

# STATEMENT OF BASIS

Bunge North America, Inc.  
Decatur, Morgan County, AL  
Facility No. 712-0026

This proposed Renewal Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit.

Bunge North America (Bunge) was issued its existing Major Source Operating Permit (MSOP) on March 31, 2015, with an effective date of January 4, 2015, and an expiration date of January 3, 2020. Per ADEM Admin. Code r. 335-3-16-.12(2), an application for permit renewal shall be submitted at least six months, but not more than eighteen months, before the date of expiration of the permit. Based on this rule, the application for renewal was due to the Department no later than July 3, 2019, but no earlier than July 3, 2018. An application for permit renewal was received by the Department on June 25, 2019. Additional information was received on July 26, 2019.

**TABLE OF CONTENTS**

FACILITY DESCRIPTION .....	4
RENEWAL NOTES .....	6
SOYBEAN RECEIVING, STORAGE, AND CLEANING.....	7
Applicability.....	7
Emissions Standards.....	8
Compliance and Performance Test Methods and Procedures .....	9
Emission Monitoring .....	10
Recordkeeping and Reporting Requirements.....	10
Expected Emissions .....	11
DRYING OPERATIONS.....	12
Applicability.....	12
Emissions Standards.....	12
Compliance and Performance Test Methods and Procedures .....	13
Emission Monitoring .....	13
Recordkeeping and Reporting.....	13
Expected Emissions .....	14
SOYBEAN PREPARATION .....	15
Applicability.....	15
Emissions Standards.....	16
Compliance and Performance Test Methods and Procedures .....	17
Emission Monitoring .....	17
Recordkeeping and Reporting Requirements.....	18
Expected Emissions .....	19
MEAL AND HULL PROCESSING, STORAGE, AND LOADOUT .....	20
Applicability.....	20
Emissions Standards.....	21
Compliance and Performance Test Methods and Procedures .....	22
Emission Monitoring .....	22
Recordkeeping and Reporting Requirements.....	23
Expected Emissions .....	24
EXTRACTION PROCESS BOILERS .....	26
Applicability.....	26
Emissions Standards.....	27
Compliance and Performance Test Methods and Procedures .....	28
Emission Monitoring .....	28
Recordkeeping and Reporting Requirements.....	29
Expected Emissions .....	30
SOLVENT EXTRACTION PROCESS .....	31

Applicability.....	31
Emissions Standards.....	32
Compliance and Performance Test Methods and Procedures .....	33
Emission Monitoring .....	36
Recordkeeping and Reporting Requirements .....	37
Expected Emissions .....	40
EDIBLE OIL REFINING PROCESS .....	41
Applicability.....	41
Emissions Standards.....	42
Compliance and Performance Test Methods and Procedures .....	43
Emission Monitoring .....	44
Recordkeeping and Reporting Requirements .....	45
Expected Emissions .....	46
EDIBLE OIL PACKAGING PLANT .....	48
Applicability.....	48
Emissions Standards.....	49
Compliance and Performance Test Methods and Procedures .....	50
Emission Monitoring .....	50
Recordkeeping and Reporting Requirements .....	50
Expected Emissions .....	50
EMERGENCY FIRE PUMP ENGINES.....	52
Applicability.....	52
Emissions Standards.....	52
Compliance and Performance Test Methods and Procedures .....	53
Emission Monitoring .....	54
Recordkeeping and Reporting Requirements .....	54
Expected Emissions .....	54
RECOMMENDATION .....	55
APPENDIX A: DRAFT PROVISOS.....	56

## FACILITY DESCRIPTION

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Bunge is an integrated soybean processing and edible oil refining facility alongside an edible oils blending and packaging plant.

The following are significant sources of air pollution for this facility:

- RS-1a: Rail Unloading Pits (fugitive emissions)
- RS-1b: Truck Unloading Pits w/ Baghouse
- RS-2: Headhouse to Storage Tank Conveyor, Scales, Elevator Legs, Belt Conveyor w/ Baghouse
- RS-3a: Marine Barge Loading w/ Baghouse
- RS-3b: Barge Unloading and Aspiration of Unloading Conveyor w/ Baghouse
- RS-5a-g: Soybean Storage Tanks (atmospheric vents)
- CD-1: Bean Cleaning and Process Tanks w/ Baghouse
- CD-2: Law-Marot Dryer
- PR-1: Dehulling w/ Baghouse No. 1
- PR-2: Dehulling w/ Baghouse No. 2
- PR-4: Soybean Cracking Rolls w/ Baghouse
- PR-5: Hull Grinders w/ Baghouse
- PR-7: Flaking System w/ Cyclone
- EX-1: Soybean Oil Solvent Extraction System
- EX-2: Desolventizer-Toaster/Dryer-Cooler (DT/DC)
- MH-1: Meal Grinding/Additive Bin Aspiration w/ Baghouse
- MH-2c: Hull Storage Bin C (atmospheric bin vents)
- MH-2e-f: Hull Pellet Storage Bins E, F (atmospheric bin vents)
- MH-2g: Meal Storage Bin (bin vent filters)
- MH-3: Hull Pellet Cooler w/ Cyclone
- MH-4: Meal Truck Loadout w/ Baghouse
- MH-5: Meal Rail Loadout w/ Baghouse
- MH-6: Hull Receiving Cyclone w/ Baghouse
- MH-7: Meal House, Meal Storage Bins, and Meal Loadout Bins w/ Baghouse
- BO-3: 99.0 MMBtu/hr Natural Gas-Fired Boiler
- BO-4: 99.0 MMBtu/hr Natural Gas-Fired Boiler
- BO-5: 99.0 MMBtu/hr Natural Gas-Fired Boiler
- REF-1: 13.0 MMBtu/hr Natural Gas-Fired Boiler
- REF-2: 13.0 MMBtu/hr Natural Gas-Fired Boiler
- REF-3: Edible Oil Refining Process
- REF-4: No. 1 Clay Silo
- REF-5: 5.0 MMBtu/hr Natural Gas-Fired Boiler
- REF-6: No. 4 Silica/Trisyl Silo
- BO-6: 5.25 MMBtu/hr Natural Gas Hot Water Heater
- Two 305 HP Diesel-Fired Emergency Fire Pumps

The following is a summary of facility-wide controlled emissions and the reported 2017 actual emissions:

<b>Pollutant</b>	<b>Potential Emissions (TPY)</b>	<b>2017 Actual Emissions (TPY)</b>
PM	191.2	86.2
PM10	61.7	44.7
PM2.5	24.0	16.9
SO <sub>2</sub>	1.1	0.4
NO <sub>x</sub>	92.7	38.2
CO	139.4	53.7
VOC	994.8	193.7
Total HAP (n-Hexane)	633.8	327.3
GHG (CO <sub>2</sub> e)	199,322.3	-

## RENEWAL NOTES

1. Remove CD-2a Ferrell-Ross Dryer and CD-2b Westlaken Dryer and replace with CD-2 Law-Marot Dryer, which is permitted under **Air Permit No. 712-0026-X031**, issued on May 7, 2015.
2. Add the two diesel-fired emergency fire pump engines permitted under **Air Permit No. 712-0026-X032**, issued on February 10, 2017.
3. Change the description of Emission Point RS-1b to read Truck Unloading Pits w/ Baghouse; change RS-3 to read RS-3a Marine Barge Loading w/ Baghouse and RS-3b Barge Unloading and Aspiration of Unloading Conveyor w/ Baghouse. RS-3b is permitted under **Air Permit No. 712-0026-X033**, issued on July 3, 2018.
4. Change the facility-wide throughput limit of 56,575,000 bushels per 12 months to 61,425,000 bushels per 12 months. This new limit is currently in **Air Permit Nos. 712-0026-X034 through X040**, issued on August 16, 2019, and is the result of a PSD review.
5. Remove any mention of No. 2 fuel oil or soybean oil as fuel for the boilers, which now burn natural gas only. Remove permit requirements relating to liquid fuel use and replace with a natural gas-only requirement.
6. The facility requested the following emission points be listed as insignificant sources since they are below the significance threshold of 5 TPY:
  - a. REF-4
  - b. REF-6

**However, REF-4 and REF-6 have Anti-PSD limits in place and therefore cannot be considered insignificant sources.**
7. Add the conditions of the Consent Decree entered into on January 16, 2007, in Civil Action No. 2:06-CV-02209. These were removed in the previous MSOP renewal.
8. The following is a summary of the Air Permits issued to the facility since the previous MSOP renewal:

Permit No.	Description	Issuance Date
712-0026-X031	Law-Marot Dryer	May 7, 2015
712-0026-X032	Two 801 HP Diesel-Fired Emergency Fire Pumps	February 10, 2017
712-0026-X033	Barge Unloading Operations w/ Baghouse (RS-3b)	July 3, 2018
712-0026-X034	Soybean Receiving, Storage, & Cleaning (RS-1a, 1b, 2, 3, 3b, 5a-g, CD-1)	August 16, 2019
712-0026-X035	Two Natural Gas-Fired Dryers (CD-2, CD-6)	August 16, 2019
712-0026-X036	Soybean Preparation (PR-1, 2, 4-7)	August 16, 2019
712-0026-X037	Meal & Hull Processing, Storage, & Loadout (MH-1, 2c, 2e-f, 2g, 3-7)	August 16, 2019
712-0026-X038	120 MMBtu/hr Natural Gas-Fired Boiler (BO-5)	August 16, 2019
712-0026-X039	Solvent Extraction Process (EX-1, 2)	August 16, 2019
712-0026-X040	305 HP Diesel-Fired Emergency Fire Pump Engine	August 16, 2019

## SOYBEAN RECEIVING, STORAGE, AND CLEANING

Soybeans are unloaded from rail, truck, or barge and then weighed, sampled, and transferred to one of seven one million-bushel storage tanks. The beans are scalped, screened, and cleaned prior to further processing. The truck unloading area, head house, barge unloading area, and bean cleaning area each utilize a baghouse to control particulate matter.

This area consists of the following operations:

Emission Point	Description
RS-1a	Rail Unloading Pits (fugitive emissions)
RS-1b	Truck Unloading Pits w/ Baghouse
RS-2	Headhouse to Storage Tank Conveyor, Scales, Elevator Legs, Belt Conveyor w/ Baghouse
RS-3a	Marine Barge Loading w/ Baghouse
RS-3b	Barge Unloading and Aspiration of Unloading Conveyor w/ Baghouse
RS-5 a-g	Soybean Storage Tanks (atmospheric vents)
CD-1	Bean Cleaning and Process Tanks w/ Baghouse

### Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Control of Particulate Emissions for Process Industries – General"*.

Rule 335-3-4-.04(1)

- The Barge Unloading Operations with Baghouse (RS-3b) and Bean Cleaning (CD-1) are subject to the applicable requirements of 40 CFR 60 Subpart DD, *"Standards of Performance for Grain Elevators"*.

40 CFR 60 Subpart DD, §60.300(a)-(b)

- The Barge Unloading Operations with Baghouse (RS-3b) and Bean Cleaning Process (CD-1) are subject to the applicable requirements of 40 CFR 60 Subpart A, *"General Provisions"*.

40 CFR 60 Subpart A, §60.1(a)

- Source RS-3b has an enforceable limit in place in order to avoid being subject to the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [Anti-PSD]

- Source CD-1 has an enforceable limit in place in order to comply with the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [BACT]

- Source RS-3b is subject to the applicable requirements of 40 CFR 64, *"Compliance Assurance Monitoring"*.

40 CFR 64, §64.2

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## Emissions Standards

### Opacity

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emission, particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)

- On and after the date on which initial performance testing is completed, sources CD-1 and RS-3b shall not discharge into the atmosphere any process emissions which exhibit greater than 0 percent opacity.

40 CFR 60 Subpart DD, §60.302(b)

- On and after the 60<sup>th</sup> day of achieving the maximum production rate at which the Barge Unloading Operations and Bean Cleaning Process will be operated, but no later than 180 days after the initial startup, fugitive emissions shall not be discharged into the atmosphere from:
  - Any grain handling operation which exhibits greater than 0 percent opacity.
  - Any barge or ship loading station which exhibits greater than 20 percent opacity.

40 CFR 60 Subpart DD, §60.302(c)

### Particulate Matter

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Process Industries – General"*, which states the allowable emissions from each unit shall not



exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Rule 335-3-4-.04(1)

- Particulate emissions from source CD-1 shall not exceed 0.002 grains per standard cubic foot (gr/scf).

Rule 335-3-14-.04 [BACT]

- On and after the date on which initial performance testing is completed, sources CD-1 and RS-3b shall not discharge into the atmosphere any process emissions which contain particulate matter in excess of 0.023 grains per dry standard cubic meter (or 0.01 gr/dscf). CD-1 has a BACT limit in place that would supersede this limit.

40 CFR 60 Subpart DD, §60.302(b)

**Operational**

- The facility is subject to a plant-wide throughput limit of 61,425,000 bushels of soybeans per any consecutive 12-month period.

Rule 335-3-14-.04 [BACT]

- The barge unloading station shall be operated as follows:
  - The unloading leg shall be enclosed from the top (including the receiving hopper) to the center line of the bottom pulley, and ventilation to a control device shall be maintained on both sides of the leg and the grain receiving hopper.
  - The total rate of air ventilated shall be at least 32.1 actual cubic meters per cubic meter of grain handling capacity (ca. 40 ft<sup>3</sup>/bu).
  - Rather than meet the two (2) requirements listed above, the facility may use other methods of emission control if it is demonstrated to the Department's satisfaction that they would reduce emissions of particulate matter to the same level or less.

40 CFR 60 Subpart DD, §60.302(d)

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## Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

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**Emission Monitoring**

- An instantaneous observation of visible emissions from the exhausts associated with these units shall be accomplished weekly while in operation.
  - If any visible emissions are observed from CD-1 or RS-3b, or if instantaneous visible emissions greater than 10% opacity are observed from RS-1a, 1b, 2, 3, or 5a-g, corrective action to reduce emissions shall be initiated within 2 hours.
  - After corrective action, a follow-up visible emissions check shall be conducted. If instantaneous visible emissions of an opacity greater than 10% percent are observed, a visible emissions observation shall be conducted within 30 minutes in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of 12 minutes. Further corrective action shall be taken to reduce emissions to an appropriate level.

Rule 335-3-16-.05(c)

- An observation of the pressure differential across the baghouse RS-3b shall be conducted weekly while in operation.
  - If the observed pressure differential is less than 0.5 in. H<sub>2</sub>O or greater than 8.0 in. H<sub>2</sub>O, corrective action shall be initiated within 2 hours.

Rule 335-3-16-.05(c)

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**Recordkeeping and Reporting Requirements**

- If a visible emissions observation utilizing Method 9 is required, the results shall be documented using the ADEM visible emissions observation report. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

Rule 335-3-16-.05(c)

- Records of the observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed opacity, and any corrective actions taken during each visible emissions observation and pressure differential reading shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

Rule 335-3-16-.05(c)

- A semi-annual report shall be submitted to the Air Division according to the following schedule:

Reporting Period	Due Date
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January 1 <sup>st</sup> through June 30 <sup>th</sup>	August 29th
July 1 <sup>st</sup> through December 31 <sup>st</sup>	March 1st

Rule 335-3-16-.05(c)

- The semi-annual report shall contain the following:
  - A detailed description of every instance in which a pressure differential was outside of the allowable range, to include the date, time, cause of the pressure differential, and the corrective action taken.
  - A detailed description of every instance in which visible emissions greater than 10% were observed, to include the date, time, cause of the visible emissions, and the corrective action taken.
  - A copy of every ADEM visible emissions observation report generated during the reporting period.
  - A statement certifying that all required monitoring, recordkeeping, and reporting requirements were accomplished as required.

Rule 335-3-16-.05(c)**Expected Emissions**

According to the permit application, the potential emissions from these units were based on AP-42 emissions factors and are as follows:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
RS – 1a	PM	7.20	17.69
	PM <sub>10</sub>	1.76	4.31
	PM <sub>2.5</sub>	0.29	0.72
RS – 1b	PM	2.19	5.69
	PM <sub>10</sub>	0.80	2.28
	PM <sub>2.5</sub>	0.19	0.63
RS – 2	PM	0.08	0.33
	PM <sub>10</sub>	0.08	0.33
	PM <sub>2.5</sub>	0.04	0.17
RS – 3b	PM	11.51	28.77
	PM <sub>10</sub>	3.11	8.13
	PM <sub>2.5</sub>	0.51	1.48
RS – 5 a-g	PM	4.69	11.52
	PM <sub>10</sub>	1.18	2.90
	PM <sub>2.5</sub>	0.21	0.51
CD – 1	PM	0.31	1.34
	PM <sub>10</sub>	0.31	1.34
	PM <sub>2.5</sub>	0.15	0.67

## DRYING OPERATIONS

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Soybeans are dried in a 45.2 MMBtu/hr natural gas-fired, counter-current Law Marot grain dryer:

Emission Point	Description
CD-2	Law-Marot Grain Dryer

### Applicability

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- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

#### Rule 335-3-16-.03

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

#### Rule 335-3-4-.01(1)

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Control of Particulate Emissions for Process Industries – General"*.

#### Rule 335-3-4-.04(1)

- This unit is a grain dryer located at a grain elevator constructed after August 13, 1978. Therefore, it is subject to the applicable requirements of 40 CFR 60 Subpart DD, *"Standards of Performance for Grain Elevators"*.

#### 40 CFR 60 Subpart DD, §60.300(a)-(b)

- This unit is subject to the applicable requirements of 40 CFR 60 Subpart A, *"General Provisions"*.

#### 40 CFR 60 Subpart A, §60.1(a)

### Emissions Standards

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#### Opacity

- This unit shall not discharge into the atmosphere any gases that exhibit greater than 0% opacity.

#### 40 CFR 60 Subpart DD, §60.302(a)

#### Particulate Matter

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Process Industries – General"*, which states the allowable emissions from each unit shall not

exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Rule 335-3-4-.04(1)

**Operational**

- The facility is subject to a plant-wide throughput limit of 61,425,000 bushels of soybeans per any consecutive 12-month period.

Rule 335-3-14-.04 [BACT]

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### Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

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### Emission Monitoring

- An instantaneous observation of visible emissions from the stack associated with this unit shall be accomplished weekly while the unit is operating.
  - If any visible emissions are observed, corrective action to reduce emissions shall be initiated within 2 hours.

Rule 335-3-16-.05(c)

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### Recordkeeping and Reporting

- Records of each visual emission observation, as well as any Method 9 conducted and any corrective actions taken, shall be kept of file for at least 5 years.

Rule 335-3-16-.05(c)

- Records of the monthly and 12-month rolling total of soybeans processed in this dryer shall be kept in a permanent form suitable for inspection for a period of 5 years from the date of generation and shall be made available upon request.

Rule 335-3-16-.05(c)

- Records of the monthly and 12-month rolling total of fuel used by this dryer shall be kept in a permanent form suitable for inspection for a period of 5 years from the date of generation and shall be made available upon request.

Rule 335-3-16-.05(c)

### Expected Emissions

According to the permit application, the potential emissions from these units were based on AP-42 emissions factors and manufacturer's data:

Emission Point	Pollutant	Potential Emissions	
		lb/hr	TPY
CD – 2	PM	3.84	16.83
	PM <sub>10</sub>	0.96	4.21
	PM <sub>2.5</sub>	0.16	0.72
	SO <sub>2</sub>	0.03	0.12
	NO <sub>x</sub>	4.52	19.80
	CO	3.80	16.63
	VOC	0.25	1.09
	n-hexane	0.08	0.36
	CO <sub>2e</sub>	5,435	23,806

## SOYBEAN PREPARATION

Soybeans enter the preparation building where they pass through four cracking rollers which remove the hulls and break the soybeans into smaller pieces. The removed hulls are ground up prior to being pelletized. Bean meats are flattened into flakes to make the soybean oil extraction more efficient.

This area consists of the following operations:

Emission Point	Description
PR-1	Dehulling w/ Baghouse No. 1
PR-2	Dehulling w/ Baghouse No. 2
PR-4	Soybean Cracking Rolls w/ Baghouse
PR-5	Hull Grinders w/ Baghouse
PR-7	Flaking System w/ Cyclone

### Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

#### Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

#### Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Control of Particulate Emissions for Process Industries – General"*.

#### Rule 335-3-4-.04(1)

- These sources have enforceable limits in place in order to comply with the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

#### Rule 335-3-14-.04 [BACT]

- These sources are subject to the requirements of 40 CFR 64, *"Compliance Assurance Monitoring"*.

#### 40 CFR 64, §64.2

- Emission points PR-1, PR-2, PR-4, PR-5, and PR-7 have limits in place to ensure that the potential to emit, including the effect of control devices, is less than 100 TPY. This is to prevent the facility from being required to collect four or more data values per hour for each parameter monitored under the CAM plan as required in §64.3(b)(4)(ii).

40 CFR 64.3(b)(4)(ii)**Emissions Standards****Opacity**

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)**Particulate Matter**

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “*Process Industries – General*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \quad (P \geq 30 \text{ tons/hr})$$

or

$$E = 3.59P^{0.62} \quad (P < 30 \text{ tons/hr})$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Rule 335-3-4-.04(1)

- Bunge requested the following PM emissions limits to ensure that the potential to emit, including the effect of control devices, is less than 100 TPY:

Emission Point	Allowable Emissions (lb/hr)	Allowable Emissions (TPY)
PR-1	21.7	95.0
PR-2	21.7	95.0
PR-4	21.7	95.0
PR-5	21.7	95.0
PR-7	21.7	95.0

40 CFR 64, §64.3(b)(4)(ii)

- Particulate emissions from emission points PR-4 and PR-7 shall not exceed 0.002 gr/dscf.

Rule 335-3-14-.04 [BACT]



- PM emissions from these units shall not exceed the lesser of the limits described above.

Rule 335-3-4-.04(1) or 40 CFR 64.3(b)(4)(ii)

#### **Operational**

- The facility is subject to a plant-wide throughput limit of 61,425,000 bushels of soybeans per any consecutive 12-month period.

Rule 335-3-14-.04 [BACT]

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### **Compliance and Performance Test Methods and Procedures**

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

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### **Emission Monitoring**

- Emission points PR-1, PR-2, PR-4, PR-5, and PR-7 are subject to the following requirements under 40 CFR 64, "*Compliance Assurance Monitoring*".
  - An instantaneous observation of visible emissions from the baghouses and cyclone associated with these units shall be accomplished daily while in operation.
  - If the observed instantaneous opacity is greater than 10%, corrective action to reduce emissions shall be initiated within 2 hours.
  - After corrective action, a follow-up visible emissions check shall be conducted. If instantaneous visible emissions of an opacity greater than 10% are observed, a visible emissions observation shall be conducted within 30 minutes in accordance with 40 CFR 60 Appendix A, Method 9, for a minimum of 12 minutes. Further corrective action shall be taken to reduce emissions to an appropriate level.
  - The facility shall inspect and clean each baghouse no less frequently than annually and whenever visible emissions are observed.
  - The pressure drop ( $\Delta P$ ) across each baghouse shall be monitored and recorded weekly while the units are operating.
  - If the observed pressure drop ( $\Delta P$ ) is less than 0.5 inches of water or greater than 8 inches of water, corrective action shall be initiated within 2 hours.

Rule 335-3-16-.05(c) & 40 CFR 64

## Recordkeeping and Reporting Requirements

- If a visible emissions observation utilizing Method 9 is required, the results shall be documented using the ADEM visible emissions observation form. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

### Rule 335-3-16-.05(c)

- Records of the observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed opacity, and any corrective actions taken during each visible emissions observation shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

### Rule 335-3-16-.05(c)

- Records of the observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed pressure drop ( $\Delta P$ ), and any corrective actions taken during each pressure drop ( $\Delta P$ ) observation shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

### Rule 335-3-16-.05(c)

- A semiannual report shall be submitted to the Department according to the following schedule:

Reporting Period	Due Date
January 1 <sup>st</sup> through June 30 <sup>th</sup>	August 29th
July 1 <sup>st</sup> through December 31 <sup>st</sup>	March 1st

The report shall contain the following:

- A detailed description of every instance in which visible emissions greater than 10% were observed, to include the date, time, cause of the visible emissions, and the corrective action taken.
- A copy of every ADEM Method 9 visible emissions observation report generated during the reporting period.
- A description of every instance in which the observed pressure drop was less than 0.5 inches of water and greater than 8 inches of water, to include time, date, observed pressure drop, cause of the increased or decreased pressure drop, and the corrective action taken.
- A statement certifying that all required monitoring, recordkeeping, and reporting requirements were accomplished as required.

Rule 335-3-16-.05(c)

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Expected Emissions

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According to the permit application, the potential emissions from these units were based on stack test data:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
PR – 1	PM	0.39	1.69
	PM <sub>10</sub>	0.39	1.69
	PM <sub>2.5</sub>	0.19	0.84
PR – 2	PM	0.39	1.69
	PM <sub>10</sub>	0.39	1.69
	PM <sub>2.5</sub>	0.19	0.84
PR – 4	PM	0.09	0.38
	PM <sub>10</sub>	0.09	0.38
	PM <sub>2.5</sub>	0.04	0.19
PR – 5	PM	0.14	0.60
	PM <sub>10</sub>	0.14	0.60
	PM <sub>2.5</sub>	0.07	0.30
PR – 7	PM	0.62	2.73
	PM <sub>10</sub>	0.62	2.73
	PM <sub>2.5</sub>	0.31	1.37

## MEAL AND HULL PROCESSING, STORAGE, AND LOADOUT

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After soybean flakes have been toasted, dried, and cooled, the flakes, now called meal, are ground into the desired size particle. Meal is loaded into trucks and railcars before leaving the facility. Ground hulls are collected by a cyclone and compressed into pellets, which are then cooled again before being transferred to storage.

This area is comprised of the following operations:

Emission Point	Description
MH-1	Meal Grinding/Additive Bin Aspiration w/ Baghouse
MH-2c	Hull Storage Bin C w/ Atmospheric Bin Vents
MH-2e, f	Hull Pellet Storage Bins E, F w/ Atmospheric Bin Vents
MH-2g	Meal Storage Bin w/ Bin Vent Filters
MH-3	Hull Pellet Cooler w/ Cyclone
MH-4	Meal Truck Loadout w/ Baghouse
MH-5	Meal Rail Loadout w/ Baghouse
MH-6	Hull Receiving Cyclone w/ Baghouse
MH-7	Meal House, Meal Storage Bins, and Meal Loadout Bins w/ Baghouse

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### Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

#### Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

#### Rule 335-3-4-.01(1)

- These units are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Control of Particulate Emissions for Process Industries – General"*.

#### Rule 335-3-4-.04(1)

- Emission point MH-1 has an enforceable limit in place in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

#### Rule 335-3-14-.04 [Anti-PSD]

- These sources have enforceable limits in place in order to comply with the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [BACT]

- Emission points MH-1, MH-4, MH-5, MH-6, and MH-7 are subject to the requirements of 40 CFR 64, “Compliance Assurance Monitoring”.

40 CFR 64, §64.2

- Emission points MH-4, MH-5, MH-6, and MH-7 have limits in place to ensure that the potential to emit, including the effect of control devices, is less than 100 TPY. This is to prevent the facility from being required to collect four or more data values per hour for each parameter monitored under the CAM plan as required in §64.3(b)(4)(ii).

40 CFR 64.3(b)(4)(ii)

## Emissions Standards

**Opacity**

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “Visible Emissions”, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)**Particulate Matter**

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), “Process Industries – General”, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (} P \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (} P < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

Rule 335-3-4-.04(1)

- Bunge requested the following PM emissions limits to ensure that the potential to emit, including the effect of control devices, is less than 100 TPY:

Emission Point	Allowable Emissions (lb/hr)	Allowable Emissions (TPY)
MH-4	21.7	95.0
MH-5	21.7	95.0
MH-6	21.7	95.0
MH-7	21.7	95.0

40 CFR 64, §64.3(b)(4)(ii)

- Particulate emissions from emission point MH-1 shall not exceed 1.14 lb/hr (5.0 TPY).

Rule 335-3-14-.04 [Anti-PSD]

- PM emissions from these units shall not exceed the lesser of the limits described above.

Rule 335-3-4-.04(1) or 40 CFR 64.3(b)(4)(ii)

**Operational**

- The facility is subject to a plant-wide throughput limit of 61,425,000 bushels of soybeans per any consecutive 12-month period.

Rule 335-3-14-.04 [BACT]

## Compliance and Performance Test Methods and Procedures

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

## Emission Monitoring

- Emission points MH-1, MH-4, MH-5, MH-6, and MH-7 are subject to the following requirements under 40 CFR 64, “*Compliance Assurance Monitoring*”.
  - An instantaneous observation of visible emissions from the baghouses and cyclone associated with these units shall be accomplished daily while in operation.
  - If the observed instantaneous opacity is greater than 10%, corrective action to reduce emissions shall be initiated within 2 hours.
  - After corrective action, a follow-up visible emissions check shall be conducted. If instantaneous visible emissions of an opacity greater than 10% are observed, a visible emissions observation shall be conducted within 30 minutes in accordance with 40 CFR

60 Appendix A, Method 9, for a minimum of 12 minutes. Further corrective action shall be taken to reduce emissions to an appropriate level.

- The facility shall inspect and clean each baghouse and cyclone no less frequently than annually and whenever visible emissions are observed.
- The pressure drop ( $\Delta P$ ) across each baghouse shall be monitored and recorded weekly while the units are operating.
- If the observed pressure drop ( $\Delta P$ ) is less than 0.5 inches of water or greater than 8 inches of water, corrective action shall be initiated within 2 hours.

Rule 335-3-16-.05(c) & 40 CFR 64

- Emission points MH-2c, MH-2e-f, MH-2g, and MH-3, which are not subject to 40 CFR 64, are subject to the following requirements:
  - An instantaneous observation of visible emissions from the baghouses and cyclone associated with these units shall be accomplished weekly while in operation.
  - If the observed instantaneous opacity is greater than 10%, corrective action to reduce emissions shall be initiated within 2 hours.
  - After corrective action, a follow-up visible emissions check shall be conducted. If instantaneous visible emissions of an opacity greater than 10% are observed, a visible emissions observation shall be conducted within 30 minutes in accordance with 40 CFR 60 Appendix A, Method 9, for a minimum of 12 minutes. Further corrective action shall be taken to reduce emissions to an appropriate level.
  - The facility shall inspect and clean each baghouse and cyclone no less frequently than annually and whenever visible emissions are observed.

Rule 335-3-16-.05(c)

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## Recordkeeping and Reporting Requirements

- If a visible emissions observation utilizing Method 9 is required, the results shall be documented using the ADEM visible emissions observation form. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

Rule 335-3-16-.05(c)

- Records of the observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed opacity, and any corrective actions taken during each visible emissions observation shall be kept in a permanent form suitable for inspection. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

Rule 335-3-16-.05(c)

- Records of the observation date, observation time, emission point designation, emission point operation mode, name of the observer, observed pressure drop ( $\Delta P$ ), and any corrective actions taken during each pressure drop ( $\Delta P$ ) observation shall be kept in a permanent form suitable for

inspection. These records shall be maintained for a period of at least 5 years from the date of generation and shall be made available to the permitting authority upon request.

Rule 335-3-16-.05(c)

- Records documenting each baghouse and cyclone inspection and cleaning shall be kept in a form suitable for inspection for a period of at least 5 years from the date of generation.

Rule 335-3-16-.05(c)

- A semiannual report shall be submitted to the Department according to the following schedule:

Reporting Period	Due Date
January 1 <sup>st</sup> through June 30 <sup>th</sup>	August 29 <sup>th</sup>
July 1 <sup>st</sup> through December 31 <sup>st</sup>	March 1 <sup>st</sup>

The report shall contain the following:

- A detailed description of every instance in which visible emissions greater than 10% were observed, to include the date, time, cause of the visible emissions, and the corrective action taken.
- A copy of every ADEM Method 9 visible emissions observation report generated during the reporting period.
- A description of every instance in which the observed pressure drop was less than 0.5 inches of water and greater than 8 inches of water, to include time, date, observed pressure drop, cause of the increased or decreased pressure drop, and the corrective action taken.
- A statement certifying that all required monitoring, recordkeeping, and reporting requirements were accomplished as required.

Rule 335-3-16-.05(c)

## Expected Emissions

According to the permit application, the potential emissions from this process are based on AP-42 emissions factors and stack test data. Emission points MH-4 and MH-5 include fugitive emissions from truck and rail loadout:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
MH – 1	PM	0.10	0.46
	PM <sub>10</sub>	0.10	0.46
	PM <sub>2.5</sub>	0.05	0.23
MH – 2c	PM	0.35	1.54
	PM <sub>10</sub>	0.09	0.39
	PM <sub>2.5</sub>	0.02	0.068



MH – 2e-f	PM	0.046	0.20
	PM <sub>10</sub>	0.011	0.049
	PM <sub>2.5</sub>	0.002	0.008
MH – 2g	PM	0.017	0.076
	PM <sub>10</sub>	0.017	0.076
	PM <sub>2.5</sub>	0.009	0.038
MH – 3	PM	0.27	1.20
	PM <sub>10</sub>	0.27	1.20
	PM <sub>2.5</sub>	0.19	0.84
MH – 4	PM	8.28	21.09
	PM <sub>10</sub>	1.38	3.78
	PM <sub>2.5</sub>	0.17	0.58
MH – 5	PM	20.54	20.70
	PM <sub>10</sub>	3.29	3.39
	PM <sub>2.5</sub>	0.35	0.39
MH – 6	PM	0.005	0.02
	PM <sub>10</sub>	0.005	0.02
	PM <sub>2.5</sub>	0.002	0.01
MH – 7	PM	0.27	1.19
	PM <sub>10</sub>	0.27	1.19
	PM <sub>2.5</sub>	0.14	0.59

## EXTRACTION PROCESS BOILERS

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Three 99 MMBtu/hr natural gas-fired boilers provide steam for the soybean oil extraction process.

This area consists of the following units:

Emission Point	Description
BO-3	99.0 MMBtu/hr Natural Gas-Fired Boiler
BO-4	99.0 MMBtu/hr Natural Gas-Fired Boiler
BO-5	99.0 MMBtu/hr Natural Gas-Fired Boiler

### Applicability

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- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03, *"Control of Particulate Emissions – Fuel Burning Equipment"*.

Rule 335-3-4-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-5-.01, *"Control of Sulfur Compound Emissions – Fuel Combustion"*.

Rule 335-3-5-.01

- These sources have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [Anti-PSD]

- These boilers were constructed after June 9, 1989, and have design heat input capacities greater than 10 MMBtu/hr and less than 100 MMBtu/hr. Therefore, they are subject to the applicable requirements of 40 CFR 60 Subpart D<sub>c</sub>, *"Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"*.

40 CFR 60 Subpart D<sub>c</sub>, §60.40c(a)

- These sources are existing industrial boilers at a major source of HAP. Therefore, they are subject to the applicable requirements of 40 CFR 63 Subpart DDDDD, “*National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*”.

40 CFR 63 Subpart DDDDD, §63.7485

- The boilers are subject to the applicable requirements of 40 CFR 63 Subpart A, “*General Provisions*”, as listed in Table 10 of 40 CFR 63 Subpart DDDDD.

40 CFR 63 Subpart DDDDD, §63.7565

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## Emissions Standards

### Opacity

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “*Visible Emissions*”, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)

### Particulate Matter

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03(1), “*Fuel Burning Equipment*”, which states the allowable emissions from each unit shall not exceed that which is calculated using the following equation:

$$E = 1.38H^{-0.44}$$

Where:

E = Emissions in pounds per million Btu

H = Heat input in millions of Btu per hour

Rule 335-3-4-.03(1)

- Particulate emissions from each source shall not exceed 1.45 lb/hr (6.35 TPY). Since these units are now natural gas-fired units, they should be in compliance with this limit.

Rule 335-3-14-.04 [Anti-PSD]

### Sulfur Dioxide

- Sulfur oxide emissions, measured as sulfur dioxide, from these units shall not exceed 4.0 lb/MMBtu heat input.

Rule 335-3-5-.01(1)**Nitrogen Oxide**

- Nitrogen oxide emissions from these sources shall not exceed 6.40 lb/hr.

Rule 335-3-14-.04 [Anti-PSD]**Operational**

- The facility has chosen to run these boilers as natural gas-fired units that do not burn liquid fuel. Therefore, the anti-PSD limits relating to liquid fuel will be removed from the permit and replaced with an anti-PSD limit that only natural gas shall be burned as fuel in these units.

Rule 335-3-14-.04 [Anti-PSD]

- At all times, the boilers must be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

40 CFR 63 Subpart DDDDD, §63.7500(a)(3)

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**Compliance and Performance Test Methods and Procedures**

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- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 6 of 40 CFR 60, Appendix A, shall be used in the determination of sulfur dioxide emissions.

Rule 335-3-1-.05

- Method 7 of 40 CFR 60, Appendix A, shall be used in the determination of nitrogen oxide emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

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**Emission Monitoring**

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- Annual tune-ups of the boilers must be conducted based on the requirements in §63.7540(a)(10)(i) through §63.7540(a)(10)(vi). Each annual tune-up must be no more than 13 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

40 CFR 63 Subpart DDDDD, §63.7540(a)(10), §63.7540(a)(13), and §63.7515(d)

## Recordkeeping and Reporting Requirements

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- Records of the amount of fuel combusted by these units during each calendar month shall be maintained.

40 CFR 60 Subpart Dc, §60.48c(g)(2)

- If the boilers use a fuel other than natural gas during a period of natural gas curtailment or supply interruption, as defined in §63.7575, the facility must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption. The notification must include the information specified in §63.7545(f)(1) through (5).

40 CFR 63 Subpart DDDDD, §63.7545(f)

- The Permittee must submit annual compliance reports for these units no later than January 31 as required by §63.7550(b). The annual reporting periods begin on January 1 and end on December 31.

40 CFR 63 Subpart DDDDD, §63.7550(b)

- The annual reports shall contain the following:
  - Company and Facility name and address
  - Process unit information, emissions limitations, and operating parameter limitations
  - Date of report and beginning and ending dates of the reporting period
  - Include the date of the most recent tune-up. Include the date of the most recent burner inspection if it was not done annually and was delayed until the next scheduled or unscheduled unit shutdown
  - Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

40 CFR 63 Subpart DDDDD, §63.7550(c)

- If the boiler uses an alternative fuel other than natural gas, records must be kept of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the boiler operated during periods of gas curtailment or gas supply emergencies.

40 CFR 63 Subpart DDDDD, §63.7555(h)

- Records required by 40 CFR 63 Subpart DDDDD must be kept in a form suitable for expeditious review for a period of 5 years following the date of each record. Records must be kept on site, or

accessible from on site, for at least 2 years after the date of each occurrence. Records may be kept off site for the remaining 3 years.

40 CFR 63 Subpart DDDDD, §63.7560(a)-(c)

### Expected Emissions

- According to the permit application, potential emission are based on AP-42 emissions factors:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
BO-3, BO-4, BO-5	PM	2.26	9.89
	PM <sub>10</sub>	2.26	9.89
	PM <sub>2.5</sub>	2.26	9.89
	SO <sub>2</sub>	0.18	0.78
	NO <sub>x</sub>	14.46	63.35
	CO	24.95	109.27
	VOC	1.63	7.15
	n-hexane	0.53	2.34
	CO <sub>2e</sub>	35,712	156,423

## SOLVENT EXTRACTION PROCESS

Soybean meal is washed with a hexane solvent to extract soybean oil. The meal is then desolventized to remove the hexane and toasted before going to the dryer-cooler. The oil-hexane mixture is then heated so the hexane evaporates, leaving crude soybean oil. The hexane vapor is condensed and reused.

This area consists of the following operations:

Emission Point	Description
EX-1	Soybean Oil Solvent Extraction System w/ Solvent Recovery System
EX-2	Desolventizer-Toaster/Dryer-Cooler (DT/DC)

### Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

Rule 335-3-4-.01(1)

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Control of Particulate Emissions for Process Industries – General"*.

Rule 335-3-4-.04(1)

- These sources have enforceable limits in place in order to comply with the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [BACT]

- These sources are subject to the applicable requirements of 40 CFR 63 Subpart GGGG, *"National Emissions Standards for Hazardous Air Pollutants: Solvent Extraction for Vegetable Oil Production"*.

40 CFR 63 Subpart GGGG, §63.2832

- These sources are subject to the requirements imposed by Civil Action No. 2:06-CV-02209, United States District Court for the Central District of Illinois, entered on January 16, 2007. These requirements shall be added back into the permit after being removed in a previous renewal.

Rule 335-3-16-.05(a)

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## Emissions Standards

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### Opacity

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

#### Rule 335-3-4-.01(1)

### Particulate Matter

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.04(1), *"Process Industries – General"*, which states the allowable emissions from each unit shall not exceed that which is calculated using the process weight equations as defined in ADEM Admin. Code r. 335-3-4-.04(1):

$$E = 17.31P^{0.16} \text{ (P} \geq 30 \text{ tons/hr)}$$

or

$$E = 3.59P^{0.62} \text{ (P} < 30 \text{ tons/hr)}$$

Where:

E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

#### Rule 335-3-4-.04(1)

- Particulate emissions from the cyclones associated with the meal dryer and cooler shall not exceed 0.025 grains per standard cubic foot (gr/scf) each.

#### Rule 335-3-14-.04 [BACT]

### Volatile Organic Compounds

- There are no unit specific emissions standards for volatile organic compound emissions.

### Hazardous Air Pollutants

- This facility shall maintain a compliance ratio of less than or equal to 1.00 of actual solvent loss to allowable solvent loss. The allowable solvent loss is a function of the oilseed processed and the solvent loss factor (SLF) of 0.20 for this facility.

#### 40 CFR 63 Subpart GGGG, §63.2840(c)

- A mineral oil absorber shall be used on the extractor main vent to capture hexane emissions.



Rule 335-3-14-.04 [BACT]

- This process shall not exceed a 12-month rolling solvent loss of 0.19 gallons of hexane per ton of soybeans processed.

Rule 335-3-14-.04 [BACT]**Operational**

- The facility is subject to a plant-wide throughput limit of 61,425,000 bushels of soybeans per any consecutive 12-month period.

Rule 335-3-14-.04 [BACT]

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### Compliance and Performance Test Methods and Procedures

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- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

- If performance testing is required, volatile organic compound emissions from this process shall be measured in accordance with 40 CFR 63.2850(a)(6).

40 CFR 63 Subpart GGGG, §63.2850(a)(6)

- The facility shall keep a copy of the compliance plan and the startup, shutdown, and malfunction (SSM) plan on-site and readily available as long as the source is operational. These plans shall provide detailed procedures for operating and maintaining this source to minimize emissions and must specify a program of corrective action for malfunctioning process and air pollution control equipment and reflect the best practices now in use by the industry to minimize emissions.

40 CFR 63 Subpart GGGG, §63.2851 & §63.2852

- The VOC solvent loss ratio (SLR) for this facility shall be 0.19 gallons of solvent lost per ton oilseed processed.

Rule 335-3-16-.05(a)

- To determine compliance with the VOC SLR limit, the facility shall maintain a Compliance Ratio of less than or equal to 1.0, which shall be calculated as follows:

Compliance Ratio = Actual Solvent Loss (gal)/Allowable Solvent Loss (gal)

Where:

Actual Solvent loss = Gallons of solvent loss during previous 12 operating months

Allowable Solvent Loss = Oilseed \* SLR

Oilseed = Tons of each oilseed processed during the previous 12 operating months

SLR = 0.19 gal/ton

Rule 335-3-16-.05(a)

- Solvent losses and quantities of oilseed processed during startup and shutdown periods shall not be excluded in determining solvent losses.

Rule 335-3-16-.05(c)

- For purposes of calculating SLR, the facility may apply the provisions of 40 CFR 63 Subpart GGGG pertaining to malfunction periods when both conditions below are met:
  - The malfunction results in a total plant shutdown, which means a shutdown of solvent extraction system; and
  - The total amount of solvent loss to which the provisions of 40 CFR 63 Subpart GGGG relating to malfunctions is applied in a rolling 12-month period does not exceed the Allowable Malfunction Volume as defined below. The Allowable Malfunction Volume in gallons is equal to the facility's 12-month Crush capacity times the final VOC SLR limit (0.19 gal/ton) times 0.024, as follows:

Allowable Malfunction Volume (gal) = 12-month Crush capacity (tons) \* Final VOC SLR Limit (0.19 gal/ton) \* 0.024

Except as otherwise set forth herein, the facility must include all solvent losses when determining compliance with its final VOC SLR limit. The total solvent loss corresponding to a malfunction period will be calculated as the difference in solvent inventory, as defined in 40 CFR §63.2862(c)(1), for the day before the malfunction period began and the solvent inventory on the day the plant resumes normal operation. During a malfunction period, the facility shall comply with the Startup, Shutdown, Malfunction ("SSM") Plan as required under Subpart GGGG.

Rule 335-3-16-.05(c)

- Compliance with the final VOC SLR limits shall be determined in accordance with 40 CFR 63 Subpart GGGG with the following exceptions:
  - Provisions pertaining to HAP content shall not apply.
  - Monitoring and recordkeeping of solvent losses shall be conducted daily.
  - Solvent losses and quantities of oilseed processed during startup and shutdown periods shall not be excluded in determining solvent losses.
  - Records shall be kept in a form substantially like the following table:

	Total Crush (tons)		Total Solvent Loss (gallons)		Malfunction Period Solvent Loss (gallons)		Adjusted Solvent Loss <sup>a</sup> (gallons)		SLR <sup>b</sup> (gal/ton)	Plant Compliance Ratio <sup>c</sup>
Date	Monthly	12-month rolling	Monthly	12-month rolling	Monthly	12-month rolling	Monthly	12-month rolling	12-month rolling	

<sup>a</sup> Adjusted Solvent Loss is equal to Total Solvent Loss minus Malfunction Period Solvent Loss.

<sup>b</sup> Solvent Loss Ratio is equal to 12-month rolling Adjusted Solvent Loss divided by 12-Month Rolling Total Crush. Compliance determination is based on 12-Month Rolling SLR value compared to Interim or Final VOC SLR Limit.

<sup>c</sup> Plant Compliance Ratio = Plant Actual Solvent Loss (gal) / Allowable Solvent Loss (gal)

Where:

Plant Actual Solvent Loss = Gallons of solvent loss during previous 12 operating months

Allowable Solvent Loss = Oilseed \* SLR

Oilseed = Tons of each oilseed processed during the previous 12 operating months

SLR = Interim or Final solvent loss ratio (SLR) limit

#### Rule 335-3-16-.05(c)

- The following equation shall be used to determine the actual solvent loss occurring from the affected source for all normal operating periods recorded within a calendar month:

$$\text{Monthly Actual Solvent (gal)} = \sum_{i=1}^n (\text{SOLV}_B - \text{SOLV}_E + \text{SOLV}_R \pm \text{SOLV}_A)_i$$

Where:

SOLV<sub>B</sub> = Gallons of solvent in the inventory at the beginning of normal operating period “i”

SOLV<sub>E</sub> = Gallons of solvent in the inventory at the end of normal operating period “i”

SOLV<sub>R</sub> = Gallons of solvent received between the beginning and ending inventory dates of normal operating period “i”

SOLV<sub>A</sub> = Gallons of solvent added or removed from the extraction solvent inventory during normal operating period “i”

n = Number of normal operating periods in a calendar month.

#### 40 CFR 63 Subpart GGGG, §63.2853(b)

- The monthly weighted average volume fraction of HAP shall be calculated using the following equation:

$$\text{Monthly Weighted Average HAP Content of Extraction Solvent (volume fraction)} = \frac{\sum_{i=1}^n (\text{Received}_i * \text{Content}_i)}{\text{Total Received}}$$

Where:

Received<sub>i</sub> = Gallons of extraction solvent received in delivery “i.”

Content<sub>i</sub> = The volume fraction of HAP in extraction solvent delivery “i.”

Total Received = Total gallons of extraction solvent received since the end of the previous operating month.

n = Number of extraction solvent deliveries since the end of the previous operating month.

#### 40 CFR 63 Subpart GGGG, §63.2854(b)(2)

- The twelve-month weighted average volume fraction of HAP shall be calculated using the following equation:

$$\text{12-Month Weighted Average of HAP Content in Solvent Received (volume fraction)} = \frac{\sum_{i=1}^{12} (\text{Received}_i * \text{Content}_i)}{\text{Total Received}}$$

Received<sub>i</sub> = Gallons of extraction solvent received in operating month “i”

Content<sub>i</sub> = Average volume fraction of HAP in extraction solvent received in operating month “i”

Total Received = Total gallons of extraction solvent received during the previous 12 operating months.

40 CFR 63 Subpart GGGG, §63.2854(b)(3)

- Monthly oilseed processed shall be determined using the following equation:

$$\text{Monthly Quantity of Each Oilseed Processed (tons)} = \sum_{n=1}^n (\text{SEED}_B - \text{SEED}_E + \text{SEED}_R \pm \text{SEED}_A)$$

Where:

SEED<sub>B</sub> = Tons of oilseed in the inventory at the beginning of normal operating period “i”

SEED<sub>E</sub> = Tons of oilseed in the inventory at the end of normal operating period “i”

SEED<sub>R</sub> = Tons of oilseed received during normal operating period “i”

SEED<sub>A</sub> = Tons of oilseed added or removed from the oilseed inventory during normal operating period “i”

n = Number of normal operating periods

40 CFR 63 Subpart GGGG, §63.2855(b)

- The 12-month actual solvent loss shall be the sum of each monthly actual solvent loss for the previous 12-month period.

40 CFR 63 Subpart GGGG, §63.2853(a)

- The 12-month volume of soybeans processed shall be the sum of the monthly volumes of soybeans process for the previous 12-month period.

40 CFR 63 Subpart GGGG, §63.2855(a)

- The volume fraction of n-Hexane in the solvent shall be obtained from the manufacturer’s Material Safety Data Sheet (MSDS) or a manufacturer’s certificate of analysis.

40 CFR 63 Subpart GGGG, §63.2854(b)

## Emission Monitoring

- Sources EX-1 and EX-2 are not subject to 40 CFR 64, “Compliance Assurance Monitoring” because there are no pollution control devices at this point. Emission point EX-2 is **not** subject to 40 CFR 64, “Compliance Assurance Monitoring”. Though the DT/DC process uses cyclones, they are considered inherent process equipment rather than air pollution control equipment. Meal exiting

the dryer-cooler enters the cyclones and drops out into a hopper for shipping or further processing. See letter dated December 22, 2005.

40 CFR 64, §64.2

- By the end of each calendar month, the monthly total solvent loss in gallons and the compliance ratio shall be determined for the previous operating month.

40 CFR 63 Subpart GGGG, §63.2853

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## Recordkeeping and Reporting Requirements

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- The compliance demonstration plan and SSM plan shall be kept on-site in a permanent form suitable for inspection and made available upon request. These reports shall be kept for the life of the facility.

40 CFR 63 Subpart GGGG, §63.2862

- The following records shall be kept in a form suitable for inspection and made available upon request. These records shall be kept for a period of 5 years from the date of generation:
  - Monthly and 12-month rolling totals of hexane solvent usage
  - Monthly and 12-month rolling totals of actual solvent loss
  - Monthly and 12-month rolling totals (in tons) of oilseed processed
  - Monthly and 12-month compliance ratios
  - Volume fraction of each HAP in each delivery of extraction solvent
  - Total gallons of extraction solvent received in each delivery
  - Monthly weighted average volume fraction of HAP in the extraction solvent for the previous 12 months
  - Manufacturer supplied certificates of analysis or Material Safety Data Sheets (MSDS) for the hexane solvent

40 CFR 63 Subpart GGGG, §63.2862(c) & (d)

- An annual MACT compliance certification is due at the Department 12 calendar months after submitting the notification of compliance status. Each subsequent annual MACT compliance certification is due 12 calendar months after the previous annual compliance certification. The annual MACT compliance certification provides the compliance status for each operating month during the 12 calendar months period ending 60 days prior to the date on which the report is due. This report shall include the following:
  - The name and address of the owner or operator
  - The physical address of the vegetable oil production process
  - Each listed oilseed type processed during the 12 calendar months period covered by the report
  - Each HAP present in concentrations greater than 1 percent by volume in each delivery of solvent received during the 12 calendar months period covered by the report
  - A statement designating the source as a major source of HAP or a demonstration that the source qualifies as an area source

- A compliance certification to indicate whether the source was in compliance for each compliance determination made during the 12 calendar months period covered by the report
- Certification that the facility is following the procedures described in the plan for demonstrating compliance
- Certification that the compliance ratio is less than or equal to 1.00

40 CFR 63 Subpart GGGG, §63.2861(a)

- A deviation notification report shall be submitted to the Department for each instance that the calculated compliance ratio exceeds 1.00. This report shall be received by the Department by no later than the last day of the month following the calendar month in which the deviation occurred.

40 CFR 63 Subpart GGGG, §63.2861(b)

- If operating under an initial startup or malfunction period, an SSM report stating that actions were taken that were consistent with the procedures in the SSM plan shall be submitted to the Department by the end of the calendar month following each month in which the initial startup or malfunction period occurred. This report shall include the following information:
  - Instances in which actions were taken that were not consistent with the SSM plan, but the source did not exceed any applicable emission limit
  - The number, duration, and a brief description of each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limit to be exceeded
  - A statement containing the name, title, and signature of the owner or operator or other responsible official certifying that the information contained in the report is true, accurate, and complete

40 CFR 63 Subpart GGGG, §63.2861(c)

- If a SSM is handled differently during an initial startup or malfunction period from the procedures in the SSM plan, and the relevant emission requirements are exceeded, an immediate SSM report (telephone call or facsimile transmission) must be submitted within 2 working days after starting actions inconsistent with the SSM plan, followed by a letter within 7 working days after the end of the event. The letter must include the following information:
  - The name, title, and signature of the responsible official who is certifying the accuracy of the report, an explanation of the event, and the reasons for not following the SSM plan.
  - A description and date of the SSM event, its duration, and reason it qualifies as SSM.
  - An estimate of the solvent loss for the duration of the SSM event with supporting documentation.

40 CFR 63 Subpart GGGG, §63.2861(d)

- Records required by 40 CFR 63 Subpart GGGG shall be kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Each record must be kept on-site for at least 2 years after the date of occurrence or generation and may be kept off-site for the remaining 3 years.

40 CFR 63 Subpart GGGG, §63.2863

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**Expected Emissions**

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According to the permit application, potential emissions are based on consent decree emissions factors and historical stack test data:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
EX – 1	VOC	225.0	985.6
	HAP (n-hexane)	144.0	630.8
EX – 2	PM	0.67	2.92
	PM <sub>10</sub>	0.67	2.92
	PM <sub>2.5</sub>	0.25	1.10



## EDIBLE OIL REFINING PROCESS

Soybean oil is received from the extraction process or off-site suppliers and refined by neutralizing fatty acids, removing impurities, bleaching, hydrogenating, and filtering.

This area consists of the following operations:

Emission Point	Description
REF-1	13 MMBtu/hr Natural Gas-Fired Boiler
REF-2	13 MMBtu/hr Natural Gas-Fired Boiler
REF-3	Edible Oil Refining Process
REF-4	No. 1 Clay Silo w/ Bin Vents
REF-5	5.0 MMBtu/hr Natural Gas-Fired Boiler
REF-6	No. 4 Trisyl Silo w/ Bin Vents

### Applicability

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

#### Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

#### Rule 335-3-4-.01(1)

- The boilers are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03, *"Control of Particulate Emissions- Fuel Burning Equipment"*.

#### Rule 335-3-4-.03

- The boilers are subject to the applicable requirements of ADEM Admin. Code r. 335-3-5-.01, *"Control of Sulfur Compound Emissions – Fuel Combustion"*.

#### Rule 335-3-5-.01

- Emission points REF-1, 2, 4, and 6 have enforceable limits in place in order to prevent them from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

#### Rule 335-3-14-.04 [Anti-PSD]

- Emission point REF-3 has BACT limits in place, as defined in ADEM Admin. Code r. 335-3-14-.04(a)(2)(i). These limits were determined under the provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [BACT]

- Boilers REF-1 and 2 were constructed after June 9, 1989, and have design heat input capacities greater than 10 MMBtu/hr and less than 100 MMBtu/hr. Therefore, they are subject to the applicable requirements of 40 CFR 60 Subpart D<sub>c</sub>, *"Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"*.

40 CFR 60 Subpart D<sub>c</sub>, §60.40c(a)

- Boilers REF-1, 2, and 5 are existing industrial boilers at a major source of HAP. Therefore, they are subject to the applicable requirements of 40 CFR 63 Subpart DDDDD, *"National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters"*.

40 CFR 63 Subpart DDDDD, §63.7485

- The boilers are subject to the applicable requirements of 40 CFR 63 Subpart A, *"General Provisions"* as listed in Table 10 of 40 CFR 63 Subpart DDDDD.

40 CFR 63 Subpart DDDDD, §63.7565

## Emissions Standards

**Opacity**

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)**Particulate Matter**

- The following emission points have enforceable limits in place for particulate matter. For emission points REF-1, REF-2, REF-4, and REF-6 these limits are in place in order to prevent them from being subject to the applicable provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*. For REF-5, this limit is placed as per ADEM Admin. Code r. 335-3-4-.03, *"Control of Particulate Emissions – Fuel Burning Equipment"*.

Emission Point	Allowable Emissions
REF-1	0.18 lb/hr (0.79 TPY)
REF-2	0.18 lb/hr (0.79 TPY)
REF-4	0.22 lb/hr (0.94 TPY)

REF-5	0.5 lb/MMBtu (2.5 lb/hr)
REF-6	0.12 lb/hr (0.52 TPY)

Rule 335-3-14-.04 [Anti-PSD] & 335-3-4-.03**Sulfur Dioxide**

- Sulfur oxide emissions, measured as sulfur dioxide, from the boilers shall not exceed 4.0 lb/MMBtu heat input.

Rule 335-3-5-.01(1)**Nitrogen Oxide**

- Nitrogen oxide emissions from boilers REF-1 and 2 shall not exceed 1.6 lb/hr each.

Rule 335-3-14-.04 [Anti-PSD]**Volatile Organic Compounds**

- VOC emissions from the edible oil refinery REF-3 shall not exceed 42.0 lb/hr. Crude oil received by the edible oil refinery shall not exceed 0.00035 lb of VOC per lb of crude oil.

Rule 335-3-14-.04 [BACT]**Operational**

- At all times, the boilers must be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

40 CFR 63 Subpart DDDDD, §63.7500(a)(3)

- The facility has chosen to run the boilers as natural gas-fired units that do not burn liquid fuel. Therefore, the anti-PSD limits relating to the sulfur content of liquid fuel will be removed from the permit and replaced with an anti-PSD limit that only natural gas shall be burned as fuel in these units.

Rule 335-3-14-.04 [Anti-PSD]

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**Compliance and Performance Test Methods and Procedures**

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 6 of 40 CFR 60, Appendix A, shall be used in the determination of sulfur dioxide emissions.

Rule 335-3-1-.05

- Method 7 of 40 CFR 60, Appendix A, shall be used in the determination of nitrogen oxide emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

- Method 25 of 40 CFR 60, Appendix A, shall be used in the determination of VOC emissions.

Rule 335-3-1-.05

- The monthly composite VOC content of the edible oil received by the edible oil refinery shall be determined by the following methods:
  - For each crude oil shipment received from off-site vendors per calendar month, the total quantity shall be recorded and a one-quart sample retained. The total monthly individual one-quart samples shall be combined to form a composite representative sample. The composite representative sample VOC concentration shall be determined by American Oil Chemist Society (A.O.C.S.) Official Method Ca 3b-87 or its equivalent as approved by the Department.
  - For all crude oil received from the on-site extraction facility per calendar month, the total quantity shall be recorded. Daily, one-quart samples of the crude oil produced at the extraction facility shall be retained. The total monthly individual one-quart samples shall be combined to form a composite representative sample. The total composite representative sample VOC concentration shall be determined by American Oil Chemist Society (A.O.C.S.) Official Method Ca 3b-87 or its equivalent as approved by the Department.

Rule 335-3-14-.04 [Anti-PSD]

- The lbs of VOC per lb of crude oil shall be determined by the following formula:

$$\begin{aligned} \text{lbs of VOC's per lb of crude oil received} \\ = [(VOC \text{ ppm of vendor oil})(Oil \text{ Quantity from Vendors}) + \\ (VOC \text{ ppm of on-site oil})(Oil \text{ Quantity from} \\ \text{on-site extraction})]/(Total \text{ lbs of oil received}) \end{aligned}$$

Rule 335-3-14-.04 [Anti-PSD]

## Emission Monitoring

- Annual tune-ups of boilers REF-1 and 2 must be conducted based on the requirements in §63.7540(a)(10)(i) through §63.7540(a)(10)(vi). Each annual tune-up must be no more than 13

months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

40 CFR 63 Subpart DDDDD, §63.7540(a)(10), §63.7540(a)(13), and §63.7515(d)

- A tune-up of boiler REF-5 must be conducted every 5 years based on the requirements in §63.7540(a)(10)(i) through §63.7540(a)(10)(vi). Each tune-up must be no more than 61 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

40 CFR 63 Subpart DDDDD, §63.7540(a)(12), §63.7540(a)(13), and §63.7515(d)

- All pollution control devices shall be inspected and cleaned no less frequently than annually and whenever visible emissions are observed.

Rule 335-3-16-.05(c)

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## Recordkeeping and Reporting Requirements

- Records documenting each control device inspection and cleaning shall be kept in a form suitable for inspection for a period of at least 5 years from the date of generation.

Rule 335-3-16-.05(c)

- The Permittee shall maintain records of the amount of fuel combusted in the boilers during each calendar month.

40 CFR 60 Subpart Dc, §60.48c(g)(2)

- The following records shall be maintained for a period of (5) years following the date of such record:
  - The monthly quantities of crude oil received at the edible oil refinery from the on-site extraction process and off-site vendors
  - The monthly off-site and on-site representative composite sample VOC concentration
  - The monthly lbs of VOC per lb of crude oil received by the edible oil refinery
  - The monthly hours of operation of the edible oil refinery

Rule 335-3-16-.05(c)

- A semi-annual VOC report shall be submitted to the Department by the 30<sup>th</sup> day of the month following the end of the semi-annual reporting period. This report shall include the following:
  - The monthly quantities of crude oil received at the edible oil refinery from the on-site extraction process and off-site vendors for the reporting period.
  - The monthly off-site and on-site representative composite sample VOC concentration for the reporting period.
  - The monthly lbs of VOC per lb of crude oil received by the edible oil refinery for the reporting period.
  - The monthly hours of operation of the edible oil refinery for the reporting period.

Rule 335-3-16-.05(c)

- If the boilers use a fuel other than natural gas during a period of natural gas curtailment or supply interruption, as defined in §63.7575, the facility must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption. The notification must include the information specified in §63.7545(f)(1) through (5).

40 CFR 63 Subpart DDDDD, §63.7545(f)

- The Permittee must submit annual compliance reports for boilers REF-1 and 2 and 5-year compliance reports for boiler REF-5 no later than January 31 as required by §63.7550(b). The reporting periods begin on January 1 and end on December 31.

40 CFR 63 Subpart DDDDD, §63.7550(b)

- The annual reports shall contain the following:
  - Company and Facility name and address
  - Process unit information, emissions limitations, and operating parameter limitations
  - Date of report and beginning and ending dates of the reporting period
  - Include the date of the most recent tune-up. Include the date of the most recent burner inspection if it was not done annually and was delayed until the next scheduled or unscheduled unit shutdown
  - Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

40 CFR 63 Subpart DDDDD, §63.7550(c)

- If the boilers use an alternative fuel other than natural gas, records must be kept of the total hours per calendar year that alternative fuel is burned and the total hours per calendar year that the boiler operated during periods of gas curtailment or gas supply emergencies.

40 CFR 63 Subpart DDDDD, §63.7555(h)

- Records required by 40 CFR 63 Subpart DDDDD must be kept in a form suitable for expeditious review for a period of 5 years following the date of each record. Records must be kept on site, or accessible from on site, for at least 2 years after the date of each occurrence. Records may be kept off site for the remaining 3 years.

40 CFR 63 Subpart DDDDD, §63.7560(a)-(c)**Expected Emissions**

According to the permit application, potential emissions are based on AP-42 emissions factors:

Emission Point	Pollutant	Potential Emissions	
		(lb/hr)	(TPY)
REF-1 & 2	NO <sub>x</sub>	1.23	5.39

	CO	2.18	9.57
	SO <sub>2</sub>	0.02	0.07
	PM	0.20	0.87
	PM <sub>10</sub>	0.20	0.87
	PM <sub>2.5</sub>	0.20	0.87
	VOC	0.14	0.63
	n-hexane	0.05	0.20
	CO <sub>2e</sub>	3,126	13,694
REF-3	VOC	<i>Included in EX-1 emissions</i>	
	n-hexane		
REF-5	NO <sub>x</sub>	0.20	0.88
	CO	0.42	1.84
	SO <sub>2</sub>	0.003	0.01
	PM	0.04	0.17
	PM <sub>10</sub>	0.04	0.17
	PM <sub>2.5</sub>	0.04	0.17
	VOC	0.03	0.12
	n-hexane	0.01	0.04
	CO <sub>2e</sub>	601	2,633
REF-4	PM	0.01	0.00
	PM <sub>10</sub>	0.01	0.00
	PM <sub>2.5</sub>	0.01	0.00
REF-6	PM	0.01	0.00
	PM <sub>10</sub>	0.01	0.00
	PM <sub>2.5</sub>	0.01	0.00

## EDIBLE OIL PACKAGING PLANT

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This area contains the following unit:

Emission Point	Description
BO-6	5.25 MMBtu/hr Natural Gas Hot Water Heater

### Applicability

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- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

Rule 335-3-16-.03

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

Rule 335-3-4-.01(1)

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03, *"Control of Particulate Emissions- Fuel Burning Equipment"*.

Rule 335-3-4-.03

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-5-.01, *"Control of Sulfur Compound Emissions – Fuel Combustion"*.

Rule 335-3-5-.01

- This source has an enforceable limit in place in order to prevent it from being subject to the provisions of ADEM Admin. Code r. 335-3-14-.04, *"Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration]"*.

Rule 335-3-14-.04 [Anti-PSD]

- This boiler has a design heat input capacity less than 10 MMBtu/hr. Therefore, it is not subject to the requirements of 40 CFR 60 Subpart D<sub>c</sub>, *"Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"*.

40 CFR 60 Subpart D<sub>c</sub>, §60.40c(a)

- This boiler is an existing industrial boiler at a major source of HAP. Therefore, it is subject to the applicable requirements of 40 CFR 63 Subpart DDDDD, *"National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters"*.

40 CFR 63 Subpart DDDDD, §63.7485



- The boiler is subject to the applicable requirements of 40 CFR 63 Subpart A, “General Provisions” as listed in Table 10 of 40 CFR 63 Subpart DDDDD.

40 CFR 63 Subpart DDDDD, §63.7565

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## Emissions Standards

### Opacity

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), “Visible Emissions”, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)

### Particulate Matter

- This source is subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.03(1), “Fuel Burning Equipment”, which states the allowable emissions from this unit shall not exceed that which is calculated using the following equation:

$$E = 1.38H^{-0.44}$$

Where:

E = Emissions in pounds per million Btu

H = Heat input in millions of Btu per hour

Rule 335-3-4-.03(1)

- Particulate emissions from this source shall not exceed 3.49 lb/hr (15.29 TPY). Since this unit now burns only natural gas, it should be in compliance with this limit.

Rule 335-3-14-.04 [Anti-PSD]

### Sulfur Dioxide

- Sulfur oxide emissions, measured as sulfur dioxide, from this unit shall not exceed 4.0 lb/MMBtu heat input (21.0 lb/hr). Since this unit now burns only natural gas, it should be in compliance with this limit.

Rule 335-3-5-.01(1)

### Operational

- At all times, the boiler must be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

40 CFR 63 Subpart DDDDD, §63.7500(a)(3)

### Compliance and Performance Test Methods and Procedures

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- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 6 of 40 CFR 60, Appendix A, shall be used in the determination of sulfur dioxide emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

### Emission Monitoring

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- A biennial tune-up of the boiler must be conducted based on the requirements in §63.7540(a)(10)(i) through §63.7540(a)(10)(vi). Each tune-up must be no more than 25 months after the previous tune-up. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

40 CFR 63 Subpart DDDDD, §63.7540(a)(11), §63.7540(a)(13), and §63.7515(d)

### Recordkeeping and Reporting Requirements

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- A biennial compliance report must be submitted with the information included in §63.7550(c)(5)(i) through (iii), (xiv), and (xvii).

40 CFR 63 Subpart DDDDD, §63.7550(b)

### Expected Emissions

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According to the permit application, potential emissions are based on AP-42 emissions factors:

Pollutant	Potential Emissions	
	lb/hr	TPY
PM	0.04	0.17

PM <sub>10</sub>	0.04	0.17
PM <sub>2.5</sub>	0.04	0.17
CO	0.44	1.93
NO <sub>x</sub>	0.53	2.30
SO <sub>2</sub>	0.003	0.01
VOC	0.03	0.13
n-hexane	0.01	0.04
CO <sub>2e</sub>	631	2,765

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## EMERGENCY FIRE PUMP ENGINES

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The facility contains two 305 HP emergency diesel-fired fire pump engines.

### Applicability

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- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-16-.03, *"Major Source Operating Permits"*.

Rule 335-3-16-.03

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*.

Rule 335-3-4-.01(1)

- These sources are certified fire pump engines manufactured after July 1, 2006. Therefore, they are subject to the applicable requirements 40 CFR Part 60 Subpart IIII, *"Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"*.

40 CFR 60 Subpart IIII, §60.4200(a)(2)(ii)

- These sources are stationary reciprocating internal combustion engines (RICE) at a major source of HAP. Therefore, they are subject to the applicable requirements of 40 CFR Part 63 Subpart ZZZZ, *"National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"*.

40 CFR 63 Subpart ZZZZ, §63.6585

### Emissions Standards

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#### Opacity

- These sources are subject to the applicable requirements of ADEM Admin. Code r. 335-3-4-.01(1), *"Visible Emissions"*, which states that no person shall discharge into the atmosphere from any source of emission, particulate of an opacity greater than that designated as 20% opacity, as determined by a 6-minute average. During one 6-minute period in any 60-minute period, a person may discharge into the atmosphere from any source of emissions particulate of opacity not greater than that designated as 40% opacity.

Rule 335-3-4-.01(1)

#### Particulate Matter

- Particulate emissions from these sources shall not exceed 0.20 g/kw-hr (0.15 g/HP-hr).

40 CFR 60 Subpart IIII, §60.4205(c) & Table 4

**Nitrogen Oxide**

- Nitrogen oxide emissions from these sources shall not exceed 4.0 g/kw-hr (3.0 g/HP-hr).

40 CFR 60 Subpart IIII, §60.4205(c) & Table 4

**Sulfur Dioxide**

- Diesel fuel used by these units must comply with the per-gallon standards in §80.510(b). Sulfur content of the fuel shall not exceed 15 ppm, the cetane index shall not be below 40, and the aromatic content shall not exceed 35 volume percent.

40 CFR 60 Subpart IIII, §60.4207(b)

**Operational**

- These units must be operated and maintained according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

40 CFR 60 Subpart IIII, §60.4211(a)(1)

- These units may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of these units are limited to 100 hours per year. There is no time limit on the use of these units in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. These units may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in 40 CFR 60 Subpart IIII, is prohibited.

40 CFR 60 Subpart IIII, §60.4211(f)

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**Compliance and Performance Test Methods and Procedures**

- Method 5 of 40 CFR 60, Appendix A, shall be used in the determination of particulate emissions.

Rule 335-3-1-.05

- Method 6 of 40 CFR 60, Appendix A, shall be used in the determination of sulfur dioxide emissions.

Rule 335-3-1-.05

- Method 7 of 40 CFR 60, Appendix A, shall be used in the determination of nitrogen oxide emissions.

Rule 335-3-1-.05

- Method 9 of 40 CFR 60, Appendix A, shall be used in the determination of opacity.

Rule 335-3-1-.05

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**Emission Monitoring**

- Each unit must be equipped with a non-resettable hour meter.

40 CFR 60 Subpart IIII, §60.4209(a)

- These engines must be certified to the emission standards in §60.4205(c) for the same model year and NFPA nameplate engine power. They must be installed and configured according to the manufacturer's specifications.

40 CFR 60 Subpart IIII, §60.4211(c)

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**Recordkeeping and Reporting Requirements**

- The facility must record hours of operation of each unit in emergency and non-emergency service as measured by a non-resettable hour meter. The facility must record the time of operation and the reason the engine was in operation during that time.

40 CFR 60 Subpart IIII, §60.4214(b)

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**Expected Emissions**

According to the permit application, potential emissions are based on AP-42 emissions factors and 100 hours of operation per year:

Pollutant	Potential Emissions (per engine)	
	lb/hr	TPY
PM	0.67	0.07
PM <sub>10</sub>	0.67	0.07
PM <sub>2.5</sub>	0.67	0.07
CO	2.04	0.20
NO <sub>x</sub>	9.46	0.95
SO <sub>2</sub>	0.63	0.06
VOC	0.75	0.08
CO <sub>2e</sub>	659.25	32.96

## **RECOMMENDATION**

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Based on the above analysis, I recommend Bunge North America, Inc., be issued a renewal for Major Source Operating Permit No. 712-0026. The facility should be able to meet the requirements of this permit and all state and federal air pollution regulations.

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Skyler Sanderson  
Industrial Minerals Section  
Energy Branch  
Air Division

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Date

## **APPENDIX A: DRAFT PROVISOS**

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