



United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

Air Branch Inspection Report
Unannounced Full Compliance Evaluation
Vantage Corn Processors, LLC
1425 60th Avenue SW
Cedar Rapids, Iowa 52404
FRS: 110035441509

Inspection Date(s):

August 20-23, 2024

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CONTENTS

INSPECTION OVERVIEW	3
INSPECTION OBJECTIVE.....	3
FACILITY CONTACT INFORMATION.....	3
FACILITY OVERVIEW	4
FACILITY OPERATIONS SUMMARY.....	4
FIELD ACTIVITIES SUMMARY	5
Measurement Activities	7
INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS.....	10

TABLES

Table 1. APPLICABLE PERMIT CONDITIONS, REGULATIONS AND STANDARDS.....	3
Table 2. PROJECT TEAM MEMBERS.....	3
Table 3. FACILITY CONTACT INFORMATION	3
Table 4. FIELD MEASUREMENT ACTIVITIES	7
Table 5. LDAR MEASUREMENT ACTIVITIES.....	8

APPENDICES

- A – Confidential Business Information (2 pages)
- B – Receipt for Documents (7 pages)
- C – Instrument Calibration Sheets (5 pages)
- D – CBI Containing Documents and Photographs

**This Contents page shows all the sections contained in this report
and provides a clear indication of the end of this report.**

INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the full compliance evaluation (FCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements listed in **Table 1**.

Table 1. APPLICABLE PERMIT CONDITIONS, REGULATIONS AND STANDARDS

Code of Federal Regulation	Standard Name
40 CFR Part 60	Subpart A – General Provisions
40 CFR Part 60	Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR Part 60	Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984
40 CFR Part 60	Subpart DD—Standards of Performance for Grain Elevators
40 CFR Part 60	Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006
40 CFR Part 60	Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 CFR Part 63	Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
40 CFR Part 63	Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 CFR Part 63	Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
	Title V Permit Requirements

Table 2 lists the inspection team members.

Table 2. PROJECT TEAM MEMBERS

Team Member	Organization	Project Role
Charlotte Papp	EPA Region 7, ECAD, Air Branch	Lead inspector
Christopher Appier	EPA Region 7, ECAD, Air Branch	Field team member
Andrea Hankemeier	Linn County Public Health	Field team member
Jia Timmerman	Linn County Public Health	Field team member

FACILITY CONTACT INFORMATION

Table 3 lists the primary facility contacts alphabetically.

Table 3. FACILITY CONTACT INFORMATION

Name, Title	Phone No.	Email Address
Mitch Boysen, Distillation SME	319-398-4313	Mitchel.boysen@adm.com
Angeline Chung, Env. Manager	319-398-0632	Angeline.chung@adm.com

Gabe Dawes, LDAR	319-398-0887	Gabriel.dawes@adm.com
Tim Fox, LDAR	319-398-6318	Timothy.fox@adm.com
Laura Leshner, Env. Specialist	319-398-0676	Laura.lesher@adm.com
Brian Mullins, Plant Manager	319-398-0721	Brian.mullins@adm.com
Johnathan Stoltz, Mash Prep SME	319-899-5021	Johnathan.stoltz@adm.com
Rebecca Wasson, Dry Grind Supt	319-536-7241	Rebecca.wasson@adm.com

FACILITY OVERVIEW

Vantage Corn Processors, LLC (VCP) is a wholly owned subsidiary of Archer Daniel Midland (ADM). Prior to 2020, the facility was considered as a part of the ADM plant in Cedar Rapids, IA (FRS ID: 110010507503). On January 1, 2020, the Dry Mill operations of the ADM plant split into a separate company, VCP, and have been permitted as a separate entity since that time. The facility is located in the Cedar Rapids Industrial Complex adjacent to the ADM wet mill. The complex as a whole shares utility lines, and wastewater from VCP is treated together with ADM wastewater at both facilities. That is, there is pipework between the two wastewater treatment plants and VCP and ADM will send water back and forth routinely to be treated at either location.

The facility uses NAICS Code 325193 – Ethyl Alcohol Manufacturing and SIC code 2869 – Industrial Organic Chemicals.

The facility has reported deviations in each submitted semi-annual report since 2020. From April 5, 2021, to December 20, 2022, the facility was not able to demonstrate 98% reduction efficiency for the Regenerative Thermal Oxidizer (RTO). A performance test dated June 13, 2023, demonstrated compliance with the 98% volatile organic compound (VOC) reduction requirement.

According to VCP's Title V operating permit issued by the Iowa Department of Natural Resources (IDNR) on January 1, 2020, the facility is subject to the regulations and standards subject to review during this inspection as noted in **Table 1**.

FACILITY OPERATIONS SUMMARY

The facility produces denatured ethanol as a primary product, along with Distillers Dried Grains with Solubles (DDGS) and corn oil as secondary products.

Corn is brought to the facility via truck and railcar, and is unloaded into grain elevators. Particulate matter from the elevators is controlled via baghouses CE-400 and CE-401. The corn is conveyed to the dry mill where it is ground. Particulate matter from the dry mill is controlled via baghouses 403A, B, and C. The ground corn is then taken to the mash prep building where it

is mixed with water to create a slurry which is then fed into the fermentation tanks. There are approximately 20 fermentation tanks onsite, each connected in series. The mash will travel through all 20 tanks during the fermentation process. After fermentation, liquids are separated from solids and taken to the distillation units. Vapors from the fermentation and distillation process are routed through a RTO and scrubber. Once distilled, the alcohol is stored in storage tanks where it is mixed with denaturant before being pumped into final product storage tanks. The final ethanol product is shipped offsite via rail. The ethanol loadout process includes vapor recovery units which are vented to two enclosed flares CE-450 and CE-451.

Solids that are separated after fermentation are processed further via centrifuge to separate out corn oil. That oil is taken to the tank farm for storage and loadout via truck or rail. Remaining solids are dried via dryers to create a DDGS product which is stored in a silo onsite and transported offsite primarily via rail. Emissions from the DDGS process are controlled via low NOx burners CE-425 through CE-429 A-B and baghouses CE-422 and CE-423. The DDGS storage silos are controlled via baghouses CE-481, CE-482, and CE-497. Wastewater is pre-treated either onsite at VCP or at the neighboring ADM facility. The wastewater treatment plant (WWTP) includes scrubbers and flares for vapor control.

FIELD ACTIVITIES SUMMARY

We arrived at the facility on August 20, 2024, at 8:43 a.m. and completed a drive by surveillance inspection. I did not observe visible emissions. The inspection team and I made entry at the security office where I introduced myself and members of the inspection team, presented my credentials, and provided my business card to Ms. Angeline Chung. We were escorted to a training room to conduct the opening conference. I conducted an opening conference during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA, specifically to determine compliance with the regulations and standards listed in **Table 1**. I explained that after asking for some general business information, I would observe process units and control equipment, and also review associated records demonstrating compliance with the regulations. I explained to Ms. Chung that the facility would have an opportunity to make a claim of business confidentiality at the end of the inspection and provided her with a Confidential Business Information (CBI) form. Ms. Chung made a claim of confidentiality onsite with regard to all photographs and videos taken during the inspection and again later via email with regard to records submitted (**Appendix A**).

The inspection team was given a facility safety briefing prior to starting a facility tour with Ms. Chung, Ms. Wasson, and Ms. Leshner. We were asked to wear the following PPE for general site safety: hard hat, safety glasses, steel-toed boots, and cut-resistant gloves.

The site tour began with truck and rail unloading of corn and continued to the dry mill. Afterwards we saw the RTO, then we observed and took photographs of Emergency Generator 2. We continued our tour with the fermentation and distillation units. While walking around the various process areas, we observed the exhaust stacks for the feed dryers, mill baghouses, and ethanol cooler baghouses. We briefly observed the corn oil loadout area and tank farm, following by the DDGS loading area. We concluded at the WWTP and then returned to the training room where we broke for lunch at approximately 1:15 p.m.

The inspection team returned from lunch at 2:45 p.m. and were escorted to the fire pump building where we observed the emergency generators located within the building. We then went to the tank farm for a more in-depth look at the tanks. We returned to the training room at approximately 4:15 p.m. and broke for the day.

We arrived onsite on day 2 (August 21, 2024) at 9:08 a.m. We began doing comparative Leak Detection and Repair (LDAR) monitoring at the tops of the fermentation tanks. At 11:47 a.m., we continued the comparative monitoring at the tank farm and ethanol rail loadout. We resumed monitoring after lunch at the tank farm until we left for the day at 5:15 p.m.

We arrived onsite on day 3 (August 22, 2024) at 8:56 a.m. We went to the distillation building to perform comparative LDAR monitoring. We broke for lunch at 1:45 p.m. and returned at 3:23 p.m. We went to the DDGS dryer process unit where I was able to observe the dryer stacks with the Forward Looking Infra-Red (FLIR) camera. We went to the dryer process area control room and observed live data. We returned to the conference room at 4:23 p.m. and briefly discussed records before departing the facility at 4:33 p.m.

We arrived onsite on day 4 (August 23, 2024) at 9:34 a.m. for the closing conference. I conducted a closing conference with the facility staff members listed in **Table 3**. I provided the facility with copies of the small business resource information sheet and Receipt for Documents (**Appendix B**). I obtained copies of the records as indicated on the Receipt for Documents and requested digital copies to be sent to me electronically. We agreed to a rolling deadline where documents would be submitted each week for the following four weeks. On September 24, 2024, I received the final installation of documents requested via an email from Ms. Chung. We departed the facility at 9:54 a.m.

Site sampling activities are described in the **Measurement Activities** section below.

Observations and potential findings from the facility tour, records review, and sampling/measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

Measurement Activities

Christopher Appier, Andrea Hankemeier, Jia Timmerman, and I conducted field measurements during the onsite inspection under my direction. In total, we deployed two TVA 2020s, one GX320 FLIR camera (intrinsically safe), and one GF320 FLIR camera. All instances of exceedances (readings above 500 ppm/10,000 ppm with TVAs and plumes visible with FLIR cameras) were confirmed both by EPA staff and the facility staff, unless otherwise noted. **Table 4** summarizes field measurement and field sampling activities. A copy of the daily calibration record for the TVAs is provided in **Appendix C**.

All environmental measurement activities were performed in accordance with the EPA Region 7 quality system, which in turn complies with EPA Method 21 monitoring requirements. Chris Appier and I calibrated all equipment and followed manufacturer and EPA processes for instrument calibration. Instrument calibration was documented for TVAs using daily calibration sheets. Instrument calibration for FLIR cameras is documented via an internal equipment database.

Table 4 summarizes field measurement activities.

Table 4. FIELD MEASUREMENT ACTIVITIES

Location Identifier	Date(s) and Time	Method and/or Procedure ¹ , and Equipment	Measurer Name
TVA Measurement Activities			
Fermentation Tanks, Ethanol Rail loadout, and Tank farm	8/21/24	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo Fisher Scientific, Model No. TVA 2020, Serial No. 202019034113	Charlotte Papp
xxx*	8/21/24	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo Fisher Scientific, Model No. TVA 2020, Serial No. 202017072446*	*Was not deployed due to calibration issue
Distillation Building	8/22/24	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo Fisher Scientific, Model No. TVA 2020, Serial No. 202017072446	Chris Appier
Distillation Building	8/22/24	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo Fisher Scientific, Model No. TVA 2020, Serial No. 202019034113	Andrea Hankemeier
FLIR Camera Measurement Activities			
Site tour and tank farm. Videos FLIR0013-0020	8/20/24 See video log	Region 7 procedure: <i>FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras,</i> Equipment: Teledyne, Model No. GX320, Serial No. 10400138	Chris Appier

Location Identifier	Date(s) and Time	Method and/or Procedure ¹ , and Equipment	Measurer Name
Tank Farm: Videos MOV_0049-0054	8/20/24 See video log	Region 7 procedure: FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras, Equipment: Teledyne, Model No.GF320, Serial No. 44401969	Charlotte Papp
Tank Farm: Videos MOV_0059-0061	8/21/24 See video log	Region 7 procedure: FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras, Equipment: Teledyne, Model No.GF320, Serial No. 44401969	Andrea Hankemeier
Fermentation Tanks, Ethanol rail loadout and Tank Farm: Videos FLIR 0021-0047	8/21/24 See video log	Region 7 procedure: FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras, Equipment: Teledyne, Model No.GX320, Serial No. 10400138	Chris Appier
Distillation building and dryer stacks. Videos MOV_0072-0075	8/22/24 See video log	Region 7 procedure: FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras, Equipment: Teledyne, Model No.GF320, Serial No. 44401969	Charlotte Papp
Distillation building. Videos FLIR0048-0050	8/22/24 See video log	Region 7 procedure: FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras, Equipment: Teledyne, Model No.GX320, Serial No. 10400138	Jia Timmerman
¹ The current version of each procedure, at the time of the investigation, was followed.			

Table 5 summarizes LDAR activities performed onsite.

Table 5. LDAR MEASUREMENT ACTIVITIES

Process Unit	Date(s) and Time	Areas monitored	Exceedances found	Measurer Name	Confirmed by:
Fermentation Tanks	8/21/24 10 am to 11:45 am	All reachable components from tank decks on all tanks	PRV on Tank 13 had plumes visible with FLIR. Was not able to reach the component for TVA monitoring	Chris Appier	N/A
Ethanol Rail Loadout	8/21/24 11:45 am to 1:15 pm	Reachable components of upper loading arm and lower loading area pipes and connections (approx. 40-50 valves)	None		
Tank Farm	8/21/24 3 pm to 5 pm	Loadout pump 8, storage tank 2, and day tank 2 (approx. 80	Valve at base of Day Tank 2 – 1.5% methane reading	Charlotte Papp	Facility
			Rubber seam at base of Day Tank 2 – 1.30% methane reading	Charlotte Papp	Facility

Process Unit	Date(s) and Time	Areas monitored	Exceedances found	Measurer Name	Confirmed by:
		valves)	Pipe entering concrete base of Day Tank 2 – 1.37% methane reading (first time) 2.25% methane reading (second time)	Charlotte Papp	Facility flamed out when trying to confirm
Distillation	8/22/24 9:45 am to 1:30 pm	Level 180, 160, 140, 120, and ground floor (approx. 210 components)	Valve 405102N044 – 4000 ppm reading when in service, when shut off 500/20 ppm reading	Charlotte Papp	Facility was informed, but could not confirm
			Valve 007999 – 1.54% reading	Charlotte Papp	Facility
			Facility made a first attempt at repair onsite. When re-monitored, instrumentation read 0 ppm		
			190 Vapor Condenser – Flame out	Chris Appier	Facility
			Mole Sieve 2 valve – Flame out	Chris Appier	Facility
			Mole Sieve 3 valve – flame out	Charlotte Papp	Facility
			Valve 7229.4 – 1.45% reading	Charlotte Papp	Facility
			Facility made a first attempt at repair onsite. When re-monitored, instrumentation read 0.2 ppm		
			Train 1 sample station – 1.3% reading	Chris Appier	Facility began repair before confirming
			Facility made a first attempt at repair onsite. When re-monitored, instrumentation read 200 ppm		
			Line 7757 – 3000 ppm reading	Charlotte Papp	Facility
			Facility made a first attempt at repair onsite. When re-monitored, instrumentation read 740 ppm		

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions, and field activities were documented in the field records. All photographs were claimed as CBI and are located in a restricted access folder alongside other documents claimed as confidential. For ease of reference, they will be referred to as **Appendix D**. I made the following observations during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Recordkeeping:

Emission-Point Specific Conditions for Emission Points SEP-400 and SEP-401 (permit page 16) requires VCP to keep differential pressure logs and weekly visible emission observation logs for baghouses CE-400 and CE-401. These recordkeeping requirements encompass requirements of 40 CFR Part 60, Subpart DD. The logs must be kept for a period of five years and made available to the Administrator or their designee upon request. In addition, VCP must keep a record of the unit's most recent stack test which specifies the range of baghouse pressure drop observed. The pressure drop logs were available and appeared complete for the past five years. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 were dated but observations were left blank. There were notes on some of the forms and some of the semi-annual reports about extensive shutdowns but not all. The most recent performance tests for these units occurred on September 8 and 9, 2010, and demonstrated compliance with emission limits.

Emission-Point Specific Conditions for Emission Point SEP-403 (permit page 22) requires VCP to keep differential pressure logs, an Operation and Maintenance Plan, and a Compliance Assurance Monitoring (CAM) plan for baghouses CE-403A, B, and C. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The pressure drop logs were available and appeared complete for the past five years. The Operation and Maintenance Plan and CAM plan were reviewed and appear to include sufficient guidance for compliant baghouse operation.

Emission-Point Specific Conditions for Emission Points SEP-410, SEP-411, SEP-413, SEP-414, SEP-415, and SEP-416 (permit page 27) requires VCP to keep a record of VOC and hydrogen sulfide (H₂S) emissions on a monthly basis, including a 12-month rolling total using EPA's WATER9 model (or equivalent). These recordkeeping requirements encompass requirements of 40 CFR

Part 63, Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The VOC and H₂S calculations were available and appeared complete for the past five years. The underlying data used to calculate the VOC and H₂S levels appeared to have come from lab testing results and used EPA's WATER9 modeling protocol.

Emission-Point Specific Conditions for Emission Point SEP-412 (permit page 31) requires VCP to keep pH records for the Merichem scrubber, inspection and maintenance records for the scrubber and flare, weekly visible emission observation records, and Continuous Emission Monitoring System (CEMS) recorded data. These recordkeeping requirements encompass requirements of 40 CFR Part 63, Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. All records were available and appeared complete for the past five years. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 are dated, but observations were left blank.

Emission-Point Specific Conditions for Emission Point SEP-420 (permit page 36) requires VCP to keep the following records for the distillation process unit and control devices CE-420A (Carbon Dioxide Scrubber), CE-420B (Regenerative Thermal Oxidizer), and CE-420C (Distillation NCG Scrubber): 12-month rolling total calculations of total gallons of denatured ethanol produced at facility, inspection and maintenance records of control devices, scrubber flow rate records, performance test reports, temperature records (RTO), start up, shutdown and malfunction plan (SSMP), weekly visible emission observation forms, and an Operation and Maintenance Plan. These recordkeeping requirements encompass requirements of 40 CFR Part 63, Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The ethanol production records, inspection and maintenance records, scrubber flow rate records, and temperature records were available and appeared complete for the past five years. The Operation and Maintenance Plan and SSMP were reviewed and appear to include sufficient guidance for compliant operation. The most recent performance test was conducted on June 13, 2023, and demonstrated compliance with emission limits and the 98% reduction efficiency requirement for the RTO. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 are dated, but observations were left blank.

Emission-Point Specific Conditions for Emission Points SEP-422 and SEP-423 (permit page 44) requires VCP to keep weekly visible emission observation records, differential pressure records, performance test reports, and monthly VOC emission calculations for DDGS Coolers 1 and 2. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The weekly emission observation logs appeared present for the

past five years. Some forms from 2020 and 2021 are dated, but observations were left blank. Differential pressure records were provided and appear complete for the past five years. However, while the permit specified the acceptable pressure range for baghouses CE-422 and CE-423 as between 0.5" of water column (w.c.) and 8" w.c., the form used for recording the differential pressure lists a range of 0.1 to 12.0 (no units are listed, but given the context it is assumed to be " w.c.) This discrepancy is minor and likely just a matter of updating the permit or form to have consistent values. The most recent performance test for both units occurred on October 10 and 11, 2016, and demonstrated compliance with emission limits. Monthly VOC calculations were provided and appear complete for the past five years. While trying to replicate the calculations used by the facility, I noticed two minor discrepancies. The 2016 performance test resulted in a VOC lb/ton emission rate of 0.029 for DDGS Cooler 1 and 0.049 lb/ton for DDGS Cooler 2. Looking at the calculations provided, it would seem that DDGS cooler 2 is using an emission rate of 0.0296 lb/ton while DDGS Cooler 1 is using an emission rate of 0.0403 lb/ton. The second discrepancy is the emission rate from the performance test report is given as 0.049 lb/ton, but the value used is 0.0403 lb/ton, which is not rounded correctly. The emissions limit is a combined total VOC emission rate of 0.216 lb/ton for both coolers, so the rounding error is not significant enough to create non-compliance.

Emission-Point Specific Conditions for Emission Points SEP-425, SEP-426, SEP-427, SEP-428, and SEP-429 (permit page 49) requires VCP to keep operating temperature records, performance test reports, monthly fuel usage records, fuel supply certifications, semi-annual reports, inspection and maintenance records, weekly visible emission observation records, and an Operation and Maintenance Plan for each dryer with low NOx burners. These recordkeeping requirements encompass requirements of 40 CFR Part 60, Subpart Dc and 40 CFR Part 63, Subpart DDDDD. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The operating temperature records, fuel usage and supply records, and inspection and maintenance records appeared complete. The Operation and Maintenance Plan was provided and appeared to include sufficient guidance for compliant operation. The most recent performance test occurred on June 17-21, 2024, and demonstrated compliance with emission limits. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 are dated, but observations were left blank. All semi-annual reports were provided and appear complete.

Emission-Point Specific Conditions for Emission Points SEP-440, SEP-441, SEP-442, SEP-443, SEP-444, SEP-445, SEP-447, SEP-448, and SEP-449 (permit page 55) requires VCP to keep product/chemical throughput records, VOC emission calculations including 12-month rolling totals, general inspection and maintenance records, and tank specific inspection reports for each tank. These recordkeeping requirements encompass requirements of 40 CFR Part 60,

Subpart Kb and 40 CFR Part 63, Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The throughput and inspection records appeared complete. The VOC emission calculations appeared complete for the past five years. Records provided had the total VOC emissions from each tank for each month, but I was not able to verify the method used to calculate those total emissions.

Emission-Point Specific Conditions for Emission Points SEP-450 and SEP-451 (permit page 64) requires VCP to keep hatch seal inspection records (for each of the eight loadout bays), total ethanol loadout values including 12-month rolling totals, weekly visible emission observations, and an Operation and Maintenance Plan for the ethanol loadout station. These recordkeeping requirements encompass requirements of 40 CFR Part 60, Subpart VV and 40 CFR Part 63, Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The hatch seals were included as a preventative maintenance item on the overall maintenance record sheet provided. The total ethanol loadout values appeared complete for the past five years and demonstrated compliance with the 752,325,000 gallons per year limit. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 were dated, but observations were left blank. The Operation and Maintenance Plan was provided and appeared to include sufficient guidance for compliant operation.

Emission-Point Specific Conditions for Emission Points SEP-452, SEP-453, SEP-454, SEP-455, and SEP-457 (permit page 69) requires VCP to keep a log of operating hours and maintenance records for each emergency generator. These recordkeeping requirements encompass requirements of 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. Both the operating logs and maintenance records were thorough and complete for all generators for the past five years. No generator was operated more than the 100 hours/year non-emergency use limit.

Emission-Point Specific Conditions for Emission Point SEP-478 (permit page 75) requires VCP to keep differential pressure readings, weekly visible emission observation forms, performance test reports, and an Operation and Maintenance Plan for the baghouse. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The differential pressure records were complete for the past five years. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 are dated, but observations are left blank. The most recent performance test occurred on May 10, 2018, and demonstrated compliance with emission limits. The Operation and Maintenance Plan was provided and appeared to include sufficient guidance for compliant operation of the baghouse.

Emission-Point Specific Conditions for Emission Points SEP-481, SEP-482, and SEP-497 (permit page 84) requires VCP to keep differential pressure readings, weekly visible emission observation forms, performance test reports, and manufacturer specifications for each baghouse. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The differential pressure records were complete for the past five years. The weekly emission observation logs appeared present for the past five years. Some forms from 2020 and 2021 are dated, but observations are left blank presumably due to process shutdowns. The most recent performance test for CE-481 occurred on May 9-10, 2018, and demonstrated compliance with emission limits. The most recent performance test for CE-482 occurred on July 18, 2017, and demonstrated compliance with emission limits. The most recent performance test for CE-497 occurred on November 6, 2012, and demonstrated compliance with emission limits. Manufacturer specifications were provided for the baghouses; however, these specifications did not explicitly list a differential pressure operating range. The current ranges being used (0.5"-8" w.c. for 481 and 497 and 0.2"-6.0" w.c. for 482) seem appropriate given the differential pressure recorded during each unit's most recent performance test.

Emission-Point Specific Conditions for Emission Point SEP-486 (permit page 91) requires VCP to keep Total Dissolved Solids (TDS) testing data and inspection and maintenance records for the drift eliminators. These recordkeeping requirements encompass requirements of 40 CFR Part 63 Subpart FFFF. The documents must be kept for a period of five years and made available to the Administrator or their designee upon request. The TDS test records appeared complete and demonstrated compliance with the 4,500 mg/l limit. Maintenance and repair records were provided for the cooling towers.

Potential Finding 1: Incorrect classification of LDAR components
Observation Summary: The fermentation tanks and process area are not monitored as part of the LDAR program, likewise, many components are listed as "Exempt" without proper designation
Citation: 40 CFR 60.482-2(a), 40 CFR 60.482-7(a)
Evidence: CBI-Appendix D
Description of Observation: The facility is required by 40 CFR Part 60, Subpart VV to identify and classify components that are in fluid service. These components are further classified into gas/vapor service, light liquid service, and heavy liquid service. Monitoring exemptions apply based on certain criteria including specific types of components (e.g. Pressure Relief Valves with rupture disks upstream of pressure relief device), the type of service that the component fall under (e.g. vacuum service is exempt), or the location/condition of the component (e.g. difficult or unsafe to monitor).

Potential Finding 1: Incorrect classification of LDAR components

The facility provided a list of all components as required by Subpart VV. A significant number of components are categorized as being in heavy liquid service including the entire fermentation process, and thus exempt from monitoring requirements.

There are a large group of components listed as being in light liquid or gas/vapor service and exempt under “instrument frequency.” While most of these entries do not have a listed date for the most recent inspection, the most recent date found on any of these entries was in 2019. None of these components is listed as difficult or unsafe to monitor. A small percentage of these components are listed as valves and the rest are listed as connectors. It is unclear as of the date of this report why these components are listed as exempt. Further investigation into this and the classification of components in heavy liquid service is warranted.

Potential Finding 2: Open vents with plumbing from most tanks

Observation Summary: Plumes of emissions were seen via FLIR camera on almost all tanks. This resulted from vents on the tank roofs being left open.

Citation: 40 CFR 60.112b(a)(1)(iv), 40 CFR 60.112b(a)(1)(v)

Evidence: FLIR videos: FLIR0016-0020, FLIR0042-0043, FLIR0046-0047, MOV_0049-0061

Description of Observation: While on the facility site tour and during comparative LDAR monitoring, numerous tanks were observed to have plumes of emissions coming from upper vents. When asked about the cause, the facility staff told Chris Appier that they believed a technician had left the vents on the tank roofs open during a recent maintenance project. The extent of emissions visible with the FLIR cameras is more than would be expected from a tank roof that was properly closed/sealed/gasketed. Further investigation into this matter is warranted.

Potential Finding 3: Day Tank 2 emissions from concrete base

Observation Summary: Emissions were measured coming from the concrete base under Day Tank 2

Citation: 40 CFR 60.11(d)

Evidence: Field Notes, FLIR video: FLIR0044

Description of Observation: While conducting comparative LDAR monitoring, three elevated readings were found coming from the concrete base of Day Tank 2, these were a valve at base of Day Tank 2 – 1.5% methane reading, a rubber seam at base of Day Tank 2 – 1.30% methane reading and a pipe entering concrete base of Day Tank 2 – 1.37% methane reading (first time) and 2.25% methane reading (second time). General leak detection standards take 500 ppm as the limit for “no detectable emissions” and 10,000 ppm (or 1%) as the threshold for the leak definition. The facility confirmed all three readings but were unable to attempt repair due to the nature of the source. Given the location and high-level readings (facility equipment flamed out while trying to monitor), it is likely there is a leak within the tank or nearby pipework that needs to be identified and fixed.

End of report.