



Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	02/14/2024	
Media Program:	Air	
Regulatory Program(s)	Title V, NESHAP	
Company Name:	Lion Elastomers Orange, LLC	
Facility Name:	Lion Elastomers Orange	
Facility Physical Location:	5713 FM 1006	
(city, state, zip code)	Orange, TX 77630	
Mailing address:	5712 FM 1006	
(city, state, zip code)	Orange, TX 77630	
County/Parish:	Orange County	
Facility Phone Number	409-924-4723	
Facility Contact:	Kimika Lowe	Environmental Manager
	kimika.lowe@lionelastomers.com	
FRS Number:	110064446531	
Identification/Permit Number:	CN605689207, RN100224468; Permit FOP O-1271	
Media Identifier Number:	AFS # 48-361-00004	
NAICS:	325212 (Synthetic Rubber Manufacturing)	
SIC:	2822 (Synthetic Rubber Vulcanizable Elastomers)	
Personnel participating in inspection:		
Sarah Frey	EPA Region 6 ECDAT	Physical Scientist
Colleen McCarthy	EPA Region 6 ECDAT	Life Scientist
Kimika Lowe	Lion Elastomers Orange	Environmental Manager
EPA Lead Inspector Signature/Date		
	Sarah Frey	Date
Supervisor Signature/Date		
	James Leathers	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspectors Dr. Sarah Frey and Ms. Colleen McCarthy arrived at the Lion Elastomers Orange, LLC Orange Plant (“Facility”) at 3:40pm on February 14, 2024, for an unannounced inspection. We met with Ms. Kimika Lowe, Environmental Manager. Credentials were presented to Ms. Lowe and we informed them that this was an EPA inspection 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”) focusing on the Facility’s flares. This inspection occurred as part of a multi-scale monitoring project in the Beaumont-Port Arthur area. Prior to making entry, EPA inspectors observed the Facility’s West Flare from a public road (Video 1). The off-site observations led to the on-site inspection. Videos taken before and during the inspection can be found in Appendix 1.

FACILITY DESCRIPTION

The Facility is a synthetic rubber manufacturing plant, producing a variety of butadiene, styrene, and isoprene copolymers, that operates under Federal Operating Permit O-1271 issued August 12, 2020.

Section II - OBSERVATIONS

At 4:00pm on February 14, 2024, EPA inspectors entered the Facility with Ms. Lowe to observe the flares. Per Ms. Lowe, The West Flare controls vapors from the process and the South Flare controls vapors from the tank farm.

Per Ms. Lowe, the flares are steam-assisted flares equipped with calorimeters, vent gas flow meters, steam flow meters, and thermocouples. Ms. Lowe stated that they have the ability to calculate steam-to-vent gas ratios and steam is manually adjusted at each flare.

Inspector McCarthy used an infrared optical gas imaging (“OGI”) camera to observe each flare. The West Flare was observed to be pulsating and appeared to have uncombusted hydrocarbons trailing from the flare for a distance (Videos 2 and 3). [AOC 1]

The South Flare appeared to have excess steam; however, the inspectors did not observe uncombusted hydrocarbons with the OGI camera.

Inspectors stated that they would request data related to the net heating value of the vent gas, vent gas and steam flow rates, and operating information for both flares.

The inspection team departed the Facility at 4:28pm.

After departing the Facility, EPA inspectors reviewed a June 14, 2023, Texas Commission on Environmental Quality ("TCEQ") Investigation Report. This report noted hydrocarbons were observed emitting from the West Flare, with the tail greater than five flame lengths from the flare, stretching above the investigators. The report also states that TCEQ previously observed the West Flare pulsating and emitting uncombusted hydrocarbons on January 17, 2023. [AOC 2]

After departing the Facility, EPA inspectors reviewed data provided by the facility on March 4, 2024, that covers the time period from January 1, 2021, to February 24, 2024. A steam flow meter was installed at the South Flare in April 2020, however no data was collected or stored. The facility was unable to provide the minimum steam rate or an average steam rate. There are some instances where the Net Heating Value of the Vent Gas (NHV_{vg}) falls below 300 British thermal units per standard cubic foot (BTU/scf). [AOC 3]

For the West Flare, EPA calculated the Net Heating Value in the Combustion Zone (NHV_{cz}), using the equations found in 40 CFR 63.670(m). The calculated NHV_{cz} was below 270 BTU/scf for the majority of data provided. [AOC 4]. There are some instances where the NHV_{vg} falls below 300 BTU/scf. [AOC 3]

Section III – AREAS OF CONCERN

Inspectors Frey and McCarthy conducted a closing conference at Lion Elastomers Orange, LLC at 4:20pm on February 14, 2024, for the inspection. Dr. Frey summarized the observations from the OGI camera and the following Areas of Concern ("AOC"). AOCs 2-4 were determined after the conclusion of the inspection and were not included in the closing conference. The Facility made no claims of confidential business information regarding the videos. The Facility was informed that copies of the videos would be made available following the inspection.

- 1) EPA inspectors observed unstable flame conditions, excess steam, and uncombusted hydrocarbons at the West Flare. This indicates that the flare may be operating with poor efficiency resulting in excess emissions. 40 CFR 63.6(e)(1)(i) requires air pollution control equipment to be operated in a manner consistent with safety and good air pollution control practices for minimizing emissions.
- 2) EPA inspectors observed that Lion Elastomers has been notified of poor flare operation on multiple occasions and it is unclear what corrective actions have been taken to minimize emissions.
- 3) EPA inspectors reviewed flaring data for the South Flare. The flare was operated below 300 BTU/scf on more than one occasion. 40 CFR 63.11(b)(6)(ii) requires flares to operate with a net heating value of the gas being combusted at 300 BTU/scf or greater if the flare is steam-assisted.
- 4) EPA inspectors reviewed flaring data for the West Flare. EPA calculated that Lion Elastomers operates the flare with poor combustion efficiency, which may result in excess emissions. 40 CFR 63.6(e)(1)(i) requires air pollution control equipment to be operated in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Section IV – FOLLOW UP

On February 22, 2024, EPA requested additional information relating to flare operation. This information was received on March 4, 2024.

On March 20, 2024, Dr. Frey provided electronic copies of the videos recorded during the inspection to Ms. Lowe.

Section V – LIST OF APPENDICES

Appendix 1 – Video Log – 3 OGI videos taken 2/14/2024

Appendix 1

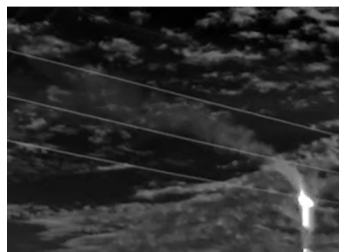
Video Log



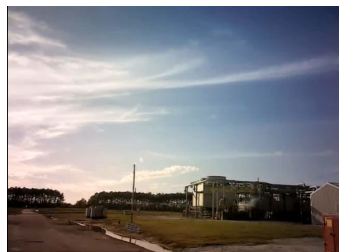
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Video Log

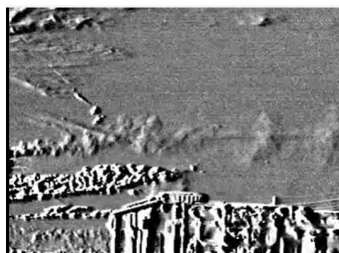
Location: Lion Elastomers Orange LLC – Orange Plant		
City: Orange	Orange County	State: Texas



Video File Name: [MOV_0385.mp4](#)
 Date of Video: 02/14/2024
 Time of Video: 16:08
 Videographer: Colleen McCarthy
 Description: West Flare observed off-site from public roadway.
 Trailing emissions observed.



Video File Name: [MOV_0386.mp4](#)
 Date of Video: 02/14/2024
 Time of Video: 16:15
 Videographer: Colleen McCarthy
 Description: West Flare observed on-site. Pulsating and trailing emissions observed.



Video File Name: [MOV_0387.mp4](#)
 Date of Video: 02/14/2024
 Time of Video: 16:16
 Videographer: Colleen McCarthy
 Description: West Flare observed on-site. Trailing emissions observed.