



Shell Chemical Appalachia LLC
300 Frankfort Rd
Monaca, PA 15061

April 26, 2023

Elizabeth Speicher, Environmental Group Manager
Pennsylvania Department of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222

**RE: Shell Chemical Appalachia LLC
Shell Polymers Monaca Site
Potter and Center Townships, Beaver County
Plan Approval No. 04-00740C
Request for Control Plan**

Dear Ms. Speicher:

Shell Chemical Appalachia LLC (“Shell”) is providing the Control Plan requested in PADEP’s April 17, 2023 letter. The Control Plan relates to the Notice of Violation received on April 17, 2023, for malodor emissions in the Wastewater Treatment Plant reported between January 25, 2023 through February 16, 2023.

Attached, please find the following:

- Air Quality Control Plan – April 26, 2023

Please contact me at 724-709-2467 or Kimberly.kaal@shell.com if you have any questions or need additional information.

Sincerely,

Kimberly J. Kaal

Kimberly J. Kaal
Environmental Manager
Attorney-in-Fact

Cc: Scott Beudway, Air Quality Specialist
Mark Gorog, Regional Air Quality Manager
K. Goddard, Compliance Specialist

Air Emission Control Plan - Wastewater Treatment Plant Biotreaters
PA-04-00740C, Source ID 502
Shell Polymers Monaca Site
April 26, 2023

Background:

On April 17, 2023, PADEP requested a Control Plan related to a Notice of Violation issued for a manual valve that was inadvertently left open between the Ethane Cracking Unit (ECU) and the Wastewater Treatment Plant (WWTP) causing additional hydrocarbon to be pumped to the WWTP biotreaters and subsequently causing a malodor noted between January 25, 2023 through February 16, 2023.

Shell Chemical Appalachia LLC sent a Malfunction Report to the Department on March 27, 2023 documenting the root cause and steps taken to limit the duration and quantity of emissions/malodor associated with this event. The Malfunction Report also documented the measures taken to reduce the likelihood of re-occurrence of the event root cause and corrective actions taken. The Malfunction Report also indicated the timeline for completion of the corrective actions, including those that were already completed.

Short Term Operational Controls:

Odors were minimized through the closure of a manual valve which isolates the ECU wash oil slop drum, hydrocarbon slop drum, and warm flare drum liquids from the process wastewater system. Operations walked down the piping and hydrocarbon-containing drums within ECU to verify correct valve alignments at other locations.

Administrative Controls:

On February 22, 2023, a Management of Change request (MOC 73692) was submitted and subsequently approved to install a car-seal on the manual valve VA-190172-2 to isolate the process wastewater from the hydrocarbon containing drums listed above within ECU. Car-seals are a control device used to lock or seal a critical valve with a cable lock in the open or closed position to prevent unauthorized operation of the valve. Adding a car-seal to this manual valve in the closed position provides a higher level of control and assurance on the valve operation and disposition, and minimizes the likelihood of inadvertent valve misalignments that occurred. Other valves in ECU have car-seals added to avoid similar valve misalignments.

The site has a Car-seal Policy that documents the minimum requirements for proper use, required approvals to add and/or remove the seals from critical operational equipment, including audit and training requirements. All ECU operators and production operation teams receive initial policy and ongoing refresher training as well as minimum qualification training related to car-seal usage and management. Process Engineering Flow Schemes (PEFS) are updated to show equipment where car-seals are installed and normal position of the valve (Car-seal Open, Car-seal Closed). During daily shift meetings, car-seal status exceptions and changes are communicated to operations until back into normal position.

In addition, labels were added to the lines in this wastewater manifold to identify process streams, flow direction and the approvals necessary to remove a car-seal and change valve normal positioning (e.g, new labels shown below). These above corrective actions are considered complete. See photograph below showing the subject valve manifold with applicable car seals and additional line labeling.



Engineering Controls:

Shell commissioned a project to design, install and test a temporary enclosed WEMCO induced air flotation (IAF) unit to increase primary hydrocarbon removal capacity prior to the biotreaters in the WWTP (temporary air quality permit Request for Determination #10119 approved on 4/10/23).

Separated hydrocarbons will be routed to the recovered oil tank and overhead hydrocarbon vapors from the enclosed induced air flotation system routed to the spent caustic thermal oxidizer to control emissions. Hydrocarbon input will be reduced prior to, and the emissions controlled in the existing thermal oxidizer thereby reducing the amount of hydrocarbon feeding into the biotreaters and the potential for uncontrolled emissions from Source ID 502. Additional water treatment technologies have been utilized including powder activated carbon and liquid phase granular activated carbon vessels to reduce hydrocarbon in the biotreaters and treated process water.

PADEP issued a Temporary Discharge Approval for the addition of temporary water treatment equipment on March 6, 2023. PADEP also approved a Request for Determination (RFD#10119) for the WEMCO emission control at the Spent Caustic Thermal Oxidizer on April 10, 2023. The use of the powder activated carbon has begun and the liquid phase granular activated carbon vessels have been installed and are in use. The WEMCO unit is in the process of being installed and should be operational by the end of April 2023. Based on the performance of these temporary water treatment equipment to control

hydrocarbons into the biotreaters and the malodor, a decision to extend their use on a temporary basis will be made or to amend current regulatory approvals to add these controls permanently.

Physical removal of floating hydrocarbons by skimming has also been employed when presented in the biotreaters. Upstream process water sampling has occurred within the ECU to determine when process wastewater hydrocarbon concentrations increased or decreased has improved wastewater flow management within the units and communication between ECU and the WWTP.