Shell Chemical Appalachia LLC
300 Frankfort Rd
Monaca, PA 15061

June 29, 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 Source ID 205 High Pressure (HP) Header System – Brush Fire Near the HP Flare Area Malfunction Report

Dear Mr. Gorog,

As requested by the Pennsylvania Department of Environmental Protection (PADEP), Shell Chemical Appalachia LLC ("Shell") is submitting this Malfunction Report for a small brush fire near the HP flare area.

This incident 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 June 1, 2023, beginning at approximately 13:28, operations received a call regarding a small brush fire on the slope south of Totally Enclose Ground Flare (TEGF) A on the top of the hill between the flare and the road to water treatment. Emergency Response Team (ERT) mobilized to the scene to extinquish the brush fire. The cause of the incident was determined to be a small amount of refractory which came out of the top of TEGF A that came in contact with the dry brush resulting in the fire.

- **Time when the malfunction or breakdown was first observed**
  June 1, 2023 at 13:28

- **The date and time that the malfunction started and ended**
  June 1, 2023 at ~13:28 and ending on June 1, 2023 at ~13:58

- **An estimate of the emissions associated with the malfunction**
  There were no emissions associated with this event.

- **The calculations that were used to determine that quantity**
  N/A.

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

N/A.

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

  Small glowing pieces of insulation (refractory) material coming out of the top of the TEGF have been observed during the last couple of months due to the loss of refractory material - Figure 1. The glowing material from recent hot spot repairs landed near the HP flares in some vegetation that due to insufficient rain and higher than normal temperatures caused vegetation to dry and when in contact with the refractory material ignited.

  At the time of the event wind was blowing in the direction towards the burned area and lined up with where the closest vegetation just happened to be located suppying oxygen causing the brush fire to grow swiftly.

Figure 1. Insulation refractory material in contact with vegetation

- **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**

  SPM started to perform periodic thermal imaging activities on the TEGFs since the brushfire incident to provide assurance that there has been no significant loss of refractory causing hot spots.

  In addition to the monitoring loss of refractory material described above and to prevent recurrence of an identical incident in the future, Shell is evaluating several mitigation plan options to be implemented in the area where the brush fire occurred (light yellow area Figure 2 below):

Option	Description	Benefit
#1	Mow hillside and plant non flammable vine such as a Myrtle Vine	Benefit to this is that it would root and hold hillside together
#2	Mow hillside, install barrier[1], then place stone 12' from top on hill	Benefit would be permanent stone, downfall is the hill could slip in a heavy storm
#3	Install a sprinkler system around perimeter	Benefit would be ability to control moisture on hillside

[1] barrier would be a material to keep grass from growing through.

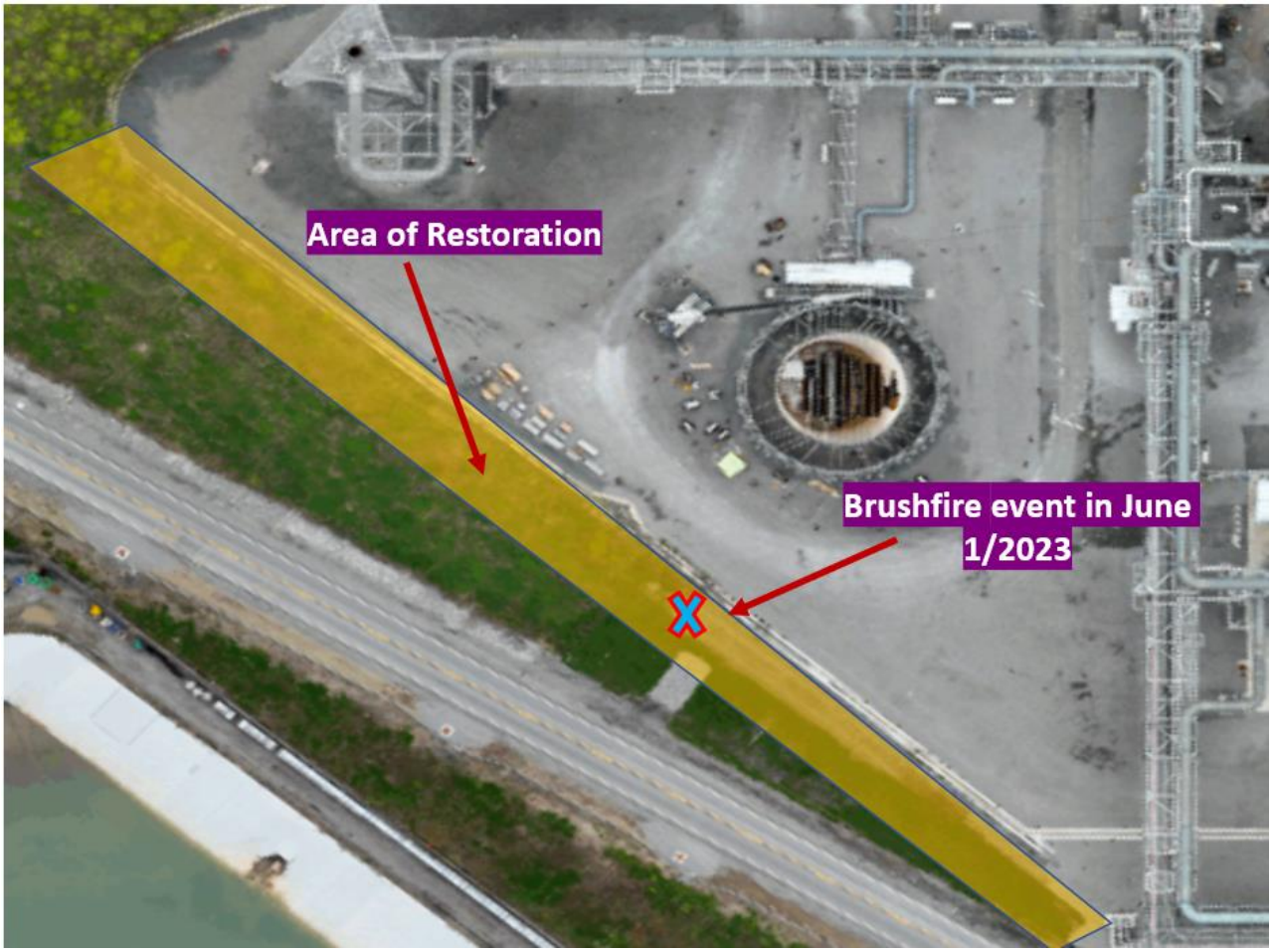

Figure 2. Vegetative mitigation area

- **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**

  A followup report will be submitted after the vegetative mitigation is complete in September.

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

  A panel review team comprised of Maintenance, Operations, HSSE, Logistics, and Real Estate will discuss and evaluate the different options and implement the mitigation by the end of August, 2023.

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

Sincerely,

Kimberly J. Kaal

Kimberly Kaal
Environmental Manager, Attorney-in-Fact

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