

April 26, 2022

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cc: Mohr

Illinois Environmental Protection Agency
Bureau of Air, Compliance Section (#40)
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STATE OF ILLINOIS

APR 28 2022

ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

RE: *Construction Permit No. 19100015 Quarterly Report – Q1 2022*
Vantage Specialties Inc., Gurnee, IL (Facility ID 097035AAQ)

To Whom It May Concern:

Vantage Specialties Inc. (Vantage Specialties) hereby submits the Quarterly Report for Construction Permit No. 19100015, for our plant located in Gurnee, Illinois (Facility ID 097035AAQ). On December 17, 2019, Vantage Specialties received Construction Permit No. 19100015, which sets an annual cap on the Gurnee Facility's emissions of Ethylene Oxide (EO) beginning in calendar year 2020. This report is submitted pursuant to Condition 7(a) of the Construction Permit. The Construction Permit conditions that specify quarterly report details are included below, shown in italics, with our responses to each condition following in bold.

General Conditions

Construction Permit No. 19100015 requires the following:

Condition 7 (a):

The Permittee shall submit quarterly reports to the Illinois EPA that include the following information. These reports shall be submitted within 30 days of the end of each calendar quarter.

This quarterly report covers the period of January 1, 2022, to March 31, 2022. This quarterly report is being submitted within 30 days of the end of the calendar quarter (i.e., by April 30, 2022).

(i). The information required to be reported in these quarterly reports by other conditions of this permit.

This quarterly report includes the information required by Conditions 7(a), 17(b), 17(c)(ii), 22(a), and 22(b)(ii) of Construction Permit No. 19100015.

(ii). A summary of the notifications required to be submitted by other conditions of this permit for deviations from the requirements of this permit, if any, during the quarter.

Please refer to the discussion of Condition 17(c)(ii) below.

(iii). For the first, second and third quarters for a calendar year:

- 1) The cumulative emissions of ethylene oxide in the calendar year from the affected facility in total and from affected components based on emission data collected through such period(s) and,*

Please see table below.

- 2) If cumulative emissions are more than 25, 50 or 75 percent, respectively, of the emission cap in Condition 3(a), a discussion of whether these cumulative emissions were the result of circumstances that are expected to be present in the remainder of the calendar year.

The cumulative emissions are not more than 25% of the emission cap in Condition 3(a).

Cumulative Emissions of Ethylene Oxide for the First Quarter of 2022

	Emission Cap (lbs/year) *	Cumulative Emissions (lbs for year-to- date)	Cumulative Emissions/ Emission Cap (%)
Affected Facility	110	7.48	6.80%
Affected Components	60	5.29	8.82%

Note: * Emission Cap per Condition 3(a) of Construction Permit No. 19100015. The cap limits emissions per calendar year.

(iv). With the quarterly report for the fourth quarter in each calendar year:

- 1) Emissions of ethylene oxide of the affected facility and from affected components for the calendar year, and
- 2) If emissions exceed the emission cap in Condition 3(a), provide the notification for the deviation from this cap pursuant to Condition 7(b)(i) in this quarterly report.

This permit condition does not apply to this quarterly report.

Affected Process Equipment

Construction Permit No. 19100015 requires the following:

Condition 17 (b):

In the quarterly reports required by Condition 7 (a), the Permittee shall provide information describing changes to the monitoring systems that are required by Conditions 13(a) and (b), if any, to improve the limit of quantification of these systems, including a description of the changes, the rationale for the changes, a description of the expected and actual result of the changes, and confirmation that the changes did not negatively affect the performance of the monitoring systems.

No changes were required by Conditions 13(a) and (b) to improve the limit of quantification of these systems during the reporting period.

Condition 17 (c)(ii):

Notifications for other deviations shall be submitted with the quarterly report.

On January 9 and 10, 2022 daily calibrations of the CEMS did not occur because of a malfunction to the laser in the analyzer. Vantage Specialties is reporting this as a deviation from Condition 13(c)(ii), which refers to 40 CFR 63.8(c), in which paragraph 63.8(c)(6) mentions calibrations at least once daily. The laser was replaced on January 10 and the daily calibrations were passed the following day and have been conducted daily.

On February 4 through February 21, 2022 daily calibrations of the CEMS did not occur because the system was on pause and not recording data. Vantage Specialties is reporting this as a deviation from Condition 13(c)(ii), which refers to 40 CFR 63.8(c), in which paragraph 63.8(c)(6) mentions calibrations at least once daily. The CEMS recorder was reset on February 21 and daily calibrations were passed the following day and have been conducted daily.

Affected Components

Construction Permit No. 19100015 requires the following:

Condition 22(a):

In the quarterly reports required by Condition 7(a), the Permittee shall include the following information for each monitoring campaign for affected components completed during the quarter. To the extent that the specified information is not yet available (e.g., maintenance of components in response to the campaign is not completed), such information shall be reported in the subsequent quarterly report.

(i). *General information for each monitoring campaign, including*

- 1) Responsible entity;
- 2) Start and end dates;
- 3) Number of monitoring personnel;
- 4) Total number of components in the affected facility;
- 5) Number of components monitored; and
- 6) Numbers of components, by the applicable reason (e.g., not in operation or not in ethylene oxide service at the time of the campaign), that were not monitored.

Please see below for the general information for the monitoring campaigns during the reporting period.

	January	February	March
Responsible entity	Montrose Air Quality Services	Montrose Air Quality Services	Montrose Air Quality Services
Start Date	1/11/2022	2/1/2022	3/1/2022
End Date	1/11/2022	2/2/2022	3/2/2022
Number of monitoring personnel	1	2	1
Total number of components in the affected facility	782	782	782
Number of components monitored	782	782	782
Numbers of components, by the applicable reason (e.g., not in operation or not in ethylene oxide service at the time of the campaign), that were not monitored	0	0	0

(ii). *Summary information for components that were not leaking for which maintenance was initiated as a result of the monitoring, including the numbers of components, by the type of component, for which maintenance was performed.*

There were no components that were not leaking for which maintenance was initiated as a result of the monitoring during the reporting period.

(iii). *Detailed information for each leaking component that was identified in the monitoring campaign, including:*

- 1) Component Identifier;

Monitoring system downtime (hours) in reporting period due to:	Max Analytical FTIR	Fox Thermal Gas Flowmeter
Monitor equipment malfunctions	48	0
Non-monitor equipment malfunctions	0	0
Quality assurance calibration	1.5	0
Other known causes	435.02	0
Unknown causes	0	0
Total CMS downtime	484.52	0
$[\text{Total CMS downtime}] \times (100) / [\text{Total source operating time}]$	23.42%	0%

For the 1.5 hours of quality assurance calibration, a quarterly Method 301 validation test and TOM efficiency test were performed on the CEMS.

For the 48 hours of “monitor equipment malfunction” downtime, the CEMS laser malfunctioned from January 9-11, 2022 and needed replacement.

For the 435.02 hours of “other known causes” downtime, the CEMS was on pause from February 4-22, 2022 and not actively recording data. Per Condition 16(d) of Construction Permit No. 19100015, the compendium of emissions was used to calculate EO emissions for this downtime, and the other downtimes mentioned above. Corrective actions, including daily documented checks of the CEMS recording status, have been implemented to prevent a repeat occurrence.

4. *A description of any changes in CMS, processes, or controls since the last reporting period:*

There have been no changes to the CMS, processes, or controls.

5. *The name, title, and signature of the responsible official who is certifying the accuracy of the report:*

See signature block below.

6. *The date of the report:* **April 26, 2022**

If there are any questions concerning this report, please do not hesitate to call Gurnee Environmental Engineer, Raymond Doerr, at (847) 249-6374.

Sincerely,



Bernie Stratton
Site Manager

4/26/2022
Date

