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) 22.107(6). 40 CFR Part 70 contains operating permit regulations pursuant to Title V of the Clean Air Act.

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

1. Big River United Energy, LLC - Dyersville, located at 3294 Vine Dr, Dyersville, IA has applied to renew their Title V Operating Permit. The designated responsible official of this facility is Mr. Brian Schasel.
2. Big River United Energy, LLC - Dyersville is an ethanol production facility. This facility consists of 84 emission units with potential emissions of:

Pollutant	**Abbreviation**	**Potential Emissions** (Tons per Year)
Particulate Matter (≤ 2.5 μm)	$PM_{2.5}$	58.56
Particulate Matter (≤ 10 μm)	PM_{10}	84.80
Particulate Matter	PM	151.23
Sulfur Dioxide	SO_2	96.18
Nitrogen Oxides	NO_x	132.85
Volatile Organic Compounds	VOC	119.45
Carbon Monoxide	CO	110.73
Lead	Lead	0.00
Hazardous Air Pollutants [(1)]	HAP	22.49

[(1)] May include the following: Acetaldehyde, Acrolein, Benzene, Formaldehyde, Hexane, Methanol, Toluene, and Xylenes.

3. Big River United Energy, LLC - Dyersville submitted a Title V Operating Permit renewal application on January 5, 2024 . 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 22.107.
4. DNR has complied with the procedures set forth in 567 IAC 22.107, including those regarding public notice, opportunity for public hearing, and notification of EPA and surrounding state and local air pollution programs.

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

1. The public comment period for the draft permit will run from March 28, 2024 through April 27, 2024. 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 20-35, 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 20-35.
4. DNR is required to comply with 567 IAC Chapter 22 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 Renewal 2 Review Notes

Facility Name:	**Big River United Energy, LLC - Dyersville**
City	Dyersville
County	Delaware
Facility Number:	28-12-001
EIQ:	92-6957
Permit Number:	14-TV-010-R2
Reviewer:	Derek Wedemeier
Date:	**DATE**

Facility Identification

Facility Name:	Big River United Energy, LLC - Dyersville
Facility Location:	3294 Vine Rd, Dyersville, IA 52040
Responsible Official:	Mr. Brian Schasel
Phone:	319-753-1100

Big River United Energy, LLC is a fuel-grade ethanol production facility (SIC 2869). Renewal permit application was received 1/5/2024. The facility is a major stationary source for Title V for potential to emit 100 tpy or more of any air pollutant (NO_x, VOCs, and CO). This facility has 21 emission points with the potential to emit (annually):

Potential Emissions (PTE)

Pollutant	**Potential Emissions (TPY)**
$PM_{2.5}$	58.56
PM_{10}	84.80
PM	151.23
SO_2	96.18
NO_x	132.85
VOC	119.45
CO	110.73
Lead	0.00
Total HAP [(1)]	22.49

[(1)]HAPs may include Acetaldehyde, Formaldehyde, Acrolein, Methanol, Hexane, Benzene, Toluene, Ethylbenzene and Xylene.

Program Applicability:

- PSD: Synthetic Minor Stationary Source
- NSPS: 40 CFR Part 60
  - Subpart A – Standards of Performance for New Stationary Sources General Provisions
  - Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
  - Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

- Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)
- Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

- NESHAP: 40 CFR Part 63
  - Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
  - Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Source. However, these units are not subject to Subpart JJJJJJ as this federal rule states that waste heat boilers are excluded from the definition of "*boiler*" in §63.11237.
- Acid Rain and CSAPR: NO
- Stratospheric Ozone Protection: NO
- Prevention of Accidental Release: YES

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_2 SIP limit overestimates the potential emissions. The AP-42 emission factors for SO_2, if available, were used instead and provide a more realistic potential value when compared to the previous year's emissions inventory.

Emission Values

PM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	VOC	CO	Lead	Total HAPs
Potential Emissions								
151.23	84.80	58.56	96.18	132.85	199.45	110.73	0.00	22.49*
Actual Emissions 2022								
30.05	20.45	18.01	5.25	73.50	61.69	57.22	0.00	10.97

*Single HAP Total: 9.38tpy for Acetaldehyde, highest total for Single HAP.

Emission Point S10

EP is not subject to 40 CFR 63 Subpart VVVVVV (National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Source) because the Department determined acetaldehyde concentration in distillation vapor streams at dry-mill corn ethanol production facilities in Iowa are below the applicability threshold of 0.1 percent by weight.

EP is not subject to 40 CFR 63 Subpart JJJJJJ (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers Area Source). Waste heat boilers are excluded from the definition of "*boiler*" in §63.11237. The boilers associated with this emission point are Waste Recovery Boilers and do not combust fuel or generate emissions. The emission stream and associated heat from the Thermal Oxidizers is directed to the boilers, which produces steam from the 122 million BTU/hr maximum heat rate provided by Thermal Oxidizers.

Stack testing is requirement for NOx and HAPs, annually. One stack test will be required for each SO_2, PM and VOC during this renewal. SO_2 and PM exceed the Periodic Monitoring Guidance significant source threshold of 40tpy and 25tpy, respectively when using emission limits for uncontrolled sources. The emission rate values from the 2010 stack tests were ignored due to the age of the tests. VOC also exceeds the pre-control major source threshold for periodic monitoring when using the emission limits and an assume control efficiency of 95%. Therefore, one test for each VOC, SO_2 and PM will be required within the first 2 years of permit issuance. Testing for $PM_{2.5}$ will not be required based on the engineering evaluation from project 16-105 which established the $PM_{2.5}$ limits using the rated maximum capacity and the 95% CI upper value from stack test data collected during the PM10 stack test for EP-S10.

EP is subject to CAM. The Operating Requirements with Associated Monitoring and Recordkeeping in Construction Permit 06-A-721-S6 are CAM equivalent.

Emission Point S20

Applicable equipment discharged through Emission Point S20 is of the source category affected by Title 40 of the Code of Federal Regulations (CFR), Part 60, Subpart DD – *Standard of Performance for Grain Elevators*. However, the revisions included in this permit as a result of the construction project do not meet the definition of "*modification*" under NSPS; therefore, the requirements in Subpart DD are not triggered at this time.

One (1) stack test for PM will be required within 2 years of the permit issuance. The current operating conditions includes weekly pressure drop monitoring of baghouse. This and the other conditions meet the requirements of a Facility O&M plan. A CAM plan is not required. Potential emission do not exceed the major threshold on a per unit basis.

Emission Point S25

The Elevator Dump Pit (EU-S25) is not subject to any NSPS, including Subpart DD, because the permanent storage capacity for this facility remains below 2.5 million bushels.

CAM applies to this unit as PTE exceeds major threshold. Stack testing will not be required during this renewal. The emission limit is based on a PM load rate of 0.004gr/dscf of exhaust gas. Baghouses are capable of achieving rates lower than this with proper inspection and repair. The additional daily monitoring of the CAM plan requirements will ensure proper function of the control equipment.

Emission Point S30

The current operating conditions includes weekly pressure drop monitoring of baghouse. This and the other conditions meet the requirements of a Facility O&M plan. A CAM plan is not required. Potential emission do not exceed the major threshold. The facility reported a 95% control efficiency on CE-01 form for CE-C30. Using this information, uncontrolled potential emission do not exceed the major threshold so no stack test will be required during this renewal.

Emission Point S40

This emission point is not subject to 40 CFR 63 Subpart VVVVVV (National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Source) because the Department

determined acetaldehyde concentration in fermentation vapor streams at dry-mill corn ethanol production facilities in Iowa are below the applicability threshold of 0.1 percent by weight.

Annual stack testing is required by the construction permit 06-A-724-S7 for VOC and HAP. The facility completed the required winter seasonal testing on 11/14/2023. The summer seasonal stack testing is required by 8/31/2024.

EP S40 is subject to CAM. The Operating Requirements with Associated Monitoring and Recordkeeping in Construction Permit 06-A-724-S7 are CAM equivalent.

Emission Point S50

The ethanol product loadout operation described in this permit is not an affected emission unit under 40 CFR Part 63, Subpart BBBBBB – *National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities*, because this facility (Plant No. 28-12-001) only receives natural gasoline to be used as denaturant and natural gasoline does not meet the definition of "*gasoline*" in 40 CFR §63.11100.

EP is subject to CAM. The Operating Requirements with Associated Monitoring and Recordkeeping in Construction Permit 06-A-725-S4 is CAM equivalent.

Emission Point S70

The stack was previously tested for PM in 2010 and resulted in an average emission rate of 0.17 lb/hr. Based on this value, potential emission do not exceed the major threshold and CAM will not be required. The facility reported a 95% control efficiency on CE-01 form for CE-C70. Uncontrolled potential emission do not exceed the major threshold so no stack test will be required during this renewal.

An Agency O&M will be required to establish weekly pressure drop checks.

Emission Point S90

The Operating Requirements with Associated Monitoring and Recordkeeping in Construction Permit 06-A-729-S2 are equivalent to a Facility O&M plan. A CAM plan is not required. Potential emission do not exceed the major threshold on a per unit basis. The facility reported a 95% control efficiency on CE-01 form for CE-C90. Uncontrolled potential emission do not exceed the major threshold so no stack test will be required during this renewal.

Emission Point S110

Emergency Fire Water Pump is subject to both 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ.

EP S204 – Storage Bin 2

Periodic monitoring suggests one stack test for PM for this unit and a Facility O&M plan. The engineering evaluation from 2016 states emission from this unit are expected to be below the Iowa allowable limits as long as the facility inspects, maintains, and repairs the control equipment. Inspection and maintenance records were provided following the 2023 Field Office inspection. The baghouse is expected to achieve levels to keep potential emission below the major source

threshold. Therefore, a stack test will not be required and CAM does not apply. The operating conditions meet the requirements of a Facility O&M plan.

Periodic Monitoring Summary

Emission Point	Construction Permit	Control Equipment	Type of O&M Plan	Stack Test	NESHAP	NSPS
EP S10	06-A-721-S6	CE-C10 & CE-C11: Thermal Oxidizer 1 & 2	CAM*	Yes: NO_x & HAP		VV, Db
EP S20	06-A-722-S4	CE-C20: Baghouse	Facility*	Yes: PM		
EP S25	14-A-197	CE-C25: Baghouse	CAM	No		
EP S30	06A-723-S4	CE-C30: Baghouse	Facility*	No		
EP S40	06-A-724-S7	CE-C40: Packed Bed Scrubber	CAM*	Yes: VOC & HAP		VV
EP S50	06-A-725-S4	CE-C50: Vapor Recovery & Flare	CAM*	No		VV
EP S70	06-A-727-S2	CE-C70: Baghouse	Agency	No		
EP S90	06-A-729-S2	CE-C90: Baghouse	Facility*	No		
EP S110	06-A-730	NA	NA	NA	ZZZZ	IIII
FUG5	06-A-731-S1	CE FUG5: LDAR	NA	NA		VV
EP T01-06	06A-733 to 06-A-738	Internal Floating Roofs	NA	NA		Kb
EP S201	14-A-198	CE-C201: Baghouse	Facility*	No		
EP S203	14-A-199	CE-C203: Baghouse	Facility*	No		
EP S204	16-A-058-S1	CE-C204: Baghouse	Facility*	No		

* Conditions listed in the Operational Limits & Reporting/Recordkeeping meet the applicable monitoring plan requirements.