

# Iowa Department of Natural Resources

## Draft Title V Operating Permit Fact Sheet

This document has been prepared to fulfill the public participation requirements of 40 CFR Part 70 and 567 Iowa Administrative Code (IAC) 24.107(6). 40 CFR Part 70 contains operating permit regulations pursuant to Title V of the Clean Air Act.

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The Iowa Department of Natural Resources (DNR) finds that:

1. POET Biorefining – Fairbank, LLC, located at 1277 102<sup>nd</sup> Street, Fairbank, IA has applied to renew their Title V Operating Permit. The designated responsible official of this facility is Bryon Wilson.
2. POET Biorefining – Fairbank, LLC is an ethanol production facility. This facility consists of 72 emission units with potential emissions of:

Pollutant	Abbreviation	Potential Emissions (Tons per Year)
Particulate Matter ( $\leq 2.5 \mu\text{m}$ )	PM <sub>2.5</sub>	80.43
Particulate Matter ( $\leq 10 \mu\text{m}$ )	PM <sub>10</sub>	90.58
Particulate Matter	PM	233.17
Sulfur Dioxide	SO <sub>2</sub>	73.20
Nitrogen Oxides	NO <sub>x</sub>	100.60
Volatile Organic Compounds	VOC	186.25
Carbon Monoxide	CO	110.85
Lead	Lead	0.00
Hazardous Air Pollutants <sup>(1)</sup>	HAP	12.57

Acetaldehyde PTE is the highest single HAP: 7.66 tpy.

<sup>(1)</sup> May include the following: Acetaldehyde, Acrolein, Benzene, Formaldehyde, Hexane, Methanol, and Toluene.

3. POET Biorefining – Fairbank, LLC submitted a Title V Operating Permit renewal application on September 24, 2024 and any additional information describing the facility on July 9, 2025. Based on the information provided in these documents, DNR has made an initial determination that the facility meets all the applicable criteria for the issuance of an operating permit specified in 567 IAC 24.107.
4. DNR has complied with the procedures set forth in 567 IAC 24.107, including those regarding public notice, opportunity for public hearing, and notification of EPA and surrounding state and local air pollution programs.

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DNR procedures for reaching a final decision on the draft permit:

1. The public comment period for the draft permit will run from July 17, 2025 through August 16, 2025. During the public comment period, anyone may submit written comments on the permit. Mail signed comments to Derek Wedemeier at the DNR address shown below. The beginning date of this public comment period also serves as the beginning of the U.S. Environmental Protection Agency's (EPA) 45-day review period, provided the EPA does not seek a separate review period.
2. Written requests for a public hearing concerning the permit may also be submitted during the comment period. Any hearing request must state the person's interest in the subject matter, and the nature of the issues proposed to be raised at the hearing. DNR will hold a public hearing upon finding, on the basis of requests, a significant degree of relevant public interest in a draft permit. Mail hearing requests to Derek Wedemeier at the DNR address shown below.
3. DNR will keep a record of the issues raised during the public participation process, and will prepare written responses to all comments received. The comments and responses will be compiled into a responsiveness summary document. After the close of the public comment period, DNR will make a final decision on the renewal application. The responsiveness summary and the final permit will be available to the public upon request.

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DNR concludes that:

1. DNR has authority under 455B.133 Code of Iowa to promulgate rules contained in 567 IAC Chapters 21-33, including, but not limited to, rules containing emission limits, providing for compliance schedules, compliance determination methods and issuance of permits.
2. DNR has the authority to issue operating permits for air contaminant sources and to include conditions in such permits under 455B.134 Code of Iowa.
3. The emission limits included in this permit are authorized by 455B.133 Code of Iowa and 567 IAC Chapters 21-33.
4. DNR is required to comply with 567 IAC Chapter 24 in conjunction with issuing a Title V Operating Permit.
5. The issuance of this permit does not preclude the DNR from pursuing enforcement action for any violation.

## Title V Permit Review Notes R2

Facility Name:	<b>POET Biorefining - Fairbank, LLC</b>
City:	Fairbank
County:	Buchanan
Facility #:	10-04-007
EIQ #:	92-6958
Application Received:	9/24/2024
Permit #:	15-TV-010R2
Reviewer:	Derek Wedemeier

### **Background:**

POET Biorefining – Fairbank, LLC has applied for Renewal 2 of their Title V Operating Permit for their ethanol production facility located in Fairbank. The facility currently consists of seventy-two (72) significant emission units and seventeen (17) insignificant emission units.

### **Title V Applicability**

<b>Pollutant</b>	<b>Major for Title V?</b>
PM <sub>10</sub>	<input type="checkbox"/>
SO <sub>2</sub>	<input type="checkbox"/>
NO <sub>x</sub>	<input type="checkbox"/>
VOC	<input checked="" type="checkbox"/>
CO	<input checked="" type="checkbox"/>
Lead	<input type="checkbox"/>
Individual HAP	<input checked="" type="checkbox"/>
Total HAPs	<input checked="" type="checkbox"/>

### **Program Applicability**

- PSD: No, this facility is a synthetic minor source. They are also one of the 28 listed source categories (Fossil-Fuel Boilers (or combination thereof) totaling more than 250 MMBtu/hr. The Thermal Oxidizer/Heat Recovery Generators are a nested source and facility has taken limits on NO<sub>x</sub> and CO (97.0 tons/year) to avoid PSD major source status (EPs S10 and S160).
- Part 61 NESHAP: No
- NSPS: Yes
  - 40 CFR 60 Subpart A – General Provisions
  - 40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
  - 40 CFR 60 Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
  - 40 CFR 60 Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels)

- 40 CFR 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
- Major Source of HAPs: Yes (However, current facility-wide PTE is less than 10 tpy for any single HAP and less than 25 tpy for total HAP.)
- Part 63 NESHAP: Yes
  - 40 CFR 63 Subpart A - National Emission Standards for Hazardous Air Pollutants for Source Category: General Provisions
  - 40 CFR 63 Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing
  - 40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE)
  - 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
- Acid Rain: No.
- Stratospheric Ozone Protection: Yes. – Application documents indicate no, however facility review correspondence from 6/17/2025 confirmed this is yes.
- Prevention of Accidental Releases: No.

### **Emission Estimations**

The potential emissions calculations were based off of construction permit limits, AP-42 emission factors, stack test data, mass balance and engineering estimates provided by the facility. The 500ppmv allowable SO<sub>2</sub> SIP limit overestimates the potential emissions. The AP-42 emission factors for SO<sub>2</sub>, if available, were used instead and provide a more realistic potential value when compared to the previous year's emissions inventory.

#### **PTE Emission Values**

PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Lead	Total HAPs
<b>Potential Emissions</b>								
233.17	90.58	80.43	73.20	100.60	186.25	110.85	0.00	12.57
<b>Actual Emissions 2024</b>								
50.09	36.95	26.22	10.52	99.46	113.41	28.79	0.00	11.23

### **Changes Made Since Previous Modification Was Issued**

#### **Construction Permits Modified**

Emission Point	Description	Construction Permit
S40	Fermenters	05-A-010-S11
SEP22	Product Loadout	05-A-013-S6

#### **Rescinded Construction Permits**

Emission Point	Description	Construction Permit	Date Rescinded
EP 11	Methanators	05-A-020-S4	4/26/2021

This construction permit was rescinded prior to the previous modification but was not removed from the permit at that time. 2024 Field Office inspection indicated this emission point has not operated for the last 5 years.

### **General Comments**

- Update Permit Number
- Update Permit Contact
- Update Table of Contents
- Update footers
- Update General Conditions
- Update Appendices

#### **EP S20: No changes**

CAM applies for baghouse CE-C20. Periodic monitoring guidance (PMG) suggests one stack test for PM and PM10. This emission point was previously tested on 3/22/2016 and passed at approximately 15% of the emission limit. Testing will not be required during this renewal based on the large margin of compliance and additional monitoring required by the CAM plan.

#### **EP S25: No changes**

CAM applies for baghouse CE-C25. Periodic monitoring guidance (PMG) suggests one stack test for PM and PM10. The emission limit of 1.28 lb/hr is based on 0.1gr/dscf standard. Baghouses are regularly capable of achieving 0.01gr/dscf or less. A stack test will not be required during this renewal because of the additional monitoring required with the CAM plan and assumed level of compliance.

#### **EP S30: No changes**

CAM applies for baghouse CE-C30. Periodic monitoring guidance (PMG) suggests one stack test for PM and PM10. This emission point was previously tested on 3/22/2016 and passed at approximately 11% of the emission limit. Testing will not be required during this renewal based on the large margin of compliance and additional monitoring required by the CAM plan.

#### **EP S10: Dryers, Boilers and Distillation**

Biomethanators #1-4 (EU58 – EU61) have been completely decommissioned and blinded off from the process. This was confirmed via email received 3/25/2025. Permitted equipment associated with the biomethanators was decommissioned and rescinded in 2021. All references to the biomethanators have been removed from the permit. The facility should consider having construction permit 05-A-006-S9 updated to remove this language the next time this construction permit is modified. CE10a, CE10b, B10a, and B10b are subject to NSPS Db. EP S10 is subject to NESHAP FFFF. NESHAP DDDDD does not apply to these waste heat boilers according to engineering evaluation from project 18-426.

PMG recommends stack testing for PM, PM10, VOC, NOx, SO<sub>2</sub>, CO, and HAPs. NOx is monitored by CEMs so no test will be required for NOx during this renewal. The construction permit requires regular VOC, CO and HAP testing so no additional testing for these pollutants will be required by Title V during this renewal. PM and PM10 were last tested for on 4/26/2017 at passed with an average of approximately 64% of the emission limit. No PM/PM10 testing will be required during this renewal. One test for SO<sub>2</sub> will be require.

CAM applies for the thermal oxidizers CE10a and CE10b. Operating conditions meet the requirements of a CAM Plan. An Agency O&M plan is required for the multiclones following the DDGS Dryers.

EP S40: Fermenters #1-9, Beer well.

Two new fermenters, #8 and #9 were added to the equipment list for EP S40. These were included in an application submitted on 7/9/2025. No changes were made to the emission limits or operating conditions. CAM applies to the CO2 scrubber for VOC and THAP. Stack testing is required by the construction permit so no additional testing will be required by Title V during this renewal.

EP S70: No Changes.

CAM applies for baghouse CE C70. PMG recommends one test for PM and will be required within 2 years of permit issuance.

EP S90: No Changes

The rail and truck DDGS loadout is subject to CAM for the baghouse CE C90. PMG recommends one test for PM. EP S90 was most recently tested on 3/23/2016 and passed with an average rate of approximately 8% of the emission limit. No test will be required during this renewal because of this margin of compliance and additional monitoring required by the CAM plan.

EP SEP22: Ethanol Loadout

Construction permit 05-A-013-S6 was updated on 10/6/2023 to increase total ethanol loadout by 20 million gallons per 12-month rolling period and decrease truck loadout by 5 million gallons per 12-month rolling period. The VOC annual emission limit was decreased. These emission units are subject to NESHAP FFFF. CE F50 was included in form 3.0 as an emission unit to account for natural gas combustion emissions. The Title V permit will keep CE F50 as control equipment. CAM does not apply because precontrol emission do not exceed the major source threshold on a per unit basis. PMG recommends 1 test and a Facility O&M Plan. The operating conditions meet the requirements of a Facility O&M Plan. Stack testing for VOC will not be required since there is no short term limit.

EP S80: No changes

EP F61-F63, F65: No changes

These storage tanks use internal floating roofs and are subject to NSPS Kb.

EP F64: No changes

This storage tank uses an internal floating roof and is subject to NSPS Kb and NESHAP FFFF.

EP FP: Fire Water Pump

Operational limits and requirements for annual maintenance were updated to “1 year + 30 days” to match changes to NESHAP ZZZZ.

EP F110: No changes.

This fugitive source is subject to NSPS VV and NESHAP FFFF.

EP F120, F130, F150: No changes

EP S31, EP S32: No changes

Both hammermills are subject to CAM. PMG recommends one stack test for PM. One (1) representative test will be required for these hammermills within two years of permit issuance.

EP S160: No changes

This boiler is subject to NSPS Dc and NESHAP DDDDD.

**Periodic Monitoring Guidance Summary Table**

Emission Point	Control Equipment	Type of O&M Plan	Stack Test – Required by	NSPS	NESHAP
S20	CE C20: Baghouse	CAM	Waived – Tested 2016	-	-
S25	CE C25: Baghouse	CAM	Waived	-	-
S30	CE C30: Baghouse	CAM	Waived – Tested 2016	-	-
S10	Multiclones, TO	See Note <sup>(1)</sup>	Yes – See Permit	A, Db	A, FFFF
S40	CE C40: Scrubber	CAM	Yes – See Permit	-	-
S70	CE C70: Baghouse	CAM	Yes – PM	-	-
S90	CE C90: Baghouse	CAM	Waived – Tested 2016	-	-
SEP22	CE F50: Flare	Facility <sup>(2)</sup>	NA	-	A, FFFF
T61-T63	Internal Floating Roof	NA	NA	A, Kb	-
T64	Internal Floating Roof	NA	NA	A, Kb	-
T65	Internal Floating Roof	NA	NA	A, Kb	-
FP	-	-	-	-	A, ZZZZ
F110	-	-	-	A, VV	A, FFFF
S31, S32	C31/C32: Baghouses	CAM	Yes – PM	-	-
S160	-	-	-	A, Dc	A, DDDDD

<sup>(1)</sup> CAM applies to the thermal oxidizers. Operating conditions meet the requirements of a CAM Plan. An agency O&M is required for the multiclones.

<sup>(2)</sup> Operational limits meet the requirements of a Facility O&M Plan.