 2, respectively.

FACILITY DESCRIPTION

The Facility produces synthetic rubbers, including polyisoprene and styrene-butadiene, from feedstocks including crude isoprene and 1,3-butadiene. The Facility operates under Federal Operating Permit O2294, New Source Review ("NSR") Permits 3522, 20040, 22110, 56473, 124670, and various Permits By Rule.

Section II - OBSERVATIONS

The NEIC GMAP was driven by Richard Helmich and the instruments were operated by Mr. Myers. The GMAP drove on all available facility roads measuring air pollutant concentrations downwind of each of the process areas, if possible. A full report from the GMAP will be issued by NEIC separately from this report.

The site GMAP survey concluded at 12:45 p.m.

Region 6 Follow-up Inspection

At 9:30 on February 13, 2024, EPA Region 6 inspectors Ben Rosenthal ("I") and James Haynes conducted a follow-up inspection at the facility. I presented my credentials to Mr. Dugas and explained the purpose and scope of the inspection, which was to evaluate the facility's compliance with the applicable CAA regulations.

Mr. Dugas, Mr. Baggett, and Mr. Mingo, described the processes, plant nomenclature, and federal applicability at the facility. Mr. Dugas also conducted a safety briefing and orientation. The units are

named according to their products and assigned numerical designations. The facility operates continuous processes in its rubber and chemical manufacturing. The facility uses three flares to control emissions from the units. Emissions from the 821 and 829 units, 840 and 880 units, and the 850 unit are controlled by respective flares (130FL-Q501, 280FL-Q504, 850FL-Q504). Two regenerative thermal oxidizers ("RTO") control emissions from the 829 and 850 units' respective finishing buildings. The Isoprene Unit, 821, and the Natsyn Unit, 829, are subject to the National Emission Standards for Hazardous Air Pollutants ("NESHAP"): Miscellaneous Organic Chemical Manufacturing (referred to as "Miscellaneous Organic NESHAP" or "MON") in Title 40 of the Code of Federal Regulations ("40 CFR") Part 63, Subpart FFFF. Alliance Technical Group ("Alliance") is the facility's Leak Detection and Repair ("LDAR") contractor.

After discussing site processes, I told Mr. Dugas that we would walk through the Natsyn Unit and monitor for emissions from components using EPA Method 21 and an optical gas imaging ("OGI") camera. We would also use the OGI camera to survey the Facility's flares. Alliance accompanied us to conduct concurrent Method 21 measurements and place leak tags if necessary.

Mr. Dugas, Mr. Baggett, Mr. Haynes, and I arrived at the Natsyn Unit at 12:30 p.m. We met with operators of the unit and walked through the unit's hexane tank farm. The tank farm has an elevated catwalk that provides access to the tank's instrumentation and piping. I observed that each tank had a Pressure Relief Device ("PRD"), specifically a rupture disc, that vented to the atmosphere. On the atmospheric side of the rupture disks were analog pressure gauges. A Goodyear representative explained that operators conducted weekly visual inspections of the pressure gauges. Separately, the operator explained that pressure in the hexane tanks is monitored continuously, and that monitoring system would indicate when the pressure reading is above the rupture disks design pressure (i.e., venting to atmosphere). Rupture disks are replaced following a pressure release or defect on the rupture disk which causes flow to register on the pressure gauge. On the hexane tank farm catwalk, we detected a measurement of 4,000 ppm VOC as methane ("VOC") at a piping connection. I observed an open-ended line off F-109. [Area Of Concern ("AOC") 1]

We proceeded into the process area, where isoprene is polymerized and washed, dried, and baled in the Natsyn Unit finishing building. We observed VOC leaks at several components [AOC 2, AOC 3]. Table 1 includes a summary of Method 21 measurements made by EPA during the inspection.

Table 1: Field Measurement Data

Component Type/ID	EPA's Measurement ppm VOC[1]	Facility Measurement ppm VOC	Inspector

Piping connection close to needle valves 1185 and 1184	4,000	3,100	B. Rosenthal
Elbow in piping on third deck near TNC 2604-001	25,000	18,500	J. Haynes
Connector tagged 7801	1,100	1,400	B. Rosenthal
E302A PRD	13,000	10,500	J. Haynes
E302B PRD	33,000	24,000	J. Haynes
E302 PRD flanged connection	13,400	No confirmation reading recorded by EPA	B. Rosenthal
E303D Tubing to valve	2,500	3,000	J. Haynes
E301C valve	40,000	20,000	J. Haynes
Valve	2,500	3,000	J. Haynes
F-306 agitator	1,900	No confirmation reading recorded by EPA	B. Rosenthal
F-306 access hatch	1,600	No confirmation reading recorded by EPA	B. Rosenthal
Connector piping above southernmost vessel on the catwalk to hexane tanks from third deck	1,000	No confirmation reading recorded by EPA	B. Rosenthal

[1]Equipment: Flame Ionization Detector ("FID") Thermo Scientific Toxic Vapor Analyzer 2020: EPA R6 ID Numbers: H3, E03167; Calibration Kit 2.

After a break, we returned to the facility at 4:00 p.m., observed the control room for the Natsyn Unit flare and discussed its operation and monitored parameters with a Goodyear operator. We then continued our walk through of the Natsyn Unit. We observed additional leaking components (see Table 1). We observed the Natsyn Unit finishing building. While in the finishing building, I observed steam from the conveyer belt that was not being captured by the shroud that routes emissions to the RTO. [AOC 4] We then proceeded to the Natsyn Unit flare (130FL-Q501) and the 850 Unit flare (850FL-Q504) and observed uncombusted hydrocarbon emissions from both flares with the OGI camera. [AOC 5]

Mr. Haynes and I left the facility at 7:10 p.m.

Section III – AREAS OF CONCERN

I conducted a closing conference for the inspection at the Facility at 6:45 p.m. on February 13, 2024. I provided the facility with information about EPA's regulations that govern the confidentiality of business information regarding the photographs, videos, and documents discussed during the inspection. I informed Mr. Dugas that copies of the photographs and videos taken during the inspection would be made available to the facility. I summarized the EPA inspection teams' observations, including some of the following Areas of Concern.

1) Goodyear failed to equip an open-ended line on tank F-109 with a cap, blind flange, plug, or second valve.

The Natsyn Unit is subject to the MON. Hexane, a HAP, is stored in a battery of tanks within the Natsyn Unit. The hexane tanks operate in series and gradually concentrate it for use as a solvent in the process. Because the predominant use of the hexane tanks is associated with a miscellaneous organic chemical manufacturing process unit ("MCPU"), they must be assigned to that MCPU. 40 CFR 63.2435(d). Table 6 of the MON lists requirements for leaks from equipment in HAP service that is part of any MCPU. MCPUs in HAP service must comply with the requirements of NESHAP subpart UU, or 40 CFR Part 65 Subpart F. 40 CFR 63.1033(b)(1) requires each open-ended valve or line to be equipped with a cap, blind flange, plug, or a second valve.

2) Goodyear failed to route VOCs from PRDs to a closed vent system.

We observed a bonnet vent on a PRD that was venting hydrocarbons to the atmosphere. The PRD was in VOC service and conveying propane vapors. The PRD is subject to the Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006 (NSPS VV). 40 CFR 60.482-4(a) requires each PRD in gas/vapor service to be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, except during pressure releases. The leaks we observed from the PRDs were not captured or transported by the fuel gas system and do not meet the exemption in 40 CFR 60.482-4(c).

3)* HAP and VOC service process equipment leaks were observed at a significantly higher rate than the facility's Method 21 monitoring leak rate.

We documented 12 equipment leaks in 5 hours of field monitoring. We also documented additional exceedances of Goodyear's action level of 200 ppm VOC. I reviewed digital copies of the most recently uploaded MON MACT Periodic Reports submitted by Goodyear. For the reporting period of January 1, 2023, through June 30, 2023, Goodyear detected 2 equipment leaks out of no less than 2,035 components, a leak rate of 0.0009%. For the reporting period of July 1, 2023, through December 31, 2023, Goodyear detected 37 leaks out of no less than 14,717 components, a leak rate of 0.0025%.

4) Goodyear failed to route all fugitive emissions from the finishing building to the RTO.

We observed emissions in the finishing building that were not captured by the shroud and routed to the RTO. These emissions were visible as steam that was emitted from the conveyer and exited through the roof of the building. Permit Number 22110 Special Condition 21 requires fugitive emissions generated by the finishing building (EPN: 336F) to be captured and routed to an RTO (EPN: 829TO-Q600) during normal operations.

5) Uncombusted hydrocarbon emissions were observed from two flares, the Natsyn Unit flare and the 850 Unit flare.

Goodyear personnel stated that they attempt to ensure a steam to vent gas ratio ("SVG") of 0.9 to 1 for their steam assisted flares. This SVG may be too high for the composition of the waste vent gas from the facility. In general, SVGs approaching zero have demonstrated the highest destruction and removal efficiencies ("DRE"). As SVGs approach 1, DREs drop precipitously, resulting in higher emissions of regulated pollutants. See Appendix 2: video file names FLIR0050.mp4 and FLIR0049.mp4.

6)* Goodyear failed to submit timely supplements to the MON Notification of Compliance Status ("NOCS") for flares and pressure relief devices subject to 40 CFR 63.2520(d)(3) and 40 CFR 63.2520(d)(4), respectively.

40 CFR 63.2445(g) establishes the compliance date for PRD and flare requirements on August 12, 2023. Goodyear is required to submit supplements to the MON NOCS for the PRD and flare within 150 days of the effective compliance date of the MON. Goodyear has not submitted the NOCS supplements at the time of writing this report.

7)* Goodyear may not be meeting the pressure relief management requirements of the MON.

Pressure relief device management requirements can be found at 40 CFR 63.2480(e)(3). Pressure relief devices must be equipped with a monitoring device or system that identifies the release, notifies the operator immediately, and records the time and duration of the pressure release event. The pressure relief management system described by Goodyear includes weekly operator rounds of analog pressure gauges downstream of rupture discs, and operator monitoring via DCS of pressure levels in equipment associated to PRDs. Although through DCS monitoring, operators may receive an immediate notification of conditions that lead to a pressure release, there may be process equipment associated to relief devices that lack such a monitoring system. For example, in April 2022, Goodyear experienced a pressure release from the M100B drying bed. The leak was discovered when an operator saw liquid dripping from the drying bed vent pipe. In the process equipment design analysis performed by Goodyear after the event, Goodyear determined that there is no capability to monitor the drying bed for pressure through a DCS. If equipment cannot be monitored for pressure, then Goodyear must implement an alternative approach to comply with the PRD monitoring and pressure release management requirements of the MON. The Goodyear Standard Operating Procedure ("SOP") for releases requires operators to obtain the basic information regarding the release and make a best initial estimate of the identity and amount of chemicals released. This SOP language is inconsistent with the PRD monitoring and pressure release management requirements of the MON.

8)* During the GMAP inspection, a leak was found at a loading hose in the old loading rack area associated to stream 11, a mixed C5 product stream containing piperylenes and cyclopentane.

Title 30 of the Texas Administrative Code lists the control requirements for loading and unloading volatile organic compounds under Rule § 115.212. All land-based transfer to or from transfer vessels are required to be leak free and liquid and vapor lines must be equipped with fittings which make vapor-tight connections.

*AOCs 3, 6, 7, and 8, were determined after the conclusion of the inspection and were not discussed in the closing conference.

Section IV – FOLLOW UP

I requested the following information from Goodyear via email on February 21, 2024:

1. MON periodic reports for last 3 years.
2. MON NOCS and any addendums.
3. HON periodic reports for the last 3 years.
4. HON NOCS and any addendums.
5. Title V semi-annual deviation reports for the last 3 years.
6. Current NSR permits for the Goodyear Beaumont Chemical plant.
7. TAB reports for the last 5 years, or the most recent TAB report.
8. Sampling information that Goodyear has collected for crude isoprene received over the past year including concentrations and speciation of constituents.
9. Tedlar bag sample results taken from MON unit flare in the past 2 years.
10. A description of the pressure relief management monitoring system for each MON affected pressure relief device in organic HAP service.
11. Records of pressure relief events at PRDs in HAP service in MON applicable units in the past 3 years.
12. Operator weekly visual pressure gauge inspection records for PRDs in HAP service with vent to atmosphere in MON applicable units.
13. .BAK file of the LDAR database
14. Heat exchange system monitoring records for the last 2 years.
15. Protocols including the instrumentation used to monitor VOC concentrations at 0.08 parts per million VOC.
16. Any Method 21 readings observed by Alliance concurrently with the EPA inspection conducted on 2/13/24. Please include the readings that confirmed EPAs Method 21 measurements indicating a leak or exceedance. Information included on a leak tag placed by Alliance is sufficient.
17. Records of repairs made to equipment where a leak was indicated with Method 21 monitoring during the EPA inspection conducted on 2/13/24.
18. 15-minute block average cumulative flow for vent gas and steam for the Natsyn unit flare for the past 6 months.

19. 15-minute block average NHVvg for the past 6 months for the Natsyn unit flare.

On February 28, 2024, I provided electronic copies of the photographs and videos taken during the Region 6 follow-up inspection to Mr. Dugas.

Goodyear transmitted records and provided a response to the information request on March 8, 2024.

Section V – LIST OF APPENDICES

Appendix 1 – Photo Log – 3 photos taken 2/13/2024
Appendix 2 – Video Log – 9 OGI videos taken 2/13/2024

Appendix 1

Photograph Log

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

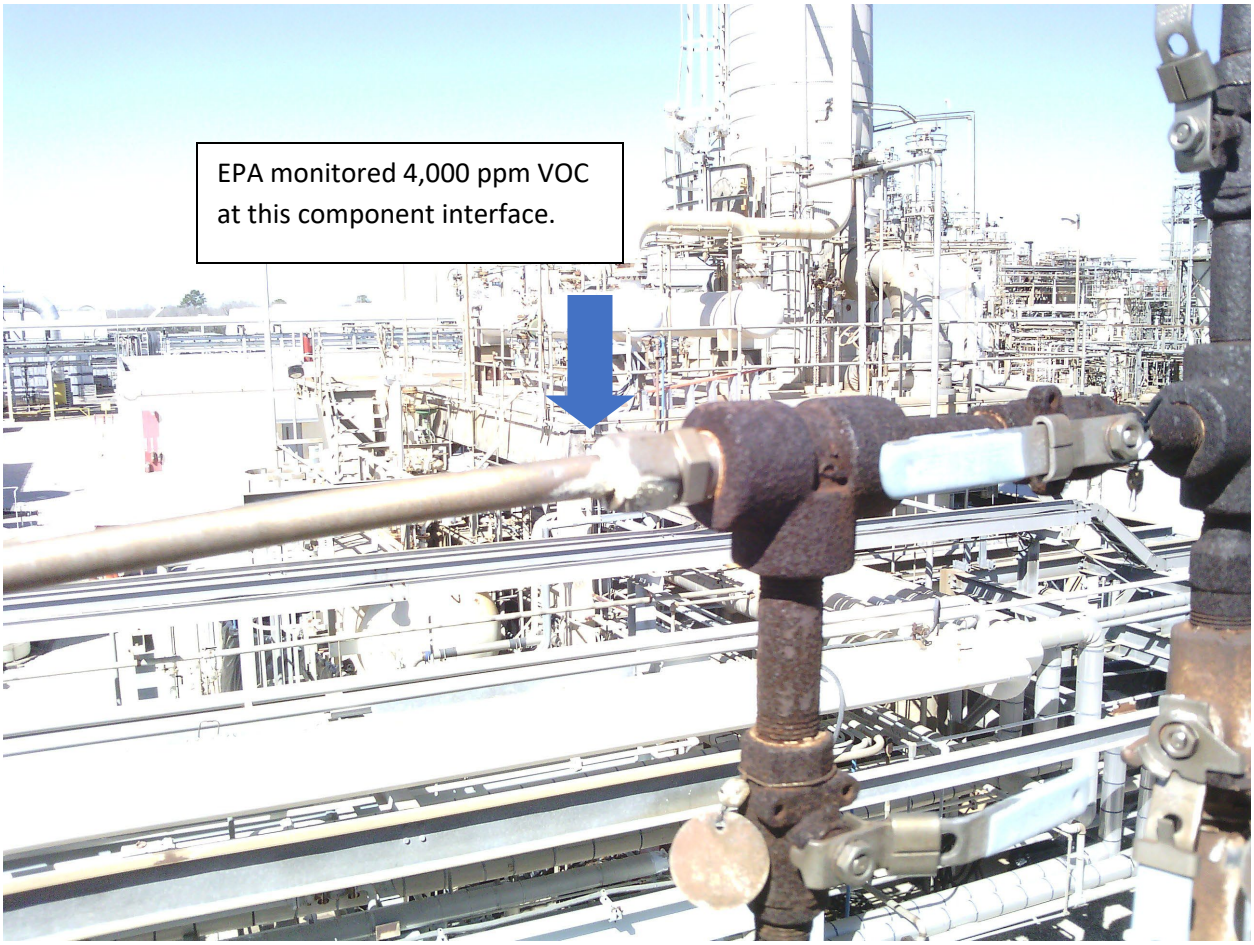

Photo File Name: FLIR0039.jpg
Date of Photo: 2/13/2024
Time of Photo: 1:00 pm
Photographer: Haynes
Description: Leak at piping connection.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 2

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

Photo File Name: FLIR0040.jpg
Date of Photo: 2/13/2024
Time of Photo: 1:00 pm
Photographer: Haynes
Description: Rupture disk with pressure gauge.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 3

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

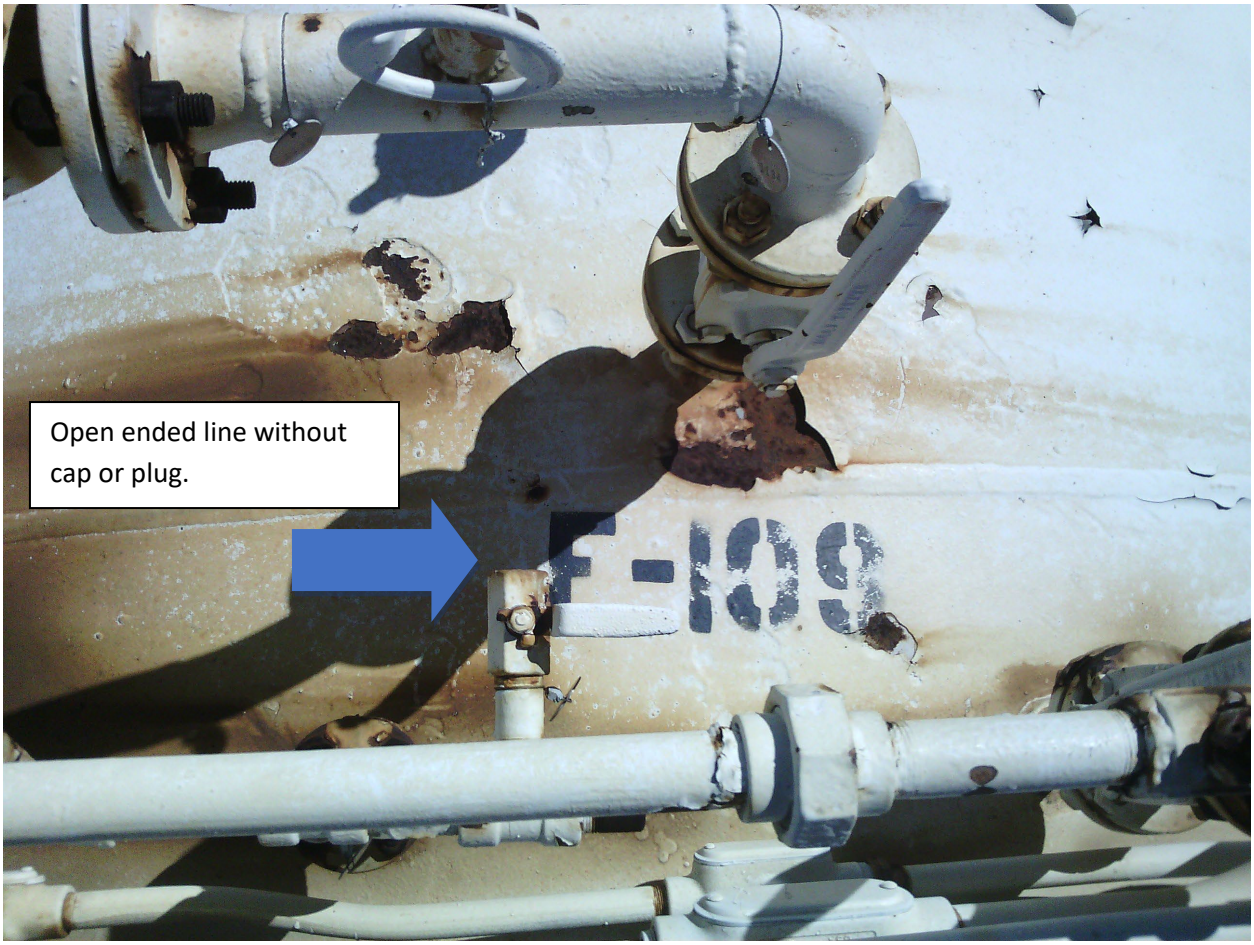

Photo File Name: FLIR0041.jpg
Date of Photo: 2/13/2024
Time of Photo: 1:00 pm
Photographer: Haynes
Description: Open ended line off F-109.

Appendix 2
Video Log

Appendix 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

Video File Name: FLIR0042.mp4
Date of Video: 2/13/2024
Time of Video: 13:30 pm
Videographer: James Haynes
Description: Visualized hydrocarbon emissions observed from under the insulation around the elbow in the piping. Propane supply to 9E513. EPA FID measurement 25,000 ppm VOC.

Video File Name: FLIR0044.mp4
Date of Video: 2/13/2024
Time of Video: 13:35
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from leaking valve, Tag #6882.

Video File Name: FLIR0045.mp4
Date of Video: 2/13/2024
Time of Video: 13:40
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from leaking valve. EPA FID measurement 13,000 ppm VOC.

Video File Name: FLIR0046.mp4
Date of Video: 2/13/2024
Time of Video: 13:45
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from bonnet vent on PRD. EPA FID measurement 33,000 ppm VOC. Near Tag #6995

Appendix 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

Video File Name: FLIR0047.mp4
Date of Video: 2/13/2024
Time of Video: 13:50
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from a valve/flange leak.

Video File Name: FLIR0048.mp4
Date of Video: 2/13/2024
Time of Video: 13:55
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from valve. EPA FID measurement 40,000 ppm VOC.

Video File Name: FLIR0049.mp4
Date of Video: 2/13/2024
Time of Video: 15:45
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from F 306 agitator. EPA FID measurement 1,900 ppm VOC.

Video File Name: FLIR0050.mp4
Date of Video: 2/13/2024
Time of Video: 18:30
Videographer: James Haynes
Description: Visualized uncombusted hydrocarbon emissions from the utilities (Natsyn Unit) flare.

Appendix 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

Location: The Goodyear Tire & Rubber Company Beaumont Chemical Plant		
City: Beaumont	County: Jefferson	State: Texas

Video File Name: FLIR0051.mp4
Date of Video: 2/13/2024
Time of Video: 18:45
Videographer: James Haynes
Description: Visualized hydrocarbon emissions from the Budene Unit flare.

*times are approximate