



Shell Chemical Appalachia LLC
300 Frankfort Rd
Monaca, PA 15061

December 19, 2023

Mark Gorog P.E., Regional Manager Air Quality Program
Pennsylvania Department of Environmental Protection (PADEP)
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222

RE: PA-04-00740C LP Incinerator (C204A) Visible Emissions Malfunction Report

Dear Mr. Gorog,

Shell Chemical Appalachia LLC (“Shell”) is submitting this malfunction report to the Pennsylvania Department of Environmental Protection (PADEP) for visible emissions from the LP Incinerator on November 27, 2023.

This malfunction did not pose an imminent and substantial danger to the public health and safety or the environment.

- **Name and location of the facility**

Shell Polymers Monaca
300 Frankfort Road, Monaca PA, 15061

- **Nature and cause of the incident**

On November 27, 2023, at approximately 15:08, visible emissions (VE) were present from the LP Incinerator (Continuous Vent Thermal Oxidizer/CVTO) stack. The VE lasted for approximately 26 seconds and visually appeared black in color. This was deemed a malfunction in accordance with Section C Condition #018 of PA-04-00740C as it met the definition of “heavy smoke.” The Section D Condition #001 VE limit of “not to exceed 0% except for a total of five minutes during any consecutive two-hour period” was not exceeded, as the event lasted well under five minutes.

The VE corresponded to when waste gas was introduced into the CVTO during a startup and has been attributed to inadequate combustion conditions. This is detailed in a later section of this report. Note that, at the time of this malfunction, the Ethane Cracking Unit and Polyethylene units were down.

- **Time when the malfunction or breakdown was first observed**

VE first observed on November 27, 2023, at 15:08:27

- **The date and time that the malfunction started and ended**

VE started on November 27, 2023, at 15:08:27 and ended on November 27, 2023, at 15:08:53.

- **An estimate of the emissions associated with the malfunction**

No excess emissions. The malfunction was visible emissions only.

- **The calculations that were used to determine that quantity**

Summary of VE elapsed time as determined by review of camera footage is captured below.

- 26 seconds of VE observed between 15:08:27 and 15:08:53

Method 22 observations were not performed by operations due to the short duration of the VE.

- **The steps, if any, that the facility took to limit the duration and/or quantity of emissions associated with the malfunction**

CVTO operations were quickly stabilized (within 30 seconds) of waste gas introduction and VE ceased.

- **A detailed analysis that sets forth the Root Cause of the malfunction, to the extent determinable**

Ahead of CVTO startup, waste gas was being combusted in the CVTO header of the LP Multipoint Ground Flare (MPGF- Source ID C204B). Supplemental natural gas was lined up to the waste gas header to satisfy the minimum net heating value requirement of the MPGF. The natural gas flow was reduced just ahead of opening the waste gas valve to the CVTO, but the conclusion is that it was not reduced enough based on the available combustion air. This resulted in a brief period of poor combustion conditions, thus generating black smoke.

Operations quickly lowered the supplemental natural gas and adjusted the combustion air and the smoking dissipated.

- **An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of a malfunction resulting from the same Root Cause or contributing causes in the future**

A review of the CVTO startup procedure/sequencing is underway to determine if there are any potential changes that could help avoid future similar events. This review will be complete by no later than March 2024.

- **To the extent that investigations of the causes and/or possible corrective action(s) still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report will be submitted**

No follow up report is anticipated.

- **Corrective action is final or timeline for implementation**

N/A

If you have any questions regarding this matter, please contact me at (724) 709-2467 or kimberly.kaal@shell.com.

Sincerely,

Kimberly Kaal
Environmental Manager, Attorney-in-Fact

CC:
Scott Beaudway, Air Quality Specialist
Beth Speicher, Environmental Group Manager
Kristin Goddard, Environmental Compliance Specialist