STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
OFFICE OF THE SECRETARY
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NOTICE OF ADMINISTRATIVE PENALTY ASSESSMENT AND SECRETARY'S ORDER

Pursuant to 7 *Del. C.* § 6005

Order No. 2025-A-39

SERVED VIA CERTIFIED MAIL
RETURN RECEIPT

Issued To:
Delaware City Refining Company, LLC
Attn: Michael Capone
Refinery Manager
4550 Wrangle Hill Road
Delaware City, DE 19706

Registered Agent:
The Corporation Trust Company
Corporation Trust Center
1209 Orange Street
Wilmington, DE 19801

This Assessment and Secretary's Order serves to notify Delaware City Refining Company, LLC ("Respondent") that the Secretary of the Department of Natural Resources and Environmental Control ("Department") has found Respondent in violation of 7 *Del. C.* Chapter 60, state and federal air regulations and its permit. Accordingly, the Department is issuing this Notice of Administrative Penalty Assessment and Secretary's Order pursuant to 7 *Del. C.* § 6005(b)(3).

BACKGROUND

Respondent owns and operates a petroleum refinery located in Delaware City, Delaware, ("refinery") where it manufactures various petroleum-based products, including gasoline, diesel, and jet fuels, and other marketable petroleum by-products. Respondent's operations have the potential to emit pollutants in excess of the major source threshold for New Castle County and requires a permit, ("Title V Permit") pursuant to 7 DE Admin. Code 1130 ("Title V State Operating Permit Program") of the State of Delaware's *Regulations Governing the Control of Air Pollution*.

The Department issued a Title V Permit Renewal comprised of three parts ("permits"), Permit: AQM-003/00016-Part 1 (Renewal 3); Permit: AQM-003/00016-Part 2 (Renewal 2); Permit: AQM-003/00016-Part 3 (Renewal 3), to Respondent on August 18, 2022. Each of those permits have undergone revisions and Respondent's operations are currently governed by Permit: AQM-003/00016 – Part 1 (Renewal 3)(Revision 2); Permit: AQM-003/00016 – Part 2 (Renewal 2)(Revision 2); Permit: AQM-003/00016 – Part 3 (Renewal 3)(Revision 2), issued on November 14, 2024.

Permit: AQM-003/00016-Part 2 (Renewal 2) issued August 18, 2022 ["TV Permit-Part 2 (Ren 2)"] and Permit: AQM-003/00016-Part 2 (Renewal 2)(Revision 2) issued November 14, 2024 ["TV Permit-Part 2 (Ren 2) (Rev 2)"] are applicable to the violations addressed by this Order.

Respondent's permits require it to report deviations from the permits. These reports, along with supplemental information provided by Respondent, are the basis for the factual assertions below. The Department expressly reserves the right to take further enforcement action should it become aware that the descriptions of the violations, Respondent's actions, or the pollutant emissions were not accurately represented in Respondent's reports. This Order addresses the violations described below.

Several of the violations described below are related to outages of the CO Boilers of the Fluid Coking Unit ("Coker"[1]) and the Fluid Catalytic Cracking Unit ("FCCU"). A Settlement Agreement was signed April 27, 2023, between the Department and Respondent which required Respondent to develop a COB Reliability Plan describing the inspection and/or maintenance activities that Respondent will perform during future turnaround outages. Respondent was to institute measures designed to enhance the operating reliability of the Coker and FCCU COBs, thus minimizing the likelihood of further COB outages. The occurrence of five COB outages in twelve months suggests that the COB Reliability Plan has not adequately addressed the operational reliability of these units.

Flaring Related Violations

The operation of a refinery blowdown system, which includes a flare system, is governed by Respondent's Title V Permit. The purpose of the flare system is to safely handle and dispose of combustible gases and vapors that are released during refinery upsets, startups, and shutdowns in order to minimize impacts on the environment. Although the Respondent is permitted by the Department to utilize the flare system to minimize impacts on the environment, the permit does not allow the emission of pollutants from the flare. Hydrocarbon flaring episodes are of concern to the Department because they have the potential to emit large amounts of criteria pollutants, particularly sulfur dioxide ("SO_2"). The amount of pollution emitted during a flaring episode is entirely dependent on the

[1] In the past, the Department has referred to the Fluid Coking Unit as the FCU. However, due to the similarity of the acronym, FCCU, for the Fluid Catalytic Cracking, the Department has elected to refer to the Fluid Coking Unit as "the Coker."

source of the gases being flared, the duration and rate of the flaring, along with the quantity and sourness (H_2S content) of the gas emitted from the flare.

From January 1, 2024, through June 30, 2024, Respondent experienced flaring events that met the reportable threshold on six days. The specific dates of the incidents covered by this Order, and a brief description of the flaring events as detailed in reports from Respondent, are described below.

April 26, 2024

In a May 22, 2024, Flaring Incident Report, Respondent provided information on an April 26, 2024, flaring incident. The Gimpel electrohydraulic trip and throttle valve on the steam supply to the Coker wet gas compressor, ("22-K-302B"), transferred from 100% open to fully closed unexpectedly resulting in the loss of both compressors 22-K-302B and 22-K-303B. The FCCU wet gas compressors were out of service for planned maintenance ("turnaround"), so the Coker wet gas compressors were processing all the refinery low line gases. With this reduced processing capacity, the Coker fractionator drum reached set point and vented to the flare line. Flaring began at 1:42 p.m. Operations personnel reduced the Coker feed rate to minimum levels. Compressor 22-K-302B was brought back online at low rates by 2:07 p.m., and safety checks were completed by 3:24 p.m. Compressor 22-K-303B was brought back online at 3:30 p.m., ending the flaring event. The flaring event resulted in the unpermitted release of 7,200 lbs. of SO_2.

May 6, 2024

According to Respondent's June 5, 2024, Flaring Incident Report, at approximately 2:25 a.m. on May 6, 2024, a flaring event resulted in the unpermitted release of 5,945 lbs. of SO_2. After completion of the planned turnaround referenced above, the FCCU was undergoing startup activities on May 5, 2024. At approximately 12:35 a.m. on May 6, 2024, the bottoms liquid level in the FCCU Gas Plant's sponge oil absorber, started to increase from liquid carry-over from the upstream Absorber De-Ethanizer Tower. This was the start of a cascade of upsets throughout the various equipment that make up the FCCU resulting in hydrocarbon carry over to the Diglycolamine Absorber ("DGA"), DGA Regenerator, and to the sulfur plant via the Acid Gas Knockout Drum. Hydrocarbon carry over negatively affected the Thermal Reactor at Sulfur Recovery Unit-1 ("SRU") and elevated the unit front-end pressure at the Shell Claus Offgas Treatment Unit Train II ("SCOT-2"). An SRU trip would activate at high front-end pressures. At 2:15 a.m. SRU operations personnel began to flare on a controlled basis to reduce the environmental impact caused by the upset and prevent damage to the SRU. Rates at other facility units, including the FCCU, were reduced to stabilize the system. Intermittent hydrocarbon flaring continued as refinery operations continued to stabilize until 7:34 p.m.

The incident report identified the root cause of the upset as the inability to dispose of the material in the Absorber De-Ethanizer Tower because it was off-specification and yet contained light ends that could not be accepted by the Off Test Slop Tank. Level indication in the Absorber Tower was unreliable due to the variations of density caused by the composition and temperature differences from the calibration conditions of the instruments.

At the restart of the FCCU, the overhead light ends from the splitter tower were vented to the low line which ultimately feeds the Cracked Naphtha Hydrotreater Unit. This allowed the FCCU startup to proceed without resulting in a liquid full Absorber De-Ethanizer Tower. Additional operator rounds were implemented for field verifications across the FCCU Gas Plant to confirm instrument readings.

May 8, 2024

Respondent's Flaring Incident Report dated June 6, 2024, states that on May 8, 2024, two flaring events caused a total unpermitted release of 663 lbs. of SO_2. After the initial startup attempt of the FCCU on May 5, 2024, after completion of the turnaround, feed was reintroduced into the FCCU on May 8, 2024. During the startup, the Depropanizer Tower ("24-C-3") and Overhead Accumulator Drum ("24-D-3") levels began to rise. 24-D-3 began venting to the flare header with flaring beginning at 12:00 p.m. Operations personnel manually verified the drum level and vented the drum to ensure there were no noncondensables in the system, then opened the overhead product control valve to stabilize the Depropanizer Tower pressure. The pressure in 24-D-3 began to fall and flaring ended at 12:15 p.m. Respondent's investigation revealed that the pressure safety valves at 24-D-3 were experiencing an auto refrigeration effect from passing liquid LPG overhead product. The frosted valves were lifting at lower than their set pressures. The valve was tested by a third-party vendor and was found to be leaking slightly at pressures just below the set point but within design specifications. Operator rounds were implemented for field verifications of levels across the FCCU Gas Plant to confirm instrument readings. The FCCU Gas Plant startup procedure was updated to include verification of the 24-D-3 level.

The second flaring event on May 8, 2024, occurred during startup of the Alkylation/Kellogg Unit due to high pressure in the Deisobutanizer, and Depropanizer ("27-C-3") Towers. Flaring began at 2:55 p.m. Operations personnel fully opened the overhead product control valve at 27-C-3 allowing the pressure to fall and flaring ended at 3:15 p.m. As a result of its investigation, Respondent's Alkylation Unit startup procedure was updated to include the monitoring of the flare pressure until the equipment is depressured. The overhead product control valve would be used to control isobutane accumulation in the system to help control pressure.

May 15, 2024

Respondent's Flaring Incident Report dated June 13, 2024, states that on May 15, 2024, a flaring event resulted in the unpermitted release of 215 lbs. of SO_2. The recycle gas compressor ("29-K-1A") for the Train 1 Naphtha Hydrotreater tripped offline and the additional gas to the flare header caused flaring to begin. Operations personnel unsuccessfully attempted to restart 29-K-1A, followed by an attempt to start-up the standby compressor, 29-K-1B. Compressor 29-K-1B started up but would not pump. Feed was pulled from the Train 1 Naphtha Hydrotreater at 6:50 p.m. and flaring ended at 7:28 p.m., once the feed was completely pulled. Respondent's investigation revealed that the motor of 29-K-1A experienced a fault causing the compressor to trip offline. The motor was sent offsite for repair. Inspections of the motor indicated the failure was due to excessive heat in the motor and rotor winding despite motor insulation, as well as dirty motor air filters. The operator daily rounds now include monitoring of the motor temperature and more frequent filter changes. The inability of 29-K-1B to pump was likely affected by liquid carry over into the compressor cylinders. Procedural improvements to ensure the suction is clear of liquids prior to restart and alarm setpoints on the compressor were added.

June 1-2, 2024

Respondent's Flaring Incident Report dated July 1, 2024, indicated a flaring event that began on June 1, 2024, and continued into June 2, 2024, resulted in the release of 628 lbs. of SO_2. Beginning at 7:30 p.m. on June 1, 2024, the south flare header pressure started to climb. Flaring from the south flare began at 11:30 p.m. Operations personnel worked through their unit flare checklists to identify the source of the flaring. At 3:00 a.m. on June 2, 2024, operations personnel found the north flare header was "frosted." The frosting on the flare header piping originated at the Alkylation Tank Farm because Tank 57's vent was open. The excess gas to the flare header, and a blockage caused by the frosting allowed the south flare header pressure to rise. Operations personnel closed the vent around 3:45 a.m. and flaring ended at 4:07 a.m. on June 2, 2024.

The south flare header began to rise throughout the morning, however, the flaring did not reoccur. FCCU operations personnel used warm condensate to thaw the flare line and eliminate the blockage. Around 6:00 a.m., the Stratco charge pump vent at the Alkylation Unit was found to be open to the flare header. The vent was closed, and flare header pressure returned to within the normal operating range.

Respondent's investigation revealed that the status of Tank 57 and Stratco charge pump vents was not properly logged in the Alkylation/Polymerization Area shift log or communicated at shift change, so the flare surveys did not reveal the source of the flaring in a timely manner. Operations personnel were retrained on the importance of documenting and communicating venting to the flare header. Additionally, an operator round to check vents in the Polymerization Tank Farm was implemented.

A Notice of Violation dated November 25, 2024, was issued to Respondent on December 3, 2024, for the violations associated with the flaring events that occurred between April 26, 2024, and June 2, 2024, as described above.

FCCU Carbon Monoxide Boiler ("COB") Incidents

The FCCU is equipped with a COB and a selective non-catalytic reduction ("SNCR") system and wet gas scrubber ("WGS") train as pollution control devices to control carbon monoxide ("CO"), NO_X, SO_2, and particulate matter ("PM") emissions. The FCCU permit is structured to require operation of the FCCU with its flue gas routed through the COB and downstream SNCR and WGS at all times, except when operating in full burn mode. Both full burn mode and partial burn mode are normal operating scenarios for this unit. Partial burn mode results in lower NO_X emissions, and higher CO emissions such that the COB is necessary to reduce CO emissions. Full burn mode results in lower CO emissions without necessitating the use of the COB but higher NO_X emissions. When unplanned shutdowns of the COB occur, the permit requires the bypass line to be opened to allow for the treatment of regenerator flue gases in the WGS and requires complete combustion of CO to occur within 24 hours by shifting into full burn mode or restoring operation of the COB. During this bypass period, CO emissions are uncontrolled.

February 29, 2024

According to Respondent's Incident Report dated March 28, 2024, on February 29, 2024, at approximately 11:00 a.m., the refinery experienced a release of 5,005 lbs. of CO from the FCCU for 33 minutes when the unit inadvertently shifted into partial burn mode while the COB was out service for planned maintenance. The FCCU had been transitioned to full burn mode on February 28, 2024, in preparation for unit shutdown for planned maintenance as part of larger facility turnaround activities. Feed was switched from the FCCU feed drum to tankage. On February 29, 2024, process conditions changed and feed was diverted back to the FCCU feed drum. Feed and feed temperature changed unexpectedly, affecting the FCCU Regenerator combustion. Regenerator pressure and temperature fell creating an upset condition. Excess oxygen in the regenerator fell to 0% and caused FCCU to inadvertently shift to partial burn mode. With the COB out of service for maintenance, CO emissions rose above permitted levels at 11:16 a.m. Operations personnel responded, restoring stability and full burn mode by 11:44 a.m. CO emissions returned to permitted levels by 11:49 a.m.

In full burn operation, there are limited early indicators to alert the operator of complete combustion issues. Respondent implemented a procedural update to provide guidance on operating the pressure control valve on the COB bypass line, to maintain proper Regenerator pressure.

June 5-6, 2024

According to Respondent's Incident Report dated July 2, 2024, on June 5, 2024, a trip of the FCCU COB caused an exceedance of 198,000 lbs. of CO over a 7.6-hour period. At approximately 11:17 p.m. the Forced Air Draft Fan ("23-K-404B") tripped offline due to excess current, the loss of the fan caused the COB to trip offline and CO emissions to exceed permitted levels. Initial attempts to restart the fan were unsuccessful and at 11:34 p.m. the backup Forced Air Draft Fan ("23-K-404A") was placed into service and the feed rate was reduced. Attempts to relight the COB were unsuccessful. The FCCU was transitioned into full burn mode by 6:55 a.m., on June 6, 2024, returning CO levels to within permitted limits. The incident report indicates that a thunderstorm was the likely cause of a ground fault that caused the fan to trip offline.

June 10, 2024

According to Respondent's Flaring Incident Report dated July 3, 2024, at approximately 8:03 a.m. on June 10, 2024, an upset event lasting 3.5 hours caused the release of 16,689 lbs. of CO from the FCCU, and 2,160 lbs. of SO_2 from flaring. At approximately 8:03 a.m. the Main Air Blower ("23-K-1") tripped offline resulting in the loss of regenerator combustion air. Feed was cut at 8:04 a.m. to manage the loss of 23-K-1. The rate reduction resulted in less carbon to the regenerator which in turn, resulted in less flue gas to the COB. The decreased flue gas to the COB caused decreased wet gas product to the wet gas compressors. Wet gas product flow was below the minimum needed to operate both wet gas compressors, ("24-K-1" and "24-K-2"). 24-K-1 was taken offline to prevent damage to the unit. The low flue flow also caused a drop in temperature in the COB below the required 1300 °F for CO combustion. At 8:10 a.m. CO emissions exceeded permitted levels. 24-K-2 began to surge causing the pressure valve to lift to the flare line and flaring began at 8:33 a.m.

At 9:09 a.m. an E-stop wire was found to be loose and incorrectly seated. The wire was properly landed and tightened. Once reset, the E-stop condition no longer prevented 23-K-1 from operating. Operations personnel were able to slowly restart 23-K-1 at 9:12 a.m. Flaring ended at 11:35 a.m., and CO returned to within permitted levels at 11:38 a.m.

January 25, 2025

According to Respondent's Incident Report dated February 21, 2025, on January 25, 2025, at approximately 4:34 a.m. the refinery experienced a release of 188,260 lbs. of CO from the FCCU for 5.5 hours due to a trip of the COB. At 4:31 a.m. on January 25, 2025, the COB forced draft fan ("23-K-404B") tripped offline due to a low amp reading when the outlet damper for the fan failed closed. This caused the COB to trip offline and as a result, CO emissions began to rise, exceeding permitted levels at 4:34 a.m. Operations personnel began the process of restarting the COB. The COB reached the permitted temperature at 8:57 a.m. The flue was rerouted through the COB at 9:55 a.m. and CO emissions returned to permitted levels by 10:01 a.m. Respondent's investigation indicated that the likely cause of the damper positioner failure was high fan vibration. The damper positioner was replaced with a new magnetic feedback element. The new positioner was calibrated, and the software was updated.

A Notice of Violation dated February 10, 2025, was issued to Respondent on February 13, 2025, for the violations associated with the FCCU COB incidents that occurred on February 29, 2024; June 5-6, 2024; and June 10, 2024. A Notice of Violation dated May 20, 2025, was issued to Respondent the same day for the violations associated with the January 25, 2025, FCCU COB incident.

Coker COB Incidents

The Coker is equipped with a COB and wet gas scrubber ("WGS") train as pollution control devices to control CO, NO_X, SO_2, and PM emissions. NO_X and SO_2 emissions are controlled by the Selective Non-Catalytic Reduction (SNCR) system located in the Coker COB, and the downstream WGS train respectively. The Coker is also equipped with a Back-Up Incinerator ("BUI") which is allowed to operate during periods when the COB is down in order to control CO and PM emissions. During normal operation the Coker burner flue gas is routed to the Coker COB and WGS train. However, when the Coker COB and WGS train are bypassed, the Coker burner flue gas can be routed in one of two ways, i.e., either through the BUI, or through the bypass stack. The Coker permit is structured to require operation of the Coker with its flue gas routed though the COB and downstream WGS at all times. Routing the Coker burner flue gas to the BUI will control PM and CO emissions but will not control NO_X or SO_2 emissions. When the Coker flue gas is routed through the bypass stack, all pollutants are emitted uncontrolled and constitute unpermitted emissions. This uncontrolled release is also highly visible as the plume opacity is well above the 20% standard. It can take several hours to bring the BUI online in order to follow recommended BUI warm up procedures, when shorter duration unplanned outages occur, the Coker burner flue gas is not sent to the BUI but through the bypass stack.

March 13, 2025

Respondent's April 9, 2025, Incident Report indicated that the Coker COB tripped offline on March 13, 2025, at 10:25 a.m. The COB outage lasted 10.2 hours, and because Respondent utilized the bypass stack, it resulted in unpermitted emissions of 262,185 lbs. of CO; 38,145 lbs. of SO_2; 1,370 lbs. of ammonia ("NH_3"); 195 lbs. of hydrogen sulfide ("H_2S"); 175 lbs. of carbonyl sulfide ("COS"); and 161 lbs. of hydrogen cyanide ("HCN"). Operations personnel were attempting a routine swap from forced draft fan ("22-K-403A") to forced draft fan ("22-K-403B") in preparation for maintenance work on 22-K-403A. An error in the execution of the procedure for swapping the forced draft fans led to both discharge dampers being open on the offline fan. Air flow from the running forced draft fan back flowed to the offline forced draft fan which resulted in the trip of the COB at 10:25 a.m.

Flue gas was directed to the bypass stack at 10:35 a.m., and the COB was fully isolated by 11:00 a.m. The COB pilots were lit at 12:46 p.m. and normal firebox temperature of 1300 °F was restored at 6:18 p.m. Startup procedures continued through 8:00 p.m. Flue gas was redirected into the COB at 8:40 p.m. ending the release event. Respondent added warning text to the damper overlays in the control system for this procedure.

May 25, 2025, to June 11, 2025

On May 21, 2025, operations personnel noticed a change in the steam/water balance for the Coker COB. Initial inspections did not reveal any water leaks. However, on May 24, 2025, operations personnel observed a water leak from the Economizer area of the COB. At 12:25 p.m. on May 24, 2025, operations personnel began to bring the BUI online.

On May 25, 2025, at approximately 10:40 p.m., the Coker COB was shut down due to inability to maintain steam drum level due to the water tube leak. During the transition to direct flue gas to the BUI, it tripped offline due to a surge in gas; Coker flue gas was redirected to the bypass stack to allow for relighting of the BUI. On May 26, 2025, at 2:46 a.m., the BUI was relit and at the required temperature; so the flue gas was redirected back to the BUI.

On May 30, 2025, at approximately 8:40 p.m. the BUI tripped offline again. Coker flue gas was again diverted to the bypass stack to allow for relighting of the BUI. By 11:00 p.m. the BUI was back up to temperature; and the flue gas was returned to the BUI.

On June 4, 2025, at approximately 4:20 p.m., the BUI lost one burner causing the firebox temperature to dip below the permit requirement of 1700 °F, but the temperature remained sufficiently high enough to control CO. The burner was relit, and temperature was restored at 7:51 p.m.

The Coker COB was brought online on June 11, 2025, at 11:00 a.m. By 4:30 p.m. the firebox temperature was up to the required 1300 °F and start-up procedures were completed so, flue gas was returned to the COB and WGS train, ending the release event.

Inspections of the Coker COB revealed that multiple tubes from the Economizer section were leaking. Many tubes showed corrosion on the bottom side of the tube welds. To stop the leaking, seven tubes were cut and weld capped at the Economizer header. One additional leak was found at a crack at a small-bore drain connection to the superheater header. The crack allowed a small amount of leakage into the firebox, as well as external to the boiler. The leak was repaired, and final testing showed no remaining leaks.

Coker flue gas contains sulfur which can deposit and collect on the Economizer tubes. If moisture is introduced, it can react with the sulfur to form sulfurous acid which in turn corrodes the tubes. As a result of this incident, the Coker COB and FCCU COB maintenance plans were updated to include an acid neutralization step for the Economizer tubes. Additionally, the CO Boiler Reliability Plan will be updated to include cleaning and visual inspection between the Economizer banks of tubes. Finally, the Coker COB Economizer will be replaced during the next unit turnaround.

FINDINGS OF FACT

1. Respondent owns and operates a petroleum refinery located in Delaware City, Delaware whose operations are governed by a Title V Permit, issued pursuant to Regulation 1130, in three separate parts. Each part is renewed every 5 years following the prescribed permitting process. Revisions can occur as necessary and following the prescribed process. Respondent's Title V

Permit numbers referenced in this Order include the Part, Renewal and Revision in effect at the time of the violation.

2. Permit: AQM-003/00016-Part 2 (Renewal 2) issued August 18, 2022, ("TV Permit-Part 2 (Ren 2)") and Permit: AQM-003/00016-Part 2 (Renewal 2)(Revision 2) issued November 14, 2024, ("TV Permit-Part 2 (Ren 2) (Rev 2)") are applicable to the violations addressed by this Order.

3. Respondent experienced flaring events on April 26, 2024, (unpermitted release of 7,200 lbs. SO_2); May 6, 2024, (unpermitted release of 5,945 lbs. SO_2); May 8, 2024 (unpermitted release of 663 lbs. SO_2); May 15, 2024, (unpermitted release of 215 lbs. SO_2); and June 1, 2024 – June 2, 2024 (unpermitted release of 628 lbs. SO_2). A Notice of Violation dated November 25, 2024, was issued to Respondent on December 3, 2024, for the violations associated with these flaring events.

4. Between February 29, 2024, and June 10, 2024, Respondent experienced several FCCU COB incidents. On February 29, 2024, the FCCU inadvertently shifted from full burn to partial burn mode while the COB was out of service for planned maintenance. This resulted in excess emissions of 5,005 lbs. of CO. Between June 5, 2024, and June 6, 2024, a trip of the FCCU COB resulted in excess emissions of 198,000 lbs. of CO. On June 10, 2024, an upset event caused excess emissions of 16,689 lbs. of CO from the FCCU, and 2,160 lbs. of SO_2 from flaring. A Notice of Violation dated February 10, 2025, was issued to Respondent on February 13, 2025, for the violations associated with these FCCU COB incidents.

5. Respondent experienced another FCCU COB incident on January 25, 2025. The FCCU COB tripped offline resulting in excess emissions of 188,260 lbs. of CO. A Notice of Violation dated May 20, 2025, was issued to Respondent the same day for the violations associated with this incident.

6. Respondent experienced a Coker COB incident on March 13, 2025, when the Coker COB tripped offline. Coker burner flue gas was routed through the bypass stack and resulted in unpermitted emissions of 262,185 lbs. of CO; 38,145 lbs. of SO_2; 1,370 lbs. of NH_3; 195 lbs. of H_2S; 175 lbs. of COS; and 161 lbs. of HCN.

7. Respondent experienced a Coker COB outage between May 25, 2025, and June 11, 2025. The BUI was utilized as the primary control device for the Coker flue gas. However, the BUI tripped offline between May 25, 2025, and May 26, 2025, and again on May 30, 2025, which resulted in redirecting the flue gas to the bypass stack until the BUI was operational.

8. When the BUI was used as the control device between May 25, 2025, and June 11, 2025, it resulted in the unpermitted release of 928,820 lbs. SO2 and 68,775 lbs. of NOX. When the bypass stack was used May 25, 2025, to May 26, 2025, and again on May 30, 2025, when the BUI tripped offline, it resulted in the unpermitted released of 11,251 lbs. of SO_2, 166,760 lbs. of CO, 970 lbs. of NO_X, 5,976 lbs. of PM, 871 lbs. of NH_3, 124 lbs. of H_2S, 111 lbs. of COS, and 102 lbs. of HCN.

STATUTORY, REGULATORY AND PERMIT REQUIREMENTS

1. In 40 C.F.R. § 60.103(a), it states:

   "No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator any gases that contain carbon monoxide (CO) in excess of 500 ppm by volume (dry basis)."

2. In 7 *Del. C.* § 6003(a)(1) it states:

   "No person shall, without first having obtained a permit from the Secretary, undertake any activity in a way which may cause or contribute to the discharge of an air contaminant."

3. In Section 2.1 of 7 DE Admin. Code 1102, it states:

   "Except as exempted in Section 2.2 of this regulation, no person shall initiate construction, install, alter or initiate operation of any equipment or facility or air contaminant control device which will emit or prevent the emission of an air contaminant prior to receiving approval of his application from the Department or, if eligible, prior to submitting to the Department a completed registration form."

4. In Section 2.0 of 7 DE Admin. Code 1111, it states:

   "In New Castle County, no person shall cause or allow the emission of carbon monoxide from any catalytic regeneration of a petroleum cracking system, petroleum fluid coker, or other

petroleum process into the atmosphere, unless the carbon monoxide is burned at 1300 °F for 0.3 seconds or greater in a direct-flame afterburner or boiler, or is controlled by an equivalent technique."

5. In Section 2.0 of 7 DE Admin. Code 1114, it states in part:

   "No person shall cause or allow the emission of visible air contaminants or smoke from a stationary or mobile source, the shade or appearance of which is greater than 20% opacity for an aggregate of more than three minutes in any one hour or more than 15 minutes in any 24 hour period."

6. In Conditions 3 – Table 1.e.5.i.A of Title V Permit-Part 2 (Ren 2) and Title V Permit-Part 2 (Ren 2) (Rev 2), it states in part:

   "CO emissions from the FCCU WGS+ shall not exceed 500 ppmv dry as a 1-hour average…"

7. In Conditions 3 – Table 1.e.5.i.B of Title V Permit-Part 2 (Ren 2) and Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

   "The Owner/Operator shall not cause or allow the emission of carbon monoxide from the FCCU unless it is burned at no less than 1300 °F for at least 0.3 seconds in the FCCU COB, or combusted in the FCCU regenerator when operating in full burn mode."

8. In Condition 3–Table 1.da.1.i.C of Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

"The Belco pre-scrubber, the amine-based Cansolv regenerative WGS, the caustic polishing scrubber and SNCR system shall be operating properly at all times when the FCU is operating."

9. In Condition 3–Table 1.da.1.i.H.1 of Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

"Should the Owner/Operator operate the backup incinerator, the Owner/Operator shall abide by the following:

a. Carbon Monoxide combustion shall be achieved at a minimum of 1300 °F, and at a minimum retention time of 0.3 seconds; and

b. Maximum particulate matter emissions of 0.19 grain per dry standard cubic foot ("dscf") shall be achieved either by operating at a temperature of 1700 °F, a minimum excess of 1.9% O2 and a residence time of 2.0 seconds, or, at such other alternate operating conditions as have been demonstrated by testing to achieve equivalent emissions."

10. In Condition 3-Table 1.da.3.i.A of Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

"SO_2 emissions shall not exceed 25 ppmvd @ 0% O2 on a rolling 365-day average, 50 ppmvd @ 0% O2 on a rolling 7-day average, and 182.3 TPY"[2]

[2] Note: The concentration limits apply to the standard operating configuration, where the Coker flue gas is routed through the COB and WGS/SNCR train. The annual TPY limit applies to Emission Unit No. 22, inclusive of the FCU (the Coker), FCU (the Coker) WGS, FCU (the Coker) SNCR, FCU (the Coker) Start Up Heater, FCU (the Coker) Selas Steam Superheater, FCU (the Coker) COB, and FCU (the Coker) Back Up Incinerator.

11. In Condition 3–Table 1.da.5.i.B of Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

> *"The Owner/Operator shall not cause or allow the emission of carbon monoxide from the FCU unless it is burned at no less than 1300 °F for at least 0.3 seconds in the FCU COB."*

12. In Condition 3–Table 1.da.11.i of Title V Permit-Part 2 (Ren 2) (Rev 2), it states:

> *"The Owner/Operator shall not cause or allow the emission of visible air contaminants and/or smoke from any emission unit, the shade or appearance of which is greater than 20 percent opacity for an aggregate of more than 3 minutes in any 1 hour or more than 15 minutes in any 24 hour period."*

CONCLUSION

Based on the above, the Department has concluded that Respondent committed the following violations:

1. Respondent is found to be in violation of 7 *Del. C.* § 6003(a)(1) and Section 2.1 of 7 DE Admin. Code 1102, for the unpermitted release of SO_2 during flaring episodes that occurred April 26, 2024, (7,200 lbs.); May 6, 2024, (5,945 lbs.); May 8, 2024 (663 lbs.); May 15, 2024, (215 lbs.); and June 1, 2024 – June 2, 2024, (628 lbs.).

2. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1111 and Condition 3 – Table 1.e.5.i.B of Title V Permit-Part 2 (Ren 2), for allowing the emission of 5,005 lbs. of

CO without first burning at 1300°F for at least 0.3 seconds during the FCCU COB incident on February 29, 2024.

3. Respondent is found to be in violation of 40 C.F.R. § 60.103(a), and Condition 3 – Table 1.e.5.i.A of Title V Permit-Part 2 (Ren 2), for the discharge of CO in excess of 500 ppmv dry during the FCCU COB incident on February 29, 2024.

4. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1111 and Condition 3 – Table 1.e.5.i.B of Title V Permit-Part 2 (Ren 2), for allowing the emission of 198,000 lbs. of CO without first burning at 1300°F for at least 0.3 seconds during the FCCU COB incident between June 5, 2024, and June 6, 2024.

5. Respondent is found to be in violation of 40 C.F.R. § 60.103(a), and Condition 3 – Table 1.e.5.i.A of Title V Permit-Part 2 (Ren 2), for the discharge of CO in excess of 500 ppmv dry during the FCCU COB incident between June 5, 2024, and June 6, 2024.

6. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1111 and Condition 3 – Table 1.e.5.i.B of Title V Permit-Part 2 (Ren 2), for allowing the emission of 16,689 lbs. of CO without first burning at 1300°F for at least 0.3 seconds during the FCCU COB incident on June 10, 2024.

7. Respondent is found to be in violation of 40 C.F.R. § 60.103(a), and Condition 3 – Table 1.e.5.i.A of Title V Permit-Part 2 (Ren 2), for the discharge of CO in excess of 500 ppmv dry during the FCCU COB incident on June 10, 2024.

8. Respondent is found to be in violation of 7 *Del. C.* § 6003(a)(1) and Section 2.1 of 7 DE Admin. Code 1102 for the unpermitted release of 2,160 lbs. of SO_2 from flaring resulting from the FCCU COB incident on June 10, 2024.

9. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1111 and Condition 3 – Table 1.e.5.i.B of Title V Permit-Part 2 (Ren 2) (Rev 2), for the emission of 188,260 lbs. of CO without first burning at 1300°F for at least 0.3 seconds during the FCCU COB incident on January 25, 2025.

10. Respondent is found to be in violation of 40 C.F.R. § 60.103(a), and Condition 3 – Table 1.e.5.i.A of Title V Permit-Part 2 (Ren 2) (Rev 2), for the discharge of CO in excess of 500 ppmv dry during the FCCU COB incident on January 25, 2025.

11. Respondent is found to be in violation of 7 *Del. C.* § 6003(a)(1) and Section 2.1 of 7 DE Admin. Code 1102, for the unpermitted release of 262,185 lbs. of CO, 38,145 lbs. of SO_2, 1,370 lbs. of NH_3, 195 lbs. of H_2S, 175 lbs. of COS, and 161 lbs. of HCN when it routed Coker flue gas through the bypass stack during the Coker COB incident on March 13, 2025.

12. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1111 and Condition 3-Table 1.da.5.i.B of Title V Permit-Part 2 (Ren 2) (Rev 2), for the release of CO without first burning at 1300°F for at least 0.3 seconds during the Coker COB incident on March 13, 2025.

13. Respondent is found to be in violation of Condition 3-Table 1.da.1.i.C of Title V Permit-Part 2 (Ren 2) (Rev 2), for failing to

operate the Belco pre-scrubber, the amine-based Cansolv regenerative WGS, the caustic polishing scrubber and SNCR while the Coker continued to operate during the Coker COB incident on March 13, 2025.

14. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1114 and Condition 3-Table 1.da.11.i of Title V Permit-Part 2 (Ren 2) (Rev 2), for allowing the emission of smoke with an opacity greater than 20% for more than three minutes in an hour and 15 minutes in a 24 hour period as a result of routing the Coker flue gas through the bypass stack during the Coker COB incident on March 13, 2025.

15. Respondent is found to be in violation of 7 *Del. C.* § 6003(a)(1) and Section 2.1 of 7 DE Admin. Code 1102, for the unpermitted release of 11,251 lbs. of SO_2, 166,760 lbs. of CO, 970 lbs. of NO_X, 5,976 lbs, of PM, 871 lbs. of NH_3, 124 lbs. of H_2S, 111 lbs. of COS, and 102 lbs. of HCN through the bypass stack on May 25-26, 2025, and May 30, 2025.

16. Respondent is found to be in violation Section 2.0 of 7 DE Admin. Code 1111 and Condition 3-Table 1.da.5.i.B of Title V Permit-Part 2 (Ren 2) (Rev 2), for the release of CO without first burning at 1300°F for at least 0.3 seconds on May 25-26, 2025, and May 30, 2025, during the periods that the BUI tripped offline.

17. Respondent is found to be in violation of Section 2.0 of 7 DE Admin. Code 1114 and Condition 3-Table 1.da.11.i of Title V Permit-Part 2 (Ren 2) (Rev 2), for allowing the emission of smoke with an opacity greater than 20% for more than three

minutes in an hour and 15 minutes in a 24 hour period on May 25-26, 2025, and May 30, 2025 during the periods that the BUI tripped offline.

18. Respondent is found to be in violation of Condition 3-Table 1.da.1.i.C of Title V Permit-Part 2 (Ren 2) (Rev 2), for failing to operate the Belco pre-scrubber, the amine-based Cansolv regenerative WGS, the caustic polishing scrubber and SNCR while the Coker was operating between May 25, 2025, and June 11, 2025.

19. Respondent is found to be in violation of 7 *Del. C.* § 6003(a)(1) and Section 2.1 of 7 DE Admin. Code 1102, for the unpermitted release of 928,820 lbs. of SO_2 and 68,775 lbs. of NO_X uncontrolled through use of the BUI stack between May 25, 2025, and June 11, 2025.

20. Respondent is found to be in violation of the annual SO_2 limit of 182.3 TPY for Emission Unit No. 22 found in Condition 3-Table 1.da.3.i.A of Title V Permit-Part 2 (Ren 2) (Rev 2) as a result of the unpermitted release of 928,820 lbs. of SO_2 (464.4 tons of SO_2) uncontrolled through the use of the BUI stack between May 25, 2025, and June 11, 2025.

21. Respondent is found to be in violation of Condition 3–Table 1.da.1.i.H.1.b of Title V Permit-Part 2 (Ren 2) (Rev 2), for failing to meet the operating temperature requirement for the BUI of 1700°F when one of the burners went out on June 4, 2025.

ASSESSMENT OF PENALTY

Pursuant to 7 *Del. C.* § 6005(b)(3), the Secretary may impose an administrative penalty of not more than $10,000 for each day of violation detailed in this Order. In assessing the administrative penalty, 7 *Del. C.* § 6005(b)(3) instructs the Secretary to consider the following factors: (1) the nature, circumstances, extent, and gravity of the violation, or violations; (2) the ability of the violator to pay; (3) any prior history of such violations; (4) the degree of culpability; (5) the economic benefit or savings (if any) resulting from each violation; and (6) such other matters as justice may require. A brief discussion of these factors is set out below.

Having considered these factors, the Secretary is assessing an administrative penalty of $300,000 for the violations identified in this Assessment and Order.

1. **The Nature, Circumstances, Extent and Gravity of the Violation, or Violations:**
   The nature, circumstances, extent, and gravity of the violations are significant. The events of flaring, unit upsets, and control device bypasses detailed in this Order caused a total unpermitted release of 965,545 lbs. of SO_2, 836,899 lbs. of CO, 69,745 lbs. of NO_X, 5,976 lbs. of PM, 2,241 lbs. of NH_3, 319 lbs. of H_2S, 286 lbs. of COS, 263 lbs. of HCN, and visible emissions exceeding the regulatory limit. The total amounts emitted of these regulated pollutants are cumulatively substantial. Additionally, the SO_2 emissions from the Coker exceeded the annual SO_2 permit emission limit of 182.3 TPY by 155%.

2. **Respondent's Ability to Pay:**

The record contains no information that the Respondent does not have the ability to pay the administrative penalty assessed.

3. **Prior History of Violations:**
Respondent has had prior violations of these specific permit and regulatory requirements related to flaring events, the Coker COB outages, and the FCCU COB outages.

4. **Degree of Culpability:**
Factors the Department considered that impact Respondent's degree of culpability include whether it has employed reasonable measures to assure that violations that occur are brief in nature and have minimal impact on surrounding areas, and whether Respondent has taken sufficient measures to avoid repeat violations.

5. **Economic Benefit or Savings Resulting from the Violation(s):**
Although there may be circumstances where reduced throughput or other actions might be necessary to mitigate emissions, in these instances the Department did not believe that economic benefit was a factor impacting the penalty assessment.

6. **Such Other Matters as Justice May Require:**
Lastly, considering such other matters as justice may require, the Secretary has determined that the penalty assessed is proportional to the violations and calculated so as to deter Respondent and those similarly situated from engaging in future violations.

SECRETARY'S ORDER ASSESSING ADMINISTRATIVE PENALTY

Pursuant to 7 *Del. C.* § 6005(b)(3), this is written notice to Respondent that on the basis of its findings, the Department is assessing Respondent an administrative penalty of $300,000 for the violations identified in this Secretary's Order.

Respondent shall submit a check to the payable to the "State of Delaware" in the amount of $300,000 within thirty (30) days of receipt of this Secretary's Order to: Leslie Reese, Department of Natural Resources and Environmental Control, Office of the Secretary, 89 Kings Highway, Dover, Delaware 19901.

PUBLIC HEARING AND APPEAL RIGHTS

This Secretary's Order affects Respondent's legal rights and is effective and final upon receipt by Respondent. Pursuant to 7 *Del. C.* § 6008, any person whose interest is substantially affected by this action of the Secretary may appeal to the Environmental Appeals Board within 20 days of the receipt of the Secretary's Order. In the alternative, Respondent may, pursuant to 7 *Del. C.* § 6005(b)(3), request a public hearing on the Secretary's Order, within 30 days of receipt of the Order. A public hearing pursuant to 7 *Del. C.* § 6005(b)(3) would be conducted pursuant to 7 *Del. C.* § 6006, and the Secretary's Order following the hearing would be subject to appeal, pursuant to 7 *Del. C.* § 6008, by any person substantially affected.

Respondent is further advised that the above assessed administrative penalty shall be due and owing within 30 days of Respondent's receipt of this Assessment and Order. In the event of nonpayment of the administrative penalty assessed above, and after Respondent has exhausted all legal appeals, if any, a civil action may be brought by the Secretary in

Superior Court for collection of the administrative penalty, including interest, attorneys' fees and costs, and the validity, amount and appropriateness of such administrative penalty and/or costs shall not be subject to review pursuant to 7 *Del. C.* § 6005(b)(3).

To request a public hearing pursuant to 7 *Del. C.* § 6005(b)(3), please submit your request, in writing, to:

Department of Natural Resources and Environmental Control
Office of the Secretary
89 Kings Highway
Dover, DE 19901
Phone: (302) 739-9000

To submit an appeal to the Environmental Appeals Board pursuant to 7 *Del. C.* § 6008, you must file your written statement of appeal and submit a check, made payable to: "Environmental Appeals Board," for the $50.00 filing fee, to:

Department of Natural Resources and Environmental Control
Office of the Secretary
Attn: Assistant to the Environmental Appeals Board
89 Kings Highway
Dover, DE 19901
Phone: (302) 739-9000

For additional information on filing an appeal with the Environmental Appeals Board and what information you must include in your written statement of appeal, please refer to the Environmental Appeals Board Regulations, codified at 7 DE Admin. Code 105.

The Department, to the extent necessary, reserves the right to take additional enforcement actions regarding these and other violations by Respondent, including but not limited to one or more of the following: an action under 7 *Del. C.* § 6005(b)(1) seeking penalties for past violations, an action under 7 *Del. C.* § 6005(b)(2) seeking penalties for continuing violations, an action in the Court of Chancery pursuant to 7 *Del. C.* § 6005(b)(2) seeking a temporary restraining order or an injunction, and the imposition of civil penalties and recovery of the Department's costs and attorney's fees pursuant to 7 *Del. C.* §§ 6005(b)(3) & (c)(1). Nothing in this document shall be deemed to estop, or in any way preclude, any additional enforcement action for these and any other violations, including administrative and civil penalties for each day of violation, or an action for the recovery of Department costs expended in abating these violations.

PRE-PAYMENT

Respondent may prepay the administrative penalty of $300,000 in the manner described in the attached "Waiver of Statutory Right to a Hearing." By doing so, Respondent waives its right to a hearing and the opportunity to appeal or contest this Secretary's Order.

If you have any questions, please contact, or have your attorney contact, Valerie S. Edge, Deputy Attorney General, at (302) 739-4636.

December 21, 2025
____
Date

____
Gregory Patterson, Secretary
Department of Natural Resources
and Environmental Control

cc: Valerie S. Edge, Deputy Attorney General
Angela Marconi, P.E., Director

2025-3dcm Delaware City Refining Company, LLC Order.doc

WAIVER OF STATUTORY RIGHT TO A HEARING

Delaware City Refining Company, LLC hereby waives its right to a hearing and its opportunity to appeal or contest this Assessment and Order and agrees to the following:

1. **Delaware City Refining Company, LLC** will pay the administrative penalty in the amount of $300,000 by sending a check payable to the "State of Delaware" within 30 days of receipt of this Assessment and Order. The check shall be directed to Leslie Reese, Department of Natural Resources and Environmental Control, Office of the Secretary, 89 Kings Highway, Dover, Delaware 19901.

Delaware City Refining Company, LLC

Date: ___________________________ By: ___________________________

Title:___________________________