



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

Air Branch

**Air Branch Inspection Report
Unannounced Partial Compliance Evaluation**

Cargill, Inc.

650 Industrial Park Drive
Blair, Nebraska 68008
FRS# 110059765696

Inspection Date(s):

April 24-26, 2024

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Charlotte Papp, Inspector, ECAD, Air Branch

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- A – Confidential Business Information Form (4 pages)
- B – Receipt for Documents (1 of page)
- C – Documents Requested (2 pages)
- D – List of components monitored (3 pages)
- E – Field Photographs (62 pages)

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and provides a clear indication of the end of this report.**

INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the partial compliance evaluation (PCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements listed in **Table 3** below. The inspection was part of the U.S. Environmental Protection Agency's (EPA) core program.

Table 1 lists the inspection team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Lead Inspector Charlotte Papp	EPA Region 7, ECAD, Air Branch	Project manager (PM)
Christopher Appier	EPA Region 7, ECAD, Air Branch	Field team member
Elli Winkler	Nebraska Department of Environment and Energy	Field team member (present Day 1 and morning of Day 2)

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts alphabetically during the inspection.

Table 2. FACILITY CONTACT INFORMATION		
Name	Title	Email Address
Mohammad Allavddin	EtOH/Utilities Supervisor	Mohammad_allavddin@cargill.com
Tim Aydt	EtOH/Utilities Team Lead	Timothy_aydt@cargill.com
Daniel Gernant	Env. Sr Spec.	Daniel_gernant@cargill.com
Matt Gutzmann	Facility Manager	Matthew_gutzmann@cargill.com
Ashleigh Harvey	EHS Specialist	Ashleigh_harvey@cargill.com
Joe Hossley	Env. Sr. Spec.	Joe_hossley@cargill.com
Justin Klitzk	PE Lead	Justin_klitzk@cargill.com
Kevin Kraft	MT Engineer	Kevin_kraft@cargill.com
David Nemechek	Reliability Coordinator EtOH	David_nemechek@cargill.com
Austin Pond	Germ Supervisor	Austin_pond@cargill.com
Nick Remm	EHS Supervisor	Nick_Remm@cargill.com

FACILITY OVERVIEW

Cargill, Inc. – Blair (Cargill) is a corn wet milling facility located on an industrial campus encompassing both Cargill owned facilities, and facilities owned and operated by third party companies that use products from Cargill as part of their operations. The facility primarily produces fructose, ethanol, and corn oil. Other products include corn germ, gluten meal, lactic acid, and fiber feed materials. The facility, Ethanol Plant 1 (Plant 1), initially opened in 1995, while Ethanol Plant 2 (Plant 2) opened in 2008. The facility produces approximately 210 million gallons of ethanol per year.

The last onsite compliance monitoring activity at the facility was on September 26, 2023, by Nebraska Department of Environment and Energy (NDEE). This was a partial compliance evaluation that resulted in no compliance findings for the facility.

According to Environment and Compliance History Online, there have been two informal enforcement actions, and no formal enforcement actions at this facility for the past five years. NDEE issued the following informal enforcement notifications to the facility: Notice of Violation for CAA – January 27, 2021, Written Informal Action for the Resource Conservation and Recovery Act (RCRA) – July 27, 2022.

According to Cargill’s Title V operating permit issued by NDEE on May 12, 2022, the facility is subject to the following regulations and standards subject to review during this inspection (**Table 3**):

Table 3. APPLICABLE PERMIT CONDITIONS, REGULATIONS AND STANDARDS	
Code of Federal Regulation	Standard Name
40 CFR Part 63	Subpart GGGG— National Emission Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production
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 63	Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
40 CFR Part 60	Subpart DD—Standards of Performance for Grain Elevators

FACILITY OPERATIONS SUMMARY

Corn arrives at the facility, is soaked, and then is separated into components (germ, gluten, starch). These components are sent to different process areas of the plant to be processed into the final products. Germ is processed into corn oil, gluten is used for animal feed, and starches are processed into sweeteners and ethanol. This inspection focused primarily on the ethanol production plant. This facility divides ethanol production across Plant #1 and Plant #2. Both plants are listed in the permit and are considered part of the same facility.

To produce ethanol, the corn starch slurry is first fermented using a four-stage fermentation process. This produces “beer” which is then distilled. The distilled ethanol is sent through a molecular sieve, then a denaturant is added before it is the final product, and is stored in tanks until being distributed.

The carbon dioxide (CO₂) released during the fermentation process are captured with two CO₂ scrubbers (Plant 1 and Plant 2). There are likewise two distillation and two evaporation

scrubbers. There is a vapor recovery unit in the ethanol loadout process area. Various components throughout the ethanol plants are monitored using EPA Method 21 to check for vapor leaks in equipment.

Baghouses/bin vent filters are located throughout the facility to control particulate matter emissions. The wastewater treatment plant at the facility uses a biofilter, an anaerobic reactor biogas flare, and a scrubber. Records of these control devices were requested as part of this inspection.

FIELD ACTIVITIES SUMMARY

I arrived at the facility on April 24, 2024, at 8:59 a.m. and completed a drive by surveillance inspection. I did not observe visible emissions. I made entry at the visitor center and introduced myself and members of the inspection team, presented my credentials, and provided my business card to Mr. Nick Remm. Mr. Remm escorted me and other members of the inspection team to a conference room at 9:24 a.m. We were given a facility safety briefing by Mr. Remm. I conducted an opening conference starting at 9:47 a.m. 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 3**. I explained that after asking for some general business information, I would observe process units and control equipment, including doing comparative Method 21 monitoring, and also review associated records demonstrating compliance with the regulations in **Table 3**. I explained to Mr. Remm that the facility would have an opportunity to make a claim of business confidentiality at the end of the inspection and provided him with a Confidential Business Information (CBI) form. Mr. Remm did not make a claim of confidentiality (**Appendix A**).

The inspection team was given a facility tour by Messrs. Remm, Gernant, and Aydt. The inspection team was asked to wear the following PPE for general site safety: steel toed boots, hard hat, safety glasses, gloves, and flame-resistant clothing.

We began our site tour at 10:45 a.m. with the ethanol plant. During the tour, we conducted Method 21 monitoring on selected valves and connectors, as well as monitoring with the Forward Looking Infrared (FLIR) camera. We began with the fermentation tanks for Plants 1 and 2 followed by the CO₂ scrubbers.

We broke for lunch at approximately 12:30 p.m. and returned at 2 p.m. to bump check the Toxic Vapor Analyzers (TVAs) and cool down the FLIR camera.

We resumed our tour with the beer heat exchange, followed by the degas trim condenser. We continued to the distillation process area and then to the product pumps.

We left the process areas at 4:45 p.m. and returned to the conference room. We departed for the day at 5:15 p.m.

We arrived onsite Day 2 (April 25, 2024) at 9 a.m. and were taken to the conference room. We spent the morning discussing various records related to the regulations in **Table 3**. We broke for lunch at 11:24 a.m. and returned at 12:30 p.m. After lunch, we visited the hexane tanks with the intrinsically safe camera and FLIR. We returned to the conference room to set up the TVAs. We then went to the tank farm to do comparative monitoring. We left the tank farm at 4:05 p.m.

After the tank farms, we went to the ethanol loadout areas. On our way back to the conference room, we re-checked valves 507 and 381 which had been over the 10,000 ppm threshold the previous day. We observed some of Plant 2 product pumps and then departed the process area at 5:10 p.m. We departed the facility for the day shortly thereafter.

We arrived onsite Day 3 (April 26, 2024) at 8 a.m. We were taken to the conference room and continued discussing records. At approximately 10 a.m., the group split off to allow the inspection team time to prepare for the closing conference.

I conducted a closing conference at 10:30 a.m. with the facility staff members listed in **Table 2**. I obtained copies of the records as indicated on the Receipt for Documents (**Appendix B**). During the closing conference, we discussed outstanding documents that would be provided via a OneDrive folder by Friday, May 10, 2024 (**Appendix C**). The files were uploaded on Friday, May 10, 2024. I provided the facility with copies of the CBI form (**Appendix A**), Receipt for Documents, and a Small Business Resource Information Sheet. We discussed potential compliance concerns. The inspection team departed the facility at 10:40 a.m.

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 and/or Sampling Activities

Christopher Appier, Elli Winkler, and I conducted field measurements during the onsite inspection under my direction. On Day 1, I primarily used the FLIR camera while Mr. Appier and Ms. Winkler did Method 21 monitoring with the TVAs. On Day 2, I operated the intrinsically safe FLIR at the hexane storage tanks while Mr. Appier operated the intrinsically safe camera. We both conducted Method 21 monitoring using TVAs later that day in the ethanol plants. **Table 4** summarizes field measurement and field sampling activities.

All environmental measurement activities were performed in accordance with the EPA Region 7 quality system. I followed manufacturer and EPA processes for instrument calibration. Instrument calibration for TVAs was documented via daily calibration sheets stored with EPA internal records.

Table 4 summarizes field measurement activities.

Table 4. FIELD MEASUREMENT ACTIVITIES			
Location Identifier	Date(s) and Time	Method and/or Procedure¹, and Equipment	Measurer Name
Ethanol Plants 1 and 2 ²	4/24-25/2024	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo-Fischer, TVA2020, and Serial No. 202019034113	Christopher Appier
Ethanol Plants 1 and 2 ²	4/24-25/2024	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks Region 7 Procedure: <i>Toxic Vapor Analyzer (TVA)</i> Equipment: Thermo-Fischer, TVA2020, and Serial No. 202022106267	Elli Winkler, Charlotte Papp
Ethanol Plants 1 and 2 ²	4/24/2024	Region 7 procedure: <i>FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras,</i> Equipment: Teledyne, GF320, and Serial No. 44402263	Charlotte Papp
Hexane Storage Tanks	4/25/2024	Region 7 procedure: <i>FLIR ThermoCAM™ GasFindIR, GF320, and Similar Infrared Cameras,</i> Equipment: Teledyne, GX320, and Serial No. 10400138	Charlotte Papp
¹ The current version of each procedure, at the time of the investigation, was followed.			
² A full list of valves and components monitored is available in Appendix D .			

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions, and field activities were documented in the field records. All photographs are attached as **Appendix E**. 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.

I reviewed records associated with compliance for regulations in 40 CFR Part 63 Subpart GGGG. These included solvent loss/compliance ratio calculations from 2019-2024, a written solvent loss/compliance ratio calculation plan, and digital pressure reading of the hexane tank leak detection system. All documents appeared complete and demonstrated compliance.

I reviewed records associated with compliance for regulations in 40 CFR Part 63 Subpart FFFF. These included opacity observations, inspection records with recorded operating parameters for scrubbers and tanks, malfunction/upset letters, and performance tests for scrubbers. The documents appeared complete and demonstrated compliance.

I reviewed records associated with compliance for regulations in 40 CFR Part 60 Subpart DD. These included OEM manuals for baghouse operation, performance tests, and daily observation and pressure readings for baghouses EP-1, EP-2, and EP-6A. The records appeared complete and demonstrated compliance.

Potential Finding 1: Previous Method 21 surveys appear insufficient in detecting leaks
Observation Summary: Historic Method 21 survey reports find few, if any, leaks on equipment monitored, which does not align with what was observed by the inspection team onsite.
Citation: 40 CFR 60.482-7(a)(1), EPA Method 21
Evidence: Field notes, Appendix D, Monthly LDAR Status Reports, Semi-annual reports
Description of Observation: According to semi-annual reports submitted by the facility, from 2019 to present, Cargill, Inc. – Blair has had between 758 and 852 valves (with 758 as the current number of valves since October 2020), and 21 pumps subject to 40 CFR Part 60 Subpart VV. On average, the facility is reporting 3.45 leaks per six months, with the minimum being 1 and the maximum 8. Most components are on a quarterly monitoring schedule. Assuming each component is monitored twice within each six-month reporting period, this creates an average ratio of 3.45 leaks/1558 components inspected or 0.221%. While onsite, we monitored approximately 90 components and found three leaks above the 10,000 ppm limit. This gives us the ratio of 3 leaks/90 components inspected, or 3.33%, which is higher than seen with historic records. Further investigation into this matter is warranted.

Potential Finding 2: Leaking components were not tagged with a weatherproof identification.
Observation Summary: After we discovered several valves that were above the 10,000 ppm limit, the valve numbers were noted, but no identifying marker was left on the valve.
Citation: 40 CFR 60.486(b)(1)
Evidence: Inspection Notes
Description of Observation: While onsite, the inspection team discovered three leaks during our Method 21 comparative monitoring. The facility was made aware of these leaks and took action to make first attempts at repair. According to 40 CFR 60.486(b), when each leak is detected, a weatherproof and readily visible identification with the equipment/valve number

Potential Finding 2: Leaking components were not tagged with a weatherproof identification.

shall be attached to the leaking equipment, only to be removed from a valve after it has been monitored for two successive months with no leak detected.

The facility made notes and took photos of the leaking valves, but did not affix any label or tag. Some of the areas had markers on some of the valves, but as we were identifying each valve, we discovered that the markers were not always accurate, and many were missing altogether.

End of report.